

**CITY OF GRASS VALLEY
SOUTHERN SPHERE OF INFLUENCE
PLANNING AND ANNEXATION PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT**

Prepared for:

CITY OF GRASS VALLEY
125 EAST MAIN ST.
GRASS VALLEY, CA 95945

Prepared by:



2729 PROSPECT PARK DRIVE, SUITE 220
RANCHO CORDOVA, CA 95670

OCTOBER 2013

**CITY OF GRASS VALLEY
SOUTHERN SPHERE OF INFLUENCE
PLANNING AND ANNEXATION PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT**

Prepared for:

CITY OF GRASS VALLEY
125 EAST MAIN ST.
GRASS VALLEY, CA 95945

Prepared by:

PMC
2729 PROSPECT PARK DRIVE, SUITE 220
RANCHO CORDOVA, CA 95670

OCTOBER 2013

ES EXECUTIVE SUMMARY

ES.1	Purpose and Scope of the EIR.....	ES-1
ES.2	Project Characteristics	ES-1
ES.3	Project Alternatives Summary	ES-3
ES.4	Areas of Controversy.....	ES-3
ES.5	Summary of Environmental Impacts.....	ES-3

1.0 INTRODUCTION

1.1	Background and Purpose	1.0-1
1.2	Type of Document.....	1.0-1
1.3	Intended Uses of the EIR.....	1.0-2
1.4	Organization and Scope.....	1.0-4
1.5	Environmental Review Process.....	1.0-7
1.6	Comments Received on the Notice of Preparation	1.0-9
1.7	Impacts Found to Be Less Than Significant in the IS/NOP	1.0-9

2.0 PROJECT DESCRIPTION

2.1	Project Location.....	2.0-1
2.2	Project Overview	2.0-1
2.3	Existing Conditions	2.0-13
2.4	Project Objectives	2.0-19
2.5	Project Characteristics	2.0-19
2.6	Regulatory Requirements, Permits, and Approvals.....	2.0-25

3.0 ENVIRONMENTAL ANALYSIS

3.0	Introduction to the Environmental Analysis and Assumptions Used	3.0-1
3.1	Aesthetics and Visual Resources	3.1-1
3.2	Air Quality	3.2-1
3.3	Biological Resources	3.3-1
3.4	Climate Change and Greenhouse Gases	3.4-1
3.5	Cultural and Paleontological Resources	3.5-1
3.6	Geology, Soils, and Mineral Resources.....	3.6-1
3.7	Hazards and Hazardous Materials.....	3.7-1
3.8	Hydrology and Water Quality	3.8-1
3.9	Noise.....	3.9-1
3.10	Land Use, Agricultural and Forest Resources.....	3.10-1
3.11	Public Services.....	3.11-1
3.12	Public Utilities	3.12-1
3.13	Transportation and Circulation	3.13-1

4.0 PROJECT ALTERNATIVES

4.1	Introduction	4.0-1
4.2	Alternative 1 – No Project Alternative.....	4.0-5
4.3	Alternative 2 – Reduced Commercial Alternative	4.0-8
4.4	Alternative 3 – Reduced Residential Density and Reduced Industrial Alternative	4.0-9
4.5	Environmentally Superior Alternative	4.0-11

TABLE OF CONTENTS

5.0 OTHER CEQA REQUIREMENTS

5.1	Cumulative Impacts.....	5.0-1
5.2	Growth-Inducing Impacts.....	5.0-6
5.3	Significant Irreversible Environmental Effects	5.0-9
5.4	Significant and Unavoidable Environmental Impacts	5.0-9

6.0 REPORT PREPARERS

APPENDICES (CONTAINED ON CD AT BACK OF DRAFT EIR)

Appendix 1.0-1	Notice of Preparation and NOP Comment Letter
Appendix 3.1-1	General Plan Consistency Analysis Table
Appendix 3.2-1	Air Quality Modeling Data
Appendix 3.3-1	Biological Resources Database Queries
Appendix 3.4-1	Greenhouse Gas Emissions Data
Appendix 3.6-1	Preliminary Geotechnical and Geological Hazards Report for Bear River Mill Site, Nevada County
Appendix 3.6-2	Preliminary Geologic Hazards Report for the Village at SouthHill
Appendix 3.6-3	Preliminary Geotechnical Report for Berriman Ranch Property
Appendix 3.6-4	Geotechnical Report for APN 29-350-12
Appendix 3.7-1	Final Removal Action Work Plan
Appendix 3.12-1	Wastewater Feasibility Analysis
Appendix 3.13-1	Southern Sphere of Influence EIR Traffic Impact Analysis

LIST OF TABLES

Table ES-1	Development Assumptions	ES-1
Table 2.0-1	Existing and Proposed Land Use Designations and Zoning by Parcel	2.0-2
Table 2.0-2	Development Assumptions	2.0-24
Table ES-2	Project Impacts and Proposed Mitigation Measures.....	ES-4
Table 3.2-1	Summary of Annual Ambient Air Quality Data.....	3.2-3
Table 3.2-2	Recommendations on Siting New Sensitive Land Uses Near Air Pollutant Sources	3.2-5
Table 3.2-3	Air Quality Standards	3.2-7
Table 3.2-4	Federal and State Ambient Air Quality Attainment Status for Nevada County ..	3.2-8
Table 3.2-5	NSAQMD-Recommended Significance Thresholds.....	3.2-10
Table 3.2-6	Estimated Short-Term Emissions of Criteria Air Pollutants	3.2-12
Table 3.2-7	Long-Term Operational Emissions from Project Buildout	3.2-16
Table 3.2-8	Predicted Local Mobile Source Carbon Monoxide Concentrations Future Conditions	3.2-18
Table 3.2-9	Screening Evaluation of Potential Cancer Risk to Proposed Residences Attributable to SR 49	3.2-21
Table 3.3-1	Summary of Species with the Potential to Occur Within the Study Area Vicinity	3.3-12
Table 3.4-1	Greenhouse Gases	3.4-2
Table 3.4-2	Global Warming Potential for Greenhouse Gases	3.4-3
Table 3.4-3	Potential Statewide Impacts from Climate Change	3.4-4
Table 3.4-4	Construction-Related Greenhouse Gas Emissions – Metric Tons per Year	3.4-16
Table 3.4-5	Unmitigated Project Greenhouse Gas Emissions – Project Operation (Metric Tons per Year)	3.4-17
Table 3.4-6	Project Buildout GHG Emissions per Service Population.....	3.4-17

Table 3.4-7	Mitigated Project Greenhouse Gas Emissions – Project Operation (Metric Tons per Year)	3.4-19
Table 3.5-1	Known Archaeological Sites Within the Project Area	3.5-3
Table 3.6-1	Modified Mercalli Intensity Scale for Earthquakes.....	3.6-2
Table 3.7-1	Known Hazardous Material Release Sites in the Vicinity of the Project Area.....	3.7-2
Table 3.7-2	Summary of Hazardous Materials Regulatory Authority	3.7-12
Table 3.9-1	Common Acoustical Terms and Descriptors	3.9-2
Table 3.9-2	Traffic Noise Levels from the 1999 General Plan EIR	3.9-7
Table 3.9-4	Noise Level Performance Standards Fixed Noise Sources	3.9-8
Table 3.9-5	Maximum Allowable Noise Exposure Transportation Noise Source.....	3.9-9
Table 3.9-8	Typical Construction Equipment Noise Levels	3.9-14
Table 3.10-1	Land Capability Classification System – Class Definitions	3.10-10
Table 3.10-2	Land Capability Classification System – Subclass Definitions	3.10-10
Table 3.10-3	Storie Index Rating System	3.10-11
Table 3.10-4	Project Area Soil Ratings	3.10-11
Table 3.12-1	Current and Projected Water Supplies (AFY)	3.12-2
Table 3.12-2	Current and Projected Normal Year Water Supply and Water Demand Comparison – 2010–2035 (AFY)	3.12-3
Table 3.12-3	Fire Flow General Plan Requirements	3.12-4
Table 3.12-4	Programmatic Estimated Water Demand for Maximum Buildout	3.12-6
Table 3.12-5	Wastewater Generation Potential	3.12-13
Table 3.12-6	Solid Waste Generation Potential.....	3.12-16
Table 3.13-1	Existing (2013) Intersection Levels of Service	3.13-7
Table 3.13-2	Existing (2013) Roadway Segment Levels of Service.....	3.13-7
Table 3.13-3	Intersection Level of Service Criteria.....	3.13-13
Table 3.12-4	Roadway Segment Daily Service Volume Criteria by Average Daily Traffic (ADT)	3.13-14
Table 3.13-5	Proposed Project Trip Generation	3.13-15
Table 3.13-6	Existing (2013) and Existing (2013) plus Proposed Project Intersection Levels of Service.....	3.13-23
Table 3.13-7	Roadway Segment Levels of Service	3.13-26
Table 3.13-8	Cumulative (2035) Intersection Levels of Service	3.13-29
Table 3.13-9	Cumulative (2035) Roadway Segment Levels of Service.....	3.13-29
Table 3.13-10	TAZ Trip Comparison	3.13-30
Table 3.13-11	Cumulative (2035) and Cumulative (2035) plus Proposed Project Intersection Levels of Service	3.13-33
Table 3.13-12	Cumulative (2035) and Cumulative (2035) plus Proposed Project Roadway Segment Levels of Service.....	3.13-34
Table 4.0-1	Existing Nevada County Zoning	4.0-6
Table 4.0-2	Traffic Generation, No Project Alternative	4.0-7
Table 4.0-3	Comparison of Alternatives to the Proposed Project	4.0-11

LIST OF FIGURES

Figure 2.0-1	Regional Vicinity Map	2.0-5
Figure 2.0-2	Project Location	2.0-7
Figure 2.0-3	Proposed General Plan Map	2.0-9
Figure 2.0-4	Proposed Rezoning.....	2.0-11
Figure 2.0-5	Existing General Plan Land Use Map.....	2.0-15
Figure 2.0-6	Existing Zoning.....	2.0-17
Figure 3.3-1	Vegetation Map	3.3-3
Figure 3.3-2	Previously Recorded Occurrences of Special-status Species.....	3.3-9

TABLE OF CONTENTS

Figure 3.6-1	NRCS Soils.....	3.6-5
Figure 3.7-1	Known Hazardous Materials Sites.....	3.7-5
Figure 3.8-1	FEMA Flood Zone.....	3.8-5
Figure 3.13-1	Study Intersections, Traffic Control, and Lane Geometries.....	3.13-3
Figure 3.13-2	Existing (2103) Traffic Volumes	3.13-5
Figure 3.13-3	Traffic Analysis Zones (TAZs)	3.13-11
Figure 3.13-4	Proposed Project Trip Assignment (East Development Only)	3.13-17
Figure 3.13-5	Proposed Project Trip Assignment (East and West Development)	3.13-19
Figure 3.13-6	Cumulative Project Trip Assignment (2035)	3.13-21
Figure 3.13-7	Cumulative (2035) Plus East and West Development Area Traffic Volumes ...	3.13-31

ES EXECUTIVE SUMMARY

This section provides an overview of the project and the environmental analysis. For additional detail regarding specific issues, please consult the appropriate chapter of Section 3.0, Environmental Analysis.

ES.1 PURPOSE AND SCOPE OF THE EIR

The California Environmental Quality Act (CEQA) requires the preparation of an environmental impact report (EIR) when there is substantial evidence that a project could have a significant effect on the environment. The purpose of an EIR is to provide decision-makers, public agencies, and the general public with an objective and informational document that fully discloses the potential environmental effects of the proposed project. The term "proposed project," as used in this EIR, refers to Southern Sphere of Influence Planning and Annexation project. The EIR process is specifically designed to describe the objective evaluation of potentially significant direct, indirect, and cumulative impacts of the proposed project; to identify alternatives that reduce or eliminate the project's significant effects; and to identify feasible measures that mitigate significant effects of the project, when applicable and appropriate. In addition, CEQA requires that an EIR identify those adverse impacts determined to remain significant after mitigation. This EIR provides an analysis of the potential environmental effects associated with future development that could result from the implementation of the Southern Sphere of Influence Planning and Annexation project, located in the City of Grass Valley.

ES.2 PROJECT CHARACTERISTICS

The proposed project includes the following proposed actions: (1) an amendment to the General Plan land use designations on approximately 416 acres; (2) a prezone of 416 acres of land to various zone districts consistent with the proposed General Plan amendments; and (3) the annexation of approximately 120 acres. No development is proposed as part of this project, and several of the properties involved are either fully developed or capable of additional development. However, because implementation of the project would result in changes to land use designations and zoning, the EIR addresses the development potential of the project area, where new development could potentially take place in the future.

To determine the possible future impacts that could occur if development were to occur within the project area, development assumptions were developed by the City using the maximum possible development potential of the parcels as described in the Grass Valley Development Code and the General Plan land use designations. For nonresidential parcels, the City made assumptions for floor area ratios based on the intensity of similar development in Grass Valley and the surrounding areas and the presence of site constraints such as steep slopes. The City assumes that the maximum possible FAR would be 0.15 for industrial-zoned properties and 0.25 for commercial-zoned sites. Table ES-1 provides the development assumptions used in the EIR.

**TABLE ES-1
DEVELOPMENT ASSUMPTIONS**

Proposed City Pre-Zoning	Total Acres	Potential Dwelling Units	Potential Nonresidential Square Footage
Proposed for Annexation			
CBP	11.4	–	124,146
M-1	19.6	–	128,066
M-2	88.2	–	576,103

Proposed City Pre-Zoning	Total Acres	Potential Dwelling Units	Potential Nonresidential Square Footage
<i>Total to Be Annexed</i>	<i>119.2</i>		<i>828,315</i>
Not Proposed for Annexation			
C-2	27.7	–	301,762
M-1	50.63		330,816
OS	117	0	–
Public	20.3	–	–
R-1	16.4	66	–
R-2	57.6	461	–
RE	7.5	7	–
<i>Total Not to Be Annexed</i>	<i>297.1</i>	<i>534</i>	<i>632,578</i>
Total Project Area	416.3	534	1,460,893

PROJECT OBJECTIVES

The following objectives have been identified for the proposed project:

1. Address the lack of industrial zoned land in the City and county. This will provide opportunities to accommodate growth in the “primary jobs” sector (industrial/manufacturing sector jobs).
2. Address an urban rather than rural land use development form to the south of the City. This allows the City to cluster the existing rural residential designated lands and increase residential densities to allow for an urban form and sustainable development pattern, which will lead to more efficient use of land and cost-effective infrastructure.
3. To protect existing industrial uses from incompatible land uses. Place compatible land uses and buffers next to existing industry.
4. Preserve the hillsides and habitat corridors in open space and incorporate into the overall land use plan.
5. Address the City's retail leakage by providing opportunities for residents to shop local and meet their entire range of retail needs.
6. Create opportunities to provide for a full range of jobs to meet the existing and long-term needs of the community.
7. Annex the 120 acres to better position the City to seek infrastructure grants for the extension of the sewer collection system and assist with road improvements, which are tied to job creation.

ES.3 PROJECT ALTERNATIVES SUMMARY

CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and reduce the degree of environmental impact. Section 4.0, Alternatives, provides a qualitative analysis of three scenarios:

- Alternative 1 – No Project Alternative
- Alternative 2 – Reduced Commercial Alternative
- Alternative 3 – Reduced Residential and Reduced Industrial Alternative

The Reduced Commercial Alternative (Alternative 2) and Reduced Residential Density and Reduced Industrial Alternative (Alternative 3) would result in less severe impacts in each of the issue area than the proposed project. However, the Reduced Commercial Alternative would result in a greater reduction in vehicle trips which would improve roadway level of service compared to the project and would have a corresponding decrease in criteria pollutant emissions, as well as greenhouse gas emissions. Therefore, the Reduced Commercial Alternative is considered the environmentally superior alternative.

ES.4 AREAS OF CONTROVERSY

The City of Grass Valley is the lead agency for the proposed project. In accordance with Section 15082 of the CEQA Guidelines, the City prepared and distributed a Notice of Preparation (NOP) of an EIR on May 17, 2013. This notice was circulated to the public, local, state, and federal agencies, and other interested parties to solicit comments on the proposed project. The NOP is presented in **Appendix A**. The only comment received in response to the NOP was the standard letter of receipt from the State Clearinghouse, which is also included in **Appendix A**. No Initial Study was prepared for the proposed project.

ES.5 SUMMARY OF ENVIRONMENTAL IMPACTS

Table ES-2 presents a summary of project impacts and proposed mitigation measures that would avoid or minimize potential impacts. In the table, the level of significance of each environmental impact is indicated both before and after the application of the recommended mitigation measure(s).

For detailed discussions of all project impacts and mitigation measures, the reader is referred to the topical environmental analysis in Section 3.0.

TABLE ES-2
PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
3.1 Aesthetics and Visual Resources			
Impact 3.1.1 Future development within the project area may impact scenic vistas and conflict with adopted visual/aesthetic plans and goals.	LS	None required.	LS
Impact 3.1.2 Future development in the project area would not be visible from a designated state scenic highway and therefore will not have a negative effect on a scenic resource within or near a scenic highway.	LS	None required.	LS
Impact 3.1.3 Future development associated with the project would alter the existing landscape characteristics of the project site from developed and vacant land to urban development and may degrade the existing visual character of the site.	LS	None required.	LS
Impact 3.1.4 Future development of the project area will result in the introduction of new daytime glare and nighttime lighting.	LS	None required.	LS
Impact 3.1.5 Implementation of the project and future development will contribute to the cumulative conversion of undeveloped land to developed land that would impact scenic resources.	LCC	None required.	LCC
Impact 3.1.6 Implementation of the project and future development will contribute to cumulative daytime glare and nighttime lighting as undeveloped land is converted to urban uses.	LCC	None required.	LCC

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC– Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
3.2 Air Quality			
Impact 3.2.1 Subsequent land use activities associated with implementation of the proposed project could result in short-term construction emissions that could violate or substantially contribute to a violation of federal and state standards for ozone and coarse and fine particulate matter.	SU	MM 3.2.1a Future development projects within the Southern Sphere of Influence Planning and Annexation project area shall submit to the NSAQMD for approval an Off-Road Construction Equipment Emission Reduction Plan prior to groundbreaking demonstrating that all off-road equipment (portable and mobile) meets or is cleaner than Tier 2 engine emission specifications unless prior written approval for any exceptions is obtained from the NSAQMD. Note that all off-road equipment must meet all applicable state and federal requirements. Construction contracts shall stipulate the following: <ul style="list-style-type: none"> • Emissions from on-site construction equipment shall comply with NSAQMD Regulation II, Rule 202, Visible Emissions. • The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes when not in use (as required by California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points. 	SU

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		<ul style="list-style-type: none"> All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Existing power sources (e.g., power poles) or clean fuel generators shall be utilized rather than temporary power generators where feasible. <p>MM 3.2.1b All architectural coating activities associated with construction of future development projects within the Southern Sphere of Influence Planning and Annexation project area shall be required to use interior and exterior coatings that contain less than 250 grams of volatile organic compounds (VOC/ROG) per liter of coating.</p> <p>MM 3.2.1c Grid power shall be used (as opposed to diesel generators) for construction site power needs where feasible during construction.</p> <p>MM 3.2.1d Deliveries of construction materials shall be scheduled to direct traffic flow to avoid the peak hours of 7 to 9 AM and 4 to 6 PM.</p>	
<p>Impact 3.2.2 Subsequent land use activities associated with implementation of the proposed project could result in long-term operational emissions that could violate or substantially contribute to a violation of federal and state standards for ozone and coarse and fine particulate matter.</p>	SU	Implement mitigation measure MM 3.4.1 (see Section 3.4, Climate Change and Greenhouse Gases).	SU

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact		Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.2.3	Implementation of the project would not contribute to localized concentrations of mobile-source CO that would exceed applicable ambient air quality standards.	LS	None required.	LS
Impact 3.2.4	Implementation of the proposed project would not result in increased exposure of existing or planned sensitive land uses to stationary or mobile-source TACs that would exceed applicable standards.	LS	None required.	LS
Impact 3.2.5	Implementation of the proposed project would not result in increased exposure of sensitive receptors to odorous emissions.	LS	None required.	LS
Impact 3.2.6	Long-term operation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development in the Mountain Counties Air Basin, would contribute to cumulative increases in emissions of ozone-precursor pollutants (ROG and NO _x) and PM ₁₀ that could contribute to future concentrations of ozone and PM ₁₀ , for which the region is currently designated nonattainment.	CC	Implement mitigation measures MM 3.2.1a through MM 3.2.1d .	CC/SU
3.3 Biological Resources				
Impact 3.3.1	Land uses and development consistent with the proposed project could result in a substantial adverse effect, either directly or through habitat modifications, on special-status plant species.	PS	MM 3.3.1 Rare Plant Surveys. The project applicant for each future development project proposed within the project area shall retain a qualified biologist to perform focused surveys to determine the presence/absence of special-status plant species with potential to occur in and adjacent to (within 100 feet, where appropriate) the proposed impact area, including construction access routes. These surveys shall be conducted in accordance	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		<p>with the <i>Guidelines for Assessing Effects of Proposed Developments on Rare Plants and Plant Communities</i> (Nelson 1994). These guidelines require that rare plant surveys be conducted at the proper time of year when rare or endangered species are both evident and identifiable. Field surveys shall be scheduled to coincide with known flowering periods and/or during appropriate developmental periods that are necessary to identify the plant species of concern.</p> <p>If any state- or federally listed CNPS List 1 or CNPS List 2 plant species are found in or adjacent to (within 100 feet) the proposed impact area during the surveys, these plant species shall be avoided to the extent possible and the following mitigation measures shall be implemented:</p> <ol style="list-style-type: none"> 1. In some cases involving state-listed plants, it may be necessary to obtain an incidental take permit under Fish and Game Code Section 2081. The applicant shall consult with the CDFW to determine whether a 2081 permit is required, and obtain all required authorizations prior to initiation of ground-breaking activities. 2. Before the approval of grading plans or any ground-breaking activity within the study area, the applicant shall submit a mitigation plan concurrently to the CDFW and the USFWS for review and comment. The plan shall include mitigation measures for the population(s) to be directly affected. Possible mitigation for 	

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		<p>impacts to special-status plant species can include implementation of a program to transplant, salvage, cultivate, or re-establish the species at suitable sites (if feasible), through the purchase of credits from an approved mitigation bank, or through an in-lieu fee program, if available. The actual level of mitigation may vary depending on the sensitivity of the species, its prevalence in the area, and the current state of knowledge about overall population trends and threats to its survival. The final mitigation strategy for directly impacted plant species shall be determined by the CDFW and the USFWS through the mitigation plan approval process.</p> <p>3. Any special-status plant species that are identified adjacent to the study area, but not proposed to be disturbed by the project, shall be protected by barrier fencing to ensure that construction activities and material stockpiles do not impact any special-status plant species. These avoidance areas shall be identified on project plans.</p>	
Impact 3.3.2 Land uses and development consistent with the proposed project could result in substantial adverse effects, either directly or through habitat modifications, to coast horned lizards.	PS	MM 3.3.2 Coast Horned Lizard Survey. Project applicants for each future development project proposed within the project area shall retain qualified biologists to determine if suitable habitat for this species occurs within 250 feet of the proposed impact area, including construction access routes as part of submittals of tentative maps and /or	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		improvement plans. If suitable habitat exists, development agreements will require preconstruction surveys to be performed by a qualified biologist in a manner to maximize detection of coast horned lizards (i.e., during warm weather, walking slowly) prior to any grading activity. If any coast horned lizards are discovered within the work areas, they shall be actively moved or passively encouraged to leave the work area. Workers shall drive slowly when driving overland, within suitable habitat areas, to allow any lizards to move out of the way of the vehicles.	
Impact 3.3.3 Land uses and development consistent with the proposed project could result in the loss of populations or essential habitat for California black rail and other special-status avian species, including raptors.	PS	MM 3.3.3a Migratory Bird Surveys. If clearing and/or construction activities for future development projects within the project area will occur during the migratory bird nesting season (April 15–August 15), preconstruction surveys to identify active migratory bird nests shall be conducted by a qualified biologist within 14 days of construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites within the proposed impact area, including construction access routes and a 200-foot buffer (if feasible). If active nest sites are identified within 200 feet of project activities, the applicant shall impose a limited operating period (LOP) for all active nest sites prior to commencement of any project construction activities to avoid construction or access-related disturbances to	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		<p>migratory bird nesting activities. An LOP constitutes a period during which project-related activities (i.e., vegetation removal, earth moving, and construction) will not occur, and will be imposed within 100 feet of any active nest sites until the nest is deemed inactive. Activities permitted within and the size (i.e., 100 feet) of LOPs may be adjusted through consultation with the CDFW and/or the City.</p> <p>MM 3.3.3b Raptor Surveys. If clearing and/or construction activities for future development projects will occur during the raptor nesting season (January 15–August 15), preconstruction surveys to identify active raptor nests shall be conducted by a qualified biologist within 14 days of construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites within the proposed impact area, including construction access routes and a 500-foot buffer (if feasible).</p> <p>If active nest sites are identified within 500 feet of project activities, the applicant shall impose an LOP for all active nest sites prior to commencement of any project construction activities to avoid construction or access-related disturbances to nesting raptors. An LOP constitutes a period during which project-related activities (i.e., vegetation removal, earth moving, and construction) will not occur, and will be imposed within 250 feet of any active nest sites until the nest is</p>	

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		deemed inactive. Activities permitted within and the size (i.e., 250 feet) of LOPs may be adjusted through consultation with the CDFW and/or the City.	
Impact 3.3.4 Land uses and development consistent with the proposed project may result in the disturbance, degradation, and/or removal of sensitive biological communities.	PS	MM 3.3.4 No Net Loss of Riparian Habitat. The project applicant for each future development project proposed within the project area shall ensure that there is no net loss of riparian vegetation. Mitigation can include on-site restoration or purchase of mitigation credits at a USACE-approved mitigation bank. Mitigation as required in regulatory permits issued through the CDFW, the USACE, or the RWQCB may be applied to satisfy this measure. Evidence of compliance with this mitigation measure shall be provided to the appropriate agencies prior to construction and grading activities for future development in the project area.	LS
Impact 3.3.5 Land uses and development consistent with the proposed project may result in the loss of jurisdictional waters of the United States, including wetlands.	PS	MM 3.3.5 No Net Loss of Federally Protected Waters. The City shall ensure that the project will result in no net loss of federally protected waters through impact avoidance, impact minimization, and/or compensatory mitigation, as determined in CWA Section 404 and 401 permits and/or 1602 Streambed Alteration Agreement. Evidence of compliance with this mitigation measure shall be provided prior to construction and grading activities for the proposed project.	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact		Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.3.6	Land uses and development consistent with the proposed project are not expected to result in impacts to the movement of native resident or migratory fish or wildlife species or established migratory corridors.	N	None required.	N
Impact 3.3.7	Land uses and development consistent with the proposed project are not anticipated to conflict with the standards of any local policies and ordinances, including the City's General Plan, Development Code, and Community Design Guidelines. As such, there would be no impact .	N	None required.	N
Impact 3.3.8	Land uses and development consistent with the proposed project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or any adopted biological resources recovery or conservation plan of any federal or state agency.	N	None required.	N
Impact 3.3.9	Land uses and development consistent with the proposed project, in combination with other reasonably foreseeable projects in the region, could result in mortality and loss of habitat for special-status species, wetlands, and waters of the United States. However, the project proposes large areas of open space in areas currently proposed for development; therefore, increasing open space areas and protecting biological resources in the region.	LCC	Implement mitigation measures MM 3.3.1 through MM 3.3.6 .	LCC
3.4 Climate Change and Greenhouse Gases				
Impact 3.4.1	Implementation of the proposed project will result in greenhouse gas emissions that would further contribute to significant impacts on the environment.	CC	MM 3.4.1 Subsequent development projects within the Southern Sphere of Influence Planning and Annexation project area shall submit to the City of Grass Valley and receive approval for	CC/SU

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		<p>a GHG Emissions Reduction Plan prior to issuance of building permits for the development project in question. The GHG Emissions Reduction Plan shall demonstrate adherence to the following measures or alternative measures equaling the same or greater emission reduction values.</p> <ul style="list-style-type: none"> Indoor water conservation measures shall be incorporated, such as use of low-flow toilets, showers, and faucets (kitchen and bathroom), in each residential unit. (181 metric ton reduction) The proposed project shall be designed to exceed state energy efficiency standards by 15 percent (to Tier 1 Title 24 Standards) as directed by Appendix A5 of the 2010 California Green Building Standards (CBSC 2011). This measure helps to reduce emissions associated with energy consumption. (222 metric ton reduction) Low-water-use landscaping (i.e., drought-tolerant plants and drip irrigation) shall be installed. At least 75 percent of all landscaping plants shall be drought-tolerant as determined by a licensed landscape architect or contractor. (4 metric ton reduction) The installation of wood-burning fireplaces shall be prohibited in all new residential units. (427 metric ton reduction) 	

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
3.5 Cultural and Paleontological Resources			
Impact 3.5.1 Implementation of the proposed project could result in the potential disturbance of known and undiscovered cultural resources.	PS	<p>MM 3.5.1a To the extent feasible, future development within the project area will avoid and preserve the cultural resource site Berriman #1 as well as prepare a site preservation plan as noted in the 2006 Archaeological Inventory Survey (Sean Jensen). If preservation "as is" cannot be ensured, then those specific attributes and qualities which renders site Berriman #1 significant per CEQA shall be determined through formal archaeological data collection work as specified in the 2006 survey.</p> <p>MM 3.5.1b When a proposal affects a previously undeveloped parcel in an area identified as having high or moderate cultural sensitivity in the General Plan, a cultural resource study shall be prepared as part of the CEQA analysis. If the proposal affects an area addressed previous cultural studies, the City shall review the report(s) to confirm whether conditions documented in the previously prepared study have changed and if the recommendations (if any) required by the study are still applicable and appropriate for the future proposed project. If the City determines that conditions have changed from the previous study, the City will require that an appropriate updated to the analysis or a new analysis be prepared.</p> <p>MM 3.5.1c If, during the course of construction of future projects within the project area, cultural resources (i.e., prehistoric sites, historic sites,</p>	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		<p>and isolated artifacts and features) are discovered, work shall be halted immediately within 50 feet of the discovery, and the City of Grass Valley Community Development Department shall be notified. A qualified archaeologist (that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology) shall be retained to determine the significance of the discovery. Based on the significance of the discovery, the professional archaeologist shall present options to the City and the project applicant for protecting the resources.</p> <p>The City and the project applicant shall consider mitigation recommendations presented by a qualified archaeologist (as described) for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and the project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The project applicant shall be required to implement any mitigation necessary for the protection of cultural resources.</p> <p>MM 3.5.1d The Native American community will be notified of any unanticipated and accidental discoveries of prehistoric or historic Native American cultural resources and will monitor activities associated with determining the</p>	

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		<p>significance of any discoveries as agreed to by the City of Grass Valley in consultation with the Native American community.</p> <p>MM 3.5.1e If human remains are discovered, all work shall be halted immediately within 50 feet of the discovery, the City of Grass Valley Community Development Department shall be notified, and the Nevada County Coroner must be notified, according to Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.</p>	
<p>Impact 3.5.2 Future development in the project area could result in the potential damage or destruction of undiscovered paleontological resources.</p>	PS	<p>MM 3.5.2 Should any potentially unique paleontological resources (fossils) be encountered during future development activities, work shall be halted immediately within 50 feet of the discovery, the City of Grass Valley Community Development Department shall be immediately notified, and a qualified paleontologist shall be retained to determine the significance of the discovery.</p> <p>The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and the project</p>	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The project applicant shall be required to implement any mitigation necessary for the protection of paleontological resources.	
Impact 3.5.3 Future development in the project area could result in the potential disturbance of undiscovered cultural resources.	PCC	Implement mitigation measures MM 3.5.1a through MM 3.5.1e .	LCC
Impact 3.5.4 Future development in the project area could result in the potential damage or destruction of undiscovered paleontological resources.	PCC	Implement mitigation measure MM 3.5.2 .	LCC
3.6 Geology, Soils, and Mineral Resources			
Impact 3.6.1 Future development of the project area could expose structures and people to substantial adverse effects involving the rupture of a known earthquake fault, strong seismic ground shaking, and seismic-related ground failure, including liquefaction.	LS	None required.	LS
Impact 3.6.2 Future development of the project area could result in structures and/or infrastructure being located on unstable geologic units or soils, or on soils that could become unstable as a result of the project, creating substantial risk to life or property.	LS	None required.	LS
Impact 3.6.3 Future development of the project area could result in structures and/or infrastructure being located on soils that are unstable due to past mining activity.	LS	None required.	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.6.4 Construction activities associated with future development of the project site could result in soil erosion or the loss of topsoil.	PS	None required.	LS
Impact 3.6.5 Future development of the project area could potentially preclude access to significant mineral resources and/or result in the establishment of land uses that may be incompatible with future mining activities.	LS	None required.	LS
Impact 3.6.6 The annexation of land to the City of Grass Valley will not likely expose structures and people to substantial adverse effects involving the rupture of a known fault, strong seismic ground shaking, seismic-related ground failure (including liquefaction), or landslides.	LCC	None required.	LCC
Impact 3.6.7 Annexation of land to the City of Grass Valley could potentially preclude access to significant mineral resources on the site and/or result in the establishment of land uses that may be incompatible with future mining activities in the project area.	LCC	None required.	LCC
3.7 Hazards and Hazardous Materials			
Impact 3.7.1 Future development that could occur as a result of implementation of the proposed project would include the transport, handling, use, and disposal of hazardous materials that could result in adverse environmental impacts.	LS	None required.	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.7.2 Future development that could result following implementation of the proposed project could create significant hazards to the public or the environment due to being located on multiple known hazardous materials release sites.	PS	MM 3.7.2a Prior to issuance of any grading plans or improvement permits for construction of roads, structures, or infrastructure on the Bear River Mill Site portion of the project area (APNs 22-160-04, -05, -06, -07, -09, -12, and -33), a certification of cleanup shall be obtained. MM 3.7.2b Prior to issuance of any grading permit or improvement permits for construction of roads, structures, or infrastructure on the La Barr Meadows Road property portion of the project area (APNs 09-620-10 and -12, 22-150-23 and -30, and 29-290-09), a certification of cleanup shall be obtained. MM 3.7.2c All recommendations contained in the Phase I Environmental Site Assessment prepared for the Berriman Ranch property (APNs 22-140-03 and 22-160-03) dated August 7, 2007, shall be implemented prior to issuance of grading permits or improvement permits for construction of roads, structures, or infrastructure in this portion of the project area.	LS
Impact 3.7.3 Implementation of the proposed project would not interfere with any adopted emergency response or evacuation plans.	LS	None required.	LS
Impact 3.7.4 Future development that could result from implementation of the proposed project would contribute to a cumulative increase in the transport, handling, use, and disposal of hazardous materials in the region that could result in adverse environmental impacts.	LCC	None required.	LCC

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC– Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.7.5 Implementation of the proposed project would contribute to development on lands that are known hazardous materials release sites or which may contain hazardous materials.	LCC	None required.	LCC
3.8 Hydrology and Water Quality			
Impact 3.8.1 Future development in the project area could impact surface water quality and may violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality through construction activities and long-term development, operation, and occupation of the project area.	LS	None required.	LS
Impact 3.8.2 Future development in the project area may impact groundwater quality and violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality through construction activities and long-term development, operation, and occupation of the project area.	PS	MM 3.8.2 As part of the final design of specific future development projects, soil borings shall be taken at representative locations within the future project footprint to analyze the subsurface soils that are present and the elevation of the subsurface water table. If these soil borings identify shallow groundwater within 2 feet of the proposed bottom elevation of underground utilities, detention ponds, and/or structure foundations, a liner and/or best available water quality control features (i.e., leachate management system) shall be incorporated into the design of proposed underground utilities, detention ponds, and foundations, subject to City drainage standards and approval.	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.8.3 Future development in the project area may alter the existing drainage patterns of the project area, resulting in substantial erosion, siltation, or an increase in the rate or amount of surface runoff that would result in flooding on- or off-site.	LS	None required.	LS
Impact 3.8.4 Future development in the project area may create or contribute runoff water that would exceed the capacity of an existing or planned stormwater drainage system.	LS	None required	LS
Impact 3.8.5 Most of the project area is not located in 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, nor would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows.	LS	None required.	LS
Impact 3.8.5 The project area is not located in an area that would be subject to significant risk as a result of the failure of a levee or dam or result in inundation by seiche, tsunami, or mudflow.	LS	None required.	LS
Impact 3.8.6 Implementation of the project, which includes construction activities and operations related to developed lands, would contribute to the cumulative impacts on water quality in the area.	LCC	None required.	LCC
Impact 3.8.7 Implementation of the project and future development would contribute to cumulative impacts related to flooding and stormwater systems.	LCC	None required.	LCC

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC– Cumulatively Considerable

Impact		Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
3.9 Noise				
Impact 3.9.1	Construction-generated noise levels associated with future development in the project area could result in a substantial increase in ambient noise levels at nearby noise-sensitive land uses.	PS	Compliance with Grass Valley Municipal Code. Otherwise, none required.	LS
Impact 3.9.2	As development in the project area occurs, traffic volumes would increase and result in an increase in traffic noise levels on the local roadway system. This project-generated traffic is expected to increase traffic noise levels by more than 1.5 dB for roadways that already exceed 65 dB.	PS	MM 3.9.2 For any residential development proposed within 600 feet of State Route 49 or 100 feet of La Barr Meadows Road, an applicant shall submit an acoustical analysis for any tentative map. If the acoustic analysis shows any proposed outdoor activity area within the 60 dB L _{dn} or greater noise contour, the applicant shall mitigate the impact to a level that is less than 60 dB L _{dn} . Specific mitigation measures include, but are not limited to, (1) a redesign or reorientation of the lots (which allows the home to create a barrier between the outdoor area and noise source); (2) the addition of solid fencing or wall; (3) an increased setback; or (4) a redesign of the project to utilize the existing development or topography and vegetation to reduce the impact to an acceptable level.	SU
Impact 3.9.3	Groundborne vibration levels would not exceed commonly applied criteria for structural damage or human annoyance.	LS	None required.	LS
Impact 3.9.4	Stationary sources of noise associated with the project may expose noise sensitive land uses to noise levels that exceed City noise standards.	LS	None required.	LS
Impact 3.9.5	The proposed project would contribute to the cumulative traffic noise environment at nearby land uses.	CC	None available.	CC/SU

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.9.6 Operation of the proposed project could contribute to the noise and vibration environment at nearby land uses.	LCC	None required.	LCC
3.10 Land Use, Agricultural and Forest Resources			
Impact 3.10.1 The proposed project would not physically divide an established community.	N	None required.	N
Impact 3.10.2 The project proposes to amend the City of Grass Valley General Plan land use designations within the project area. Additionally, the project proposes to prezone the project area with designations consistent with the General Plan land use designations.	LS	None required.	LS
Impact 3.10.3 The project site is not within or near the boundaries, nor subject to any, habitat conservation plan or natural community conservation plan.	N	None required.	N
Impact 3.10.4 The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.	N	None required.	N
Impact 3.10.5 The proposed project would not conflict with or change any lands zoned for agricultural use or impact any lands with a Williamson Act contract.	N	None required.	N
Impact 3.10.6 The proposed project would not involve any other changes in land use that would impact existing farmland on-site or in the area.	N	None required.	N
Impact 3.10.7 The proposed project would not conflict with or change the zoning of any lands zoned for forestland, timberland, or timberland production.	N	None required.	N

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.10.8 Portions of the project area meet the definition of forestland.	PS	None required.	LS
Impact 3.10.9 The proposed project would not result in any significant increase in land use incompatibility.	LCC	None required.	LCC
Impact 3.10.10 The proposed project would not result in the cumulative loss of agricultural or forest resources nor does it reduce the loss of lands designated or zoned for agricultural, forest, or open space purposes.	LCC	None required.	LCC
3.11 Public Services			
Impact 3.11.1 Future development within the project area would not result in substantial impacts associated with the need to provide new fire protection facilities and equipment, and the provision of firefighting personnel, in order to maintain acceptable service ratios, response times, and other performance objectives.	LS	None required.	LS
Impact 3.11.2 Future development in the project area would locate structures near vegetation and wooded areas, thereby exposing structures and people to wildland fire hazards.	LS	None required.	LS
Impact 3.11.3 As future development occurs within the project area, additional police staffing and equipment will be required to provide adequate citywide police service.	LS	None required.	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC– Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.11.4 Future residential development that could occur within the project area would increase student enrollment at schools within the Grass Valley School District and the Nevada Joint Union High School District. The project would not require new school facilities and related services.	LS	None required.	LS
Impact 3.11.5 Future development within the project area would not result in substantially increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LS	None required.	LS
Impact 3.11.6 Future development within the project area would result in the construction of additional park and recreational facilities, which might have an adverse physical effect on the environment.	LS	None required.	LS
Impact 3.11.7 The proposed project would result in the cumulative demand for new fire, police, school, and recreational services.	LCC	None required.	LCC
3.12 Public Utilities			
Impact 3.12.1 Future development within the project area would require the construction of new water lines, the construction of which could cause significant environmental effects.	LS	None required.	LS
Impact 3.12.2 Future development within the project area would not result in insufficient water supplies available to serve the future development from existing entitlements and resources.	LS	None required.	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC– Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.12.3 Future development within the project area would not 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).	LS	None required.	LS
Impact 3.12.4 Future development that could occur within the project area would result in the need to provide new wastewater conveyance facilities to serve the area.	LS	None required.	LS
Impact 3.12.5 Future development within the project area would generate additional wastewater flows that would require treatment at the City's WWTP. The increased flows could affect the treatment capacity at the City's WWTP.	LS	None required.	LS
Impact 3.12.6 Future development within the project area would result in an increase in the generation of solid waste and a corresponding need for disposal facilities.	LS	None required.	LS
Impact 3.12.7 Future development within the project area could require additional electrical and natural gas infrastructure and supplies.	LS	None required.	LS
Impact 3.12.8 Future development within the project area would require the extension of infrastructure for cable and telephone service, the installation of which could have environmental impacts.	LS	None required.	LS

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.12.9 The proposed project will result in the cumulative demand for new or upgraded sewer, water, electrical, natural gas, solid waste, telephone, and cable services.	LCC	None required.	LCC
3.13 Transportation and Circulation			
Impact 3.13.1 Future development in the project area could conflict with plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	S	MM 3.13.1 The project proponent or successor in interest is responsible for project improvements at the SR 49/McKnight Way intersection as follows: <ol style="list-style-type: none"> 1. If the project would result in more than 63 total PM peak hour trips and add more than 10 PM peak-hour trips at the intersection of McKnight Way at Taylorville Road, McKnight Way at SR 49 SB Ramps and/or at McKnight Way at S. Auburn St/La Barr Meadows Road, a traffic study shall be prepared to determine the extent of impact(s) and appropriate mitigation responsibility assigned as a condition of approval. As a result of the study, the project could: <ol style="list-style-type: none"> a) Be required to install the improvements at the SR 49/McKnight Way intersection; or b) Pay the project's proportionate share of the SR 49/McKnight Way intersection improvements; or c) Construct some associated improvement that would address project impacts at the 	SU

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC– Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		SR 49/McKnight Way intersection; or d) Be required to complete some combination of the above to address project impacts at the SR 49/McKnight Way intersection identified in the traffic study. None available to mitigate impact on roadway segments.	
Impact 3.13.2 The project could substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LS	None required.	LS
Impact 3.13.3 The project could result in inadequate emergency access.	LS	None required.	LS
Impact 3.13.4 The project could conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	LS	None required.	LS
Impact 3.13.5 When combined with cumulative conditions, future development within the project area could cause an increase in traffic that is substantial in relation to the existing traffic load and carrying capacity of the street system, or may exceed established level of service (LOS) standards at study area intersections.	LCC	None required.	LCC
Impact 3.13.6 When combined with cumulative conditions, future development within the project area could cause an increase in traffic that is substantial in relation to the existing traffic load and carrying capacity of the street system, or	CC	No feasible mitigation measures are available.	CC/SU

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

ES EXECUTIVE SUMMARY

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
may exceed established level of service (LOS) standards at study area roadway segments.			
Impact 3.13.7 Full buildout of the project area, in combination with cumulative development in Grass Valley and the surrounding areas, would not result in inadequate emergency access.	LCC	None required.	LCC
Impact 3.13.8 Full buildout of the project area could conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.	PCC	MM 3.13.8 The City of Grass Valley shall establish an alignment and development setback for new development proposed within the area depicted on Figure 3.13-8 intended for the future Crestview Drive interchange with State Route 49. As part of the setback area, the City will determine the extent of any development that can occur within the interchange setback area.	LCC

N – No Impact

LS – Less Than Significant

PS – Potentially Significant

S – Significant

SU – Significant and Unavoidable

LCC – Less Than Cumulatively Considerable

PCC – Potentially Cumulatively Considerable

CC – Cumulatively Considerable

1.0 INTRODUCTION

This section summarizes the purpose of the Draft Environmental Impact Report (EIR), describes the environmental procedures that are to be followed according to state law, discusses the intended uses of the EIR, and describes the EIR's scope and organization, contact person, and impact terminology.

1.1 BACKGROUND AND PURPOSE

The EIR has been prepared in conformance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental effects relative to the implementation of the Southern Sphere of Influence Planning and Annexation project (proposed project; project). The project area is located in Nevada County adjacent to the southern boundary of the City of Grass Valley. The entire project area is within the City's existing Sphere of Influence (SOI), so was considered in the 2020 Grass Valley General Plan as a possible future expansion area.

The City of Grass Valley (City), acting as lead agency, has prepared this EIR based on direction from the City Council to provide the public and responsible and trustee agencies with information about the potential environmental effects of the proposed project. As described in CEQA Guidelines Section 15121(a), an EIR is a public informational document that assesses the potential environmental effects of the proposed project, as well as identifies mitigation measures and alternatives to the proposed project that could reduce or avoid its adverse environmental impacts. Public agencies are charged with the duty to consider and minimize environmental impacts of proposed development where feasible, and an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

CEQA requires the preparation of an EIR prior to approving any "project" that may have a significant effect on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action that has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section (15378[a])). With respect to the proposed project, the City has determined that the proposed annexation, rezoning, and General Plan Amendment are considered a project within the definition of CEQA and could have the potential for resulting in significant environmental effects.

In this instance, the project consists of the annexation of approximately 120 acres, a General Plan Amendment to change existing land use designations on approximately 416 acres, and rezoning of approximately 416 acres. Rezoning is a required part of the annexation process. Most of the parcels located within the project area already contain some development, but some could potentially accommodate additional developed uses. The project does not proposed any development, but it is recognized that annexation and the change in land use designations and zoning districts could potentially allow for future development that could not occur based on existing zoning.

1.2 TYPE OF DOCUMENT

PROGRAM EIR

The CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a program EIR pursuant to CEQA Guidelines Section 15168.

A program EIR is an EIR that may be prepared on a series of actions that can be characterized as one large project and are related in one of the following ways:

1.0 INTRODUCTION

- 1) Geographically
- 2) As logical parts in the chain of contemplated actions
- 3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program
- 4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways

A program EIR enables the lead agency to consider broad environmental implications of development on a conceptual basis, recognizing that a series of actions will occur prior to development. Because they are prepared relatively early on, program EIRs allow greater flexibility in dealing with overall development options, basic environmental issues, and cumulative impacts.

Subsequent activities in the program must be examined in the light of the program EIR to determine whether additional environmental documentation must be prepared. The program EIR identifies and mitigates the effects of the overall program of development, and the lead agency incorporates feasible mitigation measures and alternatives developed in the program EIR into subsequent actions to implement the project. Because the project does not propose any development activities, the program EIR analysis is based on broad development assumptions. Subsequent environmental analysis and/or other types of studies may be needed for future development within the project area.

1.3 INTENDED USES OF THE EIR

This EIR has been prepared in accordance with CEQA. The EIR is intended to evaluate the possible environmental impacts that could occur if the project area were to be developed in the future to the greatest extent possible. This EIR, in accordance with CEQA Guidelines Section 15126, should be used as the primary environmental document to evaluate all planning and permitting actions associated with the project. Please refer to Section 2.0, Project Description, for a detailed discussion of the project.

KNOWN RESPONSIBLE AGENCIES

For the purpose of CEQA, the term "responsible agency" includes all public agencies other than the lead agency that have discretionary approval power over the project or an aspect of the project. The following agencies are identified as potential responsible agencies:

Federal Agencies

US Army Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

The project area is in the vicinity of Wolf Creek, which is considered jurisdictional waters by the US Army Corps of Engineers (USACE). Additionally, the project area includes several wetland features and seasonal creek corridors that may also be subject to USACE jurisdiction. Any discharge of fill material into waters of the United States would require a permit from the USACE issued under the authority of Section 404 of the Clean Water Act.

State Agencies

California Department of Transportation, District 3
703B Street
P.O. Box 911
Marysville, CA 95901

The California Department of Transportation (Caltrans) will need to issue any encroachment permits (if needed) for future development in the project area, as well as for the future development of utility infrastructure that will be needed to serve the project area.

California Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

The Regional Water Quality Control Board (RWQCB) regulates wastewater disposal and stormwater discharges through established waste discharge requirements, a National Pollutant Discharge Elimination System (NPDES) permit, and a stormwater pollution prevention plan (SWPPP).

Department of Toxic Substances Control, Sacramento Regional Office
8800 Cal Center Drive
Sacramento, CA 95826-3200

The Department of Toxic Substances Control (DTSC) regulates the cleanup of contaminated properties, regulates facilities that use and handle hazardous wastes, and enforces hazardous waste laws. DTSC will be involved in cleanup activities for contaminated sites located within the project area and will regulate hazardous material use by facilities located within the project area.

Local Agencies

Nevada County Local Agency Formation Commission
950 Maidu Avenue
Nevada City, CA 95959

The Local Agency Formation Commission (LAFCo) of Nevada County is a legislatively established commission responsible for coordinating logical and timely changes in local governmental boundaries, conducting special studies that review ways to reorganize, simplify, and streamline governmental structure, and preparing a sphere of influence for each city and special district in each county. LAFCo will consider and ultimately approve or deny the request for annexation to the City and changes to service district boundaries.

Northern Sierra Air Quality Management District
200 Litton Drive, Suite 320
Nevada City, CA 95945

1.0 INTRODUCTION

The Northern Sierra Air Management District was formed in 1986 by the merging of the air pollution control districts of Nevada, Plumas, and Sierra counties. The district participates with other air districts in the Mountain Counties Air Basin (MCAB) 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 Northern Sierra Air Quality Management District is one of seven air pollution control districts that make up the MCAB. The air basin consists of the Northern Sierra, Placer County, El Dorado County, Amador County, Calaveras County, Tuolumne County, and Mariposa County air pollution control districts. These seven air quality districts work together to employ a regional approach to air pollution control.

KNOWN TRUSTEE AGENCIES

For the purpose of CEQA, the term “trustee agency” means a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of California. The following agency is identified as a trustee agency:

California Department of Fish and Wildlife, Region 2
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

The California Department of Fish and Wildlife (CDFW) is a trustee agency with authority, in accordance with the provisions of Fish and Game Code Section 1802, to exercise administration over the fish and wildlife resources of California. The CDFW will provide comments and recommend measures for the conservation and prevention of damage to fish and/or wildlife resources of the state. The CDFW is also responsible for issuing a Streambed Alteration Agreement pursuant to Fish and Game Code Section 1602, if necessary, for activities that may substantially affect a stream.

1.4 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. The environmental issues addressed in this EIR were established through review of environmental documentation developed for the site, environmental documentation for nearby projects, responses to the Notice of Preparation (NOP), and direction given by the City Council. Based on these comments, agency consultation, and review of the project application, the City determined the scope for this EIR.

The EIR for the Grass Valley Southern Sphere of Influence Planning and Annexation project is organized in the following manner:

EXECUTIVE SUMMARY

This section provides an overview of the project, the environmental analysis, areas of controversy, and a summary of the alternatives to the project and provides a concise summary matrix of the project's environmental impacts and associated mitigation measures.

SECTION 1.0 – INTRODUCTION

This section summarizes the purpose of the EIR, describes the environmental procedures that are to be followed according to state law, discusses the intended uses of the EIR as required by CEQA Section 15124(d), and describes the EIR's scope and organization, contact person, and impact terminology.

SECTION 2.0 – PROJECT DESCRIPTION

This section describes and depicts the location of the project both regionally and locally, describes the existing conditions in the project area, and describes surrounding uses. The general objectives for the project are listed in that section. A general description of the project's technical, economic, engineering, and environmental characteristics are described and depicted. A list of the approvals required to implement the project are included. As the City of Grass Valley will be required to make a number of decisions on this project, all decisions subject to CEQA are listed and the implementation process is described in the order that it will occur, including both actions the City will take now and actions that may be taken in the future.

SECTION 3.0 – ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

Section 3.0 contains an analysis of environmental topic areas as identified below. Each topic area will contain a description of the existing environmental setting, establish the regulatory guidance for that topic, and list the thresholds of significance against which the anticipated impacts will be evaluated. The actions being requested are the prezone of approximately 416 acres with the intention of eventually expanding the City of Grass Valley, a General Plan Amendment to adjust the City's General Plan land use designations for the 416-acre project area, and the annexation of approximately 120 acres of the project area.

3.1 Aesthetics and Visual Resources: This section assesses the potential for changes to the visual character of the project area, potential effects on scenic vistas and designated scenic highways, and the overall increase in nighttime illumination produced by the project.

3.2 Air Quality: Assesses local and regional air quality impacts associated with project implementation.

3.3 Biological Resources: Addresses the project's impacts on habitat, vegetation, and wildlife, while emphasizing the potential degradation or elimination of important habitat, and the impacts on listed, proposed, and candidate threatened and endangered species.

3.4 Climate Change and Greenhouse Gases: Analyzes the project's effect on greenhouse gas emissions and the associated effects of climate change.

3.5 Cultural and Paleontological Resources: Considers and evaluates the potential impacts of the proposed project on cultural and paleontological resources. Cultural resources include historic buildings and structures, historic districts, historic sites, prehistoric and historic archaeological sites, and other prehistoric and historic objects and artifacts.

3.6 Geology, Soils, and Mineral Resources: Addresses the potential impacts the project may have on soils and soil suitability for development.

3.7 Hazards and Hazardous Materials: Assesses the likelihood for the presence of hazardous materials or conditions in the project area for their potential impact on human health

1.0 INTRODUCTION

3.8 Hydrology and Water Quality: Examines the impacts of the project on local hydrological conditions, including drainage areas, groundwater, and changes in drainage flow rates.

3.9 Noise: Examines noise impacts during construction and at the maximum possible buildout of the project area, as related to potential noise generation from mobile and stationary sources. This section also addresses the impact of noise generation on neighboring residential uses.

3.10 Land Use, Agricultural and Forest Services: Examines the potential for the proposed project to result in the conversion of agricultural land and forest land as defined in state law. This section also addresses the Local Agency Formation Commission (LAFCo) definition of agricultural lands and how the proposed annexation would affect LAFCo agricultural land.

3.11 Public Services: Describes the service providers that would serve the project area, including fire protection and emergency services, police protection, parks and recreation, and school facilities.

3.12 Public Utilities: Addresses the impacts the project will have on the need for additional public services.

3.12 Transportation and Circulation: Addresses the impacts on the local and regional road system. In addition, the section assesses impacts on transit, bicycle, and pedestrian facilities.

SECTION 4.0 – ALTERNATIVES TO THE PROPOSED PROJECT

CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and avoid and/or lessen the environmental effects of the project. The alternatives analysis provided in this EIR includes a comparative analysis between the project and the selected alternatives. Alternatives to the project analyzed in this document include:

Alternative 1 – No Project. Under this alternative, the proposed project would not be adopted and the property would continue to be available for development consistent with the existing Nevada County General Plan land use designations and zoning districts. The Nevada County zoning ordinance provides development standards for future development of the area, so the existing zoning for the project site is used to determine development potential based on existing zoning. The existing Nevada County zoning for the project site includes Business Park (BP), Community Commercial (C2), Light Industrial (M1), Medium Density Residential (R2), and Residential Agriculture (RA)..

Alternative 2 – Reduced Commercial. Under this alternative, the allowable retail commercial area would be reduced from approximately 300,000 square feet to 200,000 square feet.

Alternative 3 – Reduced Residential Density and Reduced Industrial. Under this alternative, the 57.6 acres of Two-Family Residential (R-2) would be rezoned for Single Family Residential (R-1) and the amount of General Industrial (M-2) would be reduced by approximately 16.5 acres, which would instead be zoned for open space. This alternative would result in a reduction in residential potential of 230 units, for a total residential potential of 304 units and a reduction of approximately 100,000 square feet of industrial use.

SECTION 5.0 – OTHER CEQA REQUIREMENTS

This section discusses the additional topics statutorily required by CEQA. The topics discussed include a summary of the cumulative impacts that are included in each of the technical sections, significant irreversible environmental changes/irretrievable commitment of resources, significant and unavoidable environmental impacts, and growth-inducing impacts.

SECTION 6.0 – REPORT PREPARERS

This section lists all authors and agencies that assisted in the preparation of the report by name, title, and company or agency affiliation.

APPENDICES

This section includes all notices and other procedural documents pertinent to the EIR, as well as all technical material prepared to support the analysis.

1.5 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR will involve the following procedural steps:

NOTICE OF PREPARATION AND INITIAL STUDY

In accordance with Section 15082 of the CEQA Guidelines, the City of Grass Valley prepared a Notice of Preparation (NOP) of an EIR on May 17, 2013. The City of Grass Valley was identified as the lead agency for the proposed project. The NOP was circulated to the public, local, state and federal agencies, and other interested parties to solicit comments on the proposed scope of this EIR. The NOP is presented in **Appendix 1.0-1**. The only comment received in response to the NOP was the standard letter of receipt from the State Clearinghouse.

EIR

The EIR contains a description of the project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives. Upon completion of the EIR, the City will file the Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (Public Resources Code Section 21161).

1.0 INTRODUCTION

PUBLIC NOTICE/PUBLIC REVIEW

Concurrent with the NOC, the City will provide public notice of the availability of the EIR for public review and invite comment from the general public, agencies, organizations, and other interested parties. By law, the public review and comment period should be no less than 30 days or longer than 90 days. The review period in this case is expected to be 45 days. Public comment on the EIR will be accepted both in written form and orally at public hearings. Although no public hearings to accept comments on the EIR are required by CEQA, the City expects to hold a public comment meeting during the 45-day review period prior to EIR certification. Notice of the time and location of the hearing will be published prior to the hearing. All comments or questions regarding the EIR should be addressed to:

Tom Last, Community Development Director
City of Grass Valley
125 East Main Street
Grass Valley, CA 95945-6588

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments made at any public hearings. The Final EIR will comprise the EIR, all comments received on the EIR, the responses to those comments, and any errata to the EIR (if any).

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The Grass Valley City Council will review and consider the Final EIR. If the City Council finds that the Final EIR is "adequate and complete," the Council may certify the Final EIR, at a public hearing. The rule of adequacy generally holds that the EIR can be certified if it: (1) shows a good faith effort at full disclosure of environmental information; and (2) provides sufficient analysis to allow decisions to be made regarding the project in contemplation of its environmental consequences.

Upon review and consideration of the Final EIR, the City Council may take action to approve, revise, or reject the project. A decision to approve the project would be accompanied by written findings in accordance with CEQA Guidelines Section 15091 and, if applicable, Section 15093. A Mitigation Monitoring and Reporting Program, as described below, would also be adopted for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. This Mitigation Monitoring and Reporting Program will be designed to ensure these measures are carried out during project implementation.

MITIGATION MONITORING

CEQA Section 21081.6(a) requires lead agencies to adopt a reporting and mitigation monitoring program to describe measures that have been adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment. The specific "reporting or monitoring" program required by CEQA is not required to be included in the EIR. However, it will be presented to the City Council for adoption. Throughout the EIR, mitigation measures have been clearly identified and presented in language that will facilitate establishment of a monitoring and/or reporting program. Any mitigation measures adopted by

the City as conditions for approval of the project will be included in a Mitigation Monitoring and Reporting Program to verify compliance.

1.6 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

As mentioned above, the only comment received in response to the NOP was from the State Clearinghouse, acknowledging the receipt of the NOP and soliciting comments from other agencies. All comments, and the Notice of Preparation, have been included as **Appendix 1.0-1** to this EIR.

- Governor's Office of Planning and Research, State Clearinghouse, May 20, 2013

1.7 IMPACTS FOUND TO BE LESS THAN SIGNIFICANT IN THE IS/NOP

An Initial Study was not circulated with the NOP, and no topics of environmental concern were focused out.

2.0 PROJECT DESCRIPTION

This section describes the location of the project, both regionally and locally, the existing conditions in the project area, and surrounding uses. The objectives for the project sought by the City are also listed.

2.1 PROJECT LOCATION

The Southern Sphere of Influence Planning and Annexation project (proposed project; project) is within the City of Grass Valley Planning Area, which is located in the central/western portion of Nevada County, approximately 30 miles east of Marysville and about 20 miles north of Auburn at approximately 2,200 to 2,800 feet above mean sea level (**Figure 2.0-1, Regional Vicinity Map**). The project area is located along State Route (SR) 49 adjacent to the southern City limit line beginning in the vicinity of McKnight Road and extending south along SR 49 and La Barr Meadows Road (**Figure 2.0-2, Project Location**). Regional access to the project is from SR 49, a north-south state-owned facility that traverses Nevada County.

2.2 PROJECT OVERVIEW

The proposed project includes the following proposed actions: (1) an amendment to the General Plan land use designations on approximately 416 acres; (2) a prezone of 416 acres of land to various zone districts consistent with the proposed General Plan amendments; and (3) the annexation of approximately 120 acres. No development is proposed as part of this project, and several of the properties involved are either fully developed or capable of additional development.

General Plan Amendment: The Grass Valley General Plan currently designates the project area as Urban Estate Density (UED), Commercial (C), Business Park (BP), and Special Development Area (SDA). The proposed project would change the General Plan designations to include a range of residential, commercial, and manufacturing land uses as shown in **Table 2.0-1**. Also see **Figure 2.0-3, Proposed General Plan Map**, for the location of the land use designations for land within the project area.

Prezoning: As part of the proposed project, the City will prezone the properties consistent with the revised General Plan. California Government Code Section 65859 allows the City to adopt an ordinance zoning land outside of the City. The provisions of the prezone ordinance and zoning districts will not become effective until the property is annexed. Until the property is annexed, the properties will be subject to the existing Nevada County zoning. Prezoning is a required component of the annexation process. **Table 2.0-1** lists the existing parcel zoning for land within the project area and the anticipated zoning as part of the proposed project (see also **Figure 2.0-4, Proposed Prezoning**). The proposed zoning will be consistent with both the amended General Plan land use designations and the existing business and manufacturing uses found within the project area.

2.0 PROJECT DESCRIPTION

**TABLE 2.0-1
EXISTING AND PROPOSED LAND USE DESIGNATIONS AND ZONING BY PARCEL**

APN	Size (Acres)	Existing Use	Existing City Land Use Designation	Proposed Land Use Designation	Existing Nevada County Zoning	Proposed City Prezoning	Proposed for Annexation
09-620-12	19.1	Vacant	UED	UMD	RA-1.5	R-2	No
22-140-03	16.4	Vacant	UED/C	ULD/UMD/Com/OS	C2/R2/RA-1.5	R-1	No
22-140-03 ¹	25.2	Vacant	UED/C	ULD/UMD/C/OS	C2/R2/RA-1.6	R-2	No
22-140-03 ¹	26.3	Vacant	UED/C	ULD/UMD/C/OS	C2/R2/RA-1.7	C-2	No
22-140-03 ¹	27.5	Vacant	UED/	ULD/UMD/C/OS	C2/R2/RA-1.8	OS	No
22-140-05	1.5	Grange Hall	BP	M/I	M1	M-1	Yes
22-140-08	5.4	Industrial	BP	M/I	M1	M-2	Yes
22-140-10	10.1	Industrial	BP	M/I	M1	M-2	Yes
22-140-11	1.5	Industrial	BP	M/I	M1	M-2	Yes
22-140-12	1	Rental Yard	BP	M/I	M1	M-2	Yes
22-140-21	2.8	Industrial	BP	M/I	M1	M-2	Yes
22-140-22	6.9	Industrial	BP	M/I	M1	M-2	Yes
22-140-25	3.03	Industrial	BP	M/I	M1	M-2	Yes
22-140-30	7.53	Vacant	BP	OS	RA-1.5	OS	No
22-140-35	36.63	Vacant	UED	M/I	RA-1.5	M-1	No
22-140-36	2.8	Mini Storage	BP	M/I	M1	M-2	Yes
22-140-38	2.2	Veterinary Hospital	BP	M/I	M1	M-2	Yes
22-140-41	2.5	Dismantling Yard	C	M/I	BP	M-2	Yes
22-140-43	2.6	Landscape Material	C	M/I	BP	M-2	Yes
22-140-47	0.7	Plumbing Supply	BP	M/I	M1	M-1	Yes
22-140-48	1.3	Plumbing Supply	BP	M/I	M1	M-1	Yes
22-140-50	2.2	Dog Kennel	BP	M/I	M1	M-2	Yes
22-140-51	0.04	Wireless Tower	BP	M/I	M1	M-2	Yes
22-150-03	0.2	Vacant	BP	M/I	M1	M-1	Yes
22-150-04	0.3	Vacant	BP	M/I	M1	M-1	Yes

2.0 PROJECT DESCRIPTION

APN	Size (Acres)	Existing Use	Existing City Land Use Designation	Proposed Land Use Designation	Existing Nevada County Zoning	Proposed City Prezoning	Proposed for Annexation
22-150-08	0.02	Right-of-Way	BP	M/I	M1	M-1	Yes
22-150-09	0.1	Auto Repair	BP	M/I	M1	M-1	Yes
22-150-10	0.5	Single-Family Residential	BP	M/I	M1	M-1	Yes
22-150-11	0.05	Vacant	BP	M/I	M1	M-1	Yes
22-150-15	0.7	Auto Repair/Commercial	BP	M/I	M1	M-1	Yes
22-150-16	0.3	Single-Family Residential	BP	M/I	M1	M-1	Yes
22-150-17	0.4	Vacant	BP	M/I	M1	M-1	Yes
22-150-18	0.4	Single-Family Residential	BP	M/I	M1	M-1	Yes
22-150-21	1.2	Single-Family Residential	BP	M/I	M1	M-1	Yes
22-150-22	3	Single-Family Residential	BP	M/I	M1	M-1	Yes
22-150-23	0.3	Vacant	BP	M/I	M1	M-1	Yes
22-150-26	0.43	Single-Family Residential	C	C	C2	C-2	No
22-150-27	0.54	Single-Family Residential	C	C	C2	C-2	No
22-150-28	0.3	Single-Family Residential/Commercial	BP	M/I	M1	M-1	Yes
22-150-29	0.44	Single-Family Residential	C	C	C2	C-2	No
22-150-30	7.8	Vacant	BP	M/I	M1	M-1	Yes
22-150-32	0.5	Single-Family Residential	BP	M/I	M1	M-1	Yes
22-150-33	0.03	Vacant	BP	M/I	M1	M-1	Yes
22-160-02	8.06	Vacant	UED	Open Space	RA-1.5	OS	No

2.0 PROJECT DESCRIPTION

APN	Size (Acres)	Existing Use	Existing City Land Use Designation	Proposed Land Use Designation	Existing Nevada County Zoning	Proposed City Prezoning	Proposed for Annexation
22-160-03 ¹	7	Vacant	UED	OS/UED	RA-1.4	RE	No
22-160-03 ¹	18.4	Vacant	UED	OS/UED	RA-1.5	OS	No
22-160-04	11.3	Landscape Material	SDA	M/I	BP	M-2	Yes
22-160-05	10	Vacant	UED	M/I	RA-1.5	M-1	No
22-160-06	25.5	Vacant	SDA	M/I	BP	M-2	Yes
22-160-33	8.3	Vacant	SDA	M/I	BP	M-2	Yes
22-200-36	14.6	Vacant	UED	OS	RA-1.5	OS	No
22-200-37	7.3	Vacant	UED	OS	RA-1.5	OS	No
22-230-10	2.3	Vacant	UED	UMD	RA-1.5	R-2	No
22-230-52	11.0	Vacant	UED	UMD/OS	RA-1.5	R-2	No
22-230-52 ¹	27.9	Vacant	UED	UMD/OS	RA-1.5	OS	No
22-230-52 ¹	4.0	Vacant	UED	UMD/OS	RA-1.5	M1	No
22-230-53	5.7	Vacant	UED	OS	RA-1.5	OS	No
22-331-05	11.6	Vacant	SDA	Public	BP	Public	No
22-331-06	2.1	Vacant	SDA	Public	BP	Public	No
22-331-07	0.6	Vacant	SDA	Public	BP	Public	No
22-331-08	0.5	Single-Family Residential	SDA	UED	BP	RE	No
22-331-09	6.0	Vacant	SDA	Public	BP	Public	No
29-350-12	11.4	Vacant	BP	BP	BP	CBP	Yes

Source: City of Grass Valley 2013

Note: 1. Parcels are proposed for multiple land use designations and/or zoning districts.

The City intends to prezone the project area of 416 acres, which is larger than the proposed annexation area of 120 acres.

Annexation: The City will request approval of the annexation from the Nevada County Local Agency Formation Commission (LAFCo). The EIR has been designed to meet the LAFCo requirements for annexation.

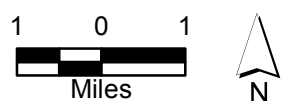
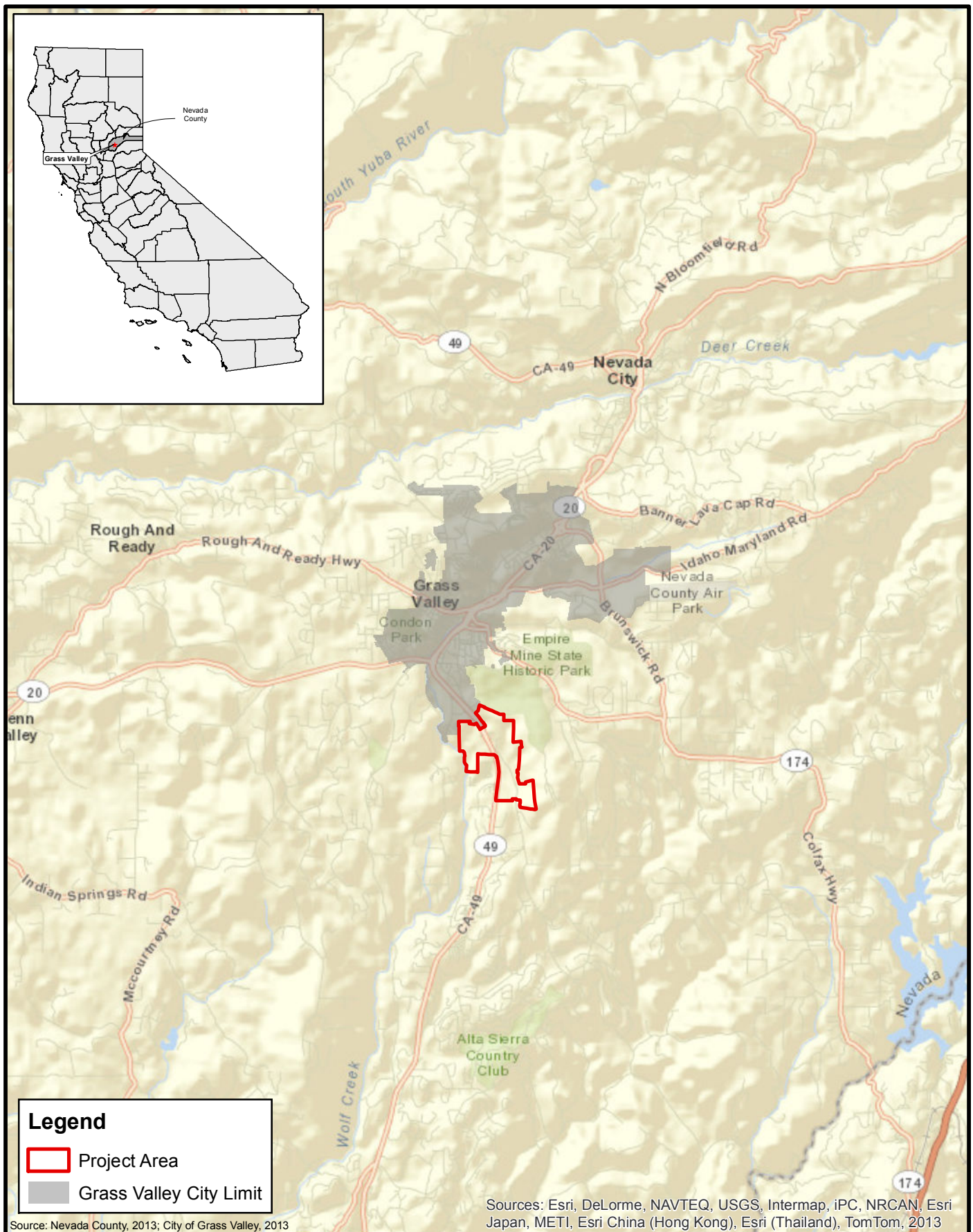


Figure 2.0-1
Regional Vicinity Map

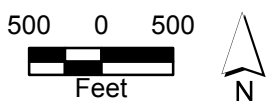
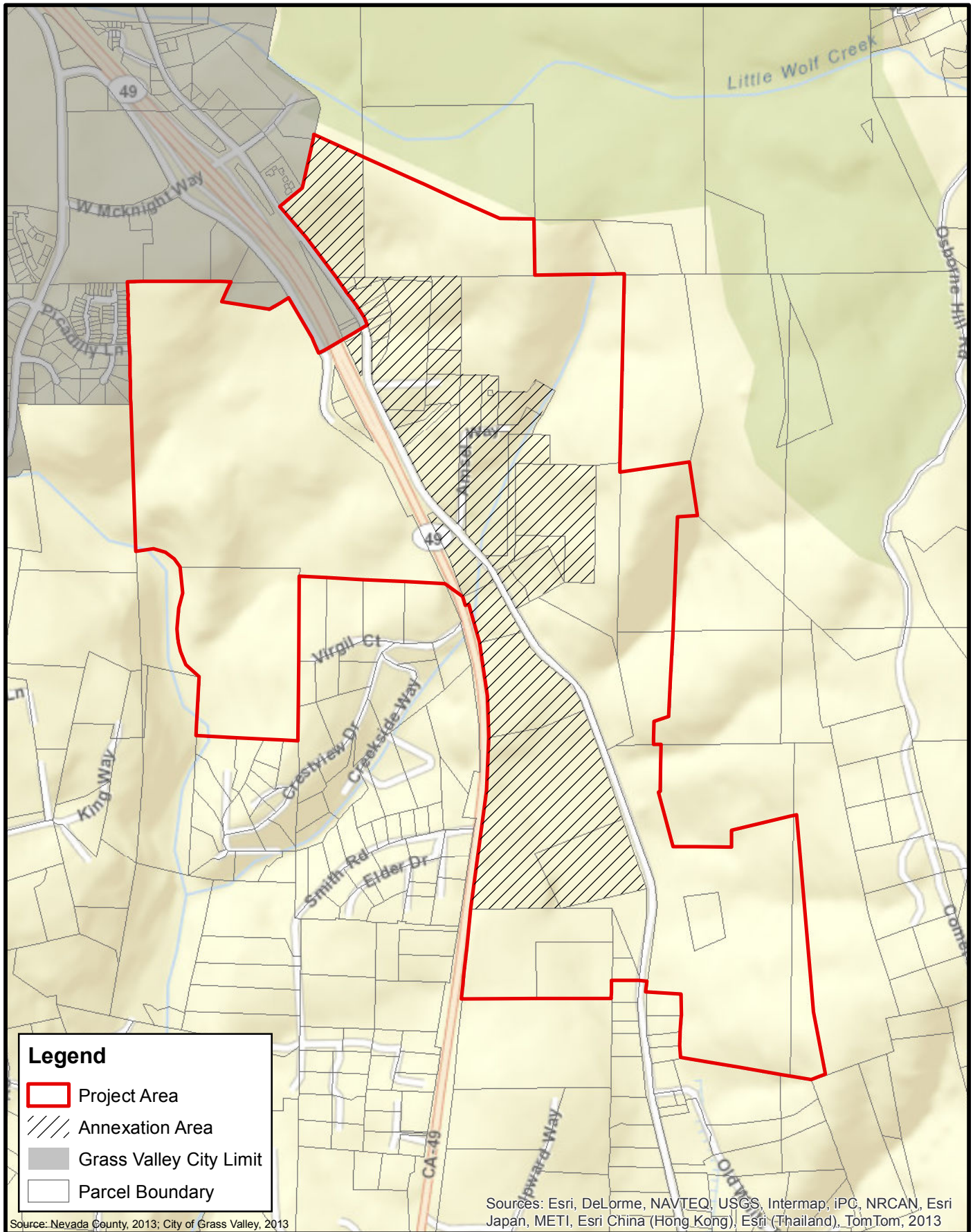
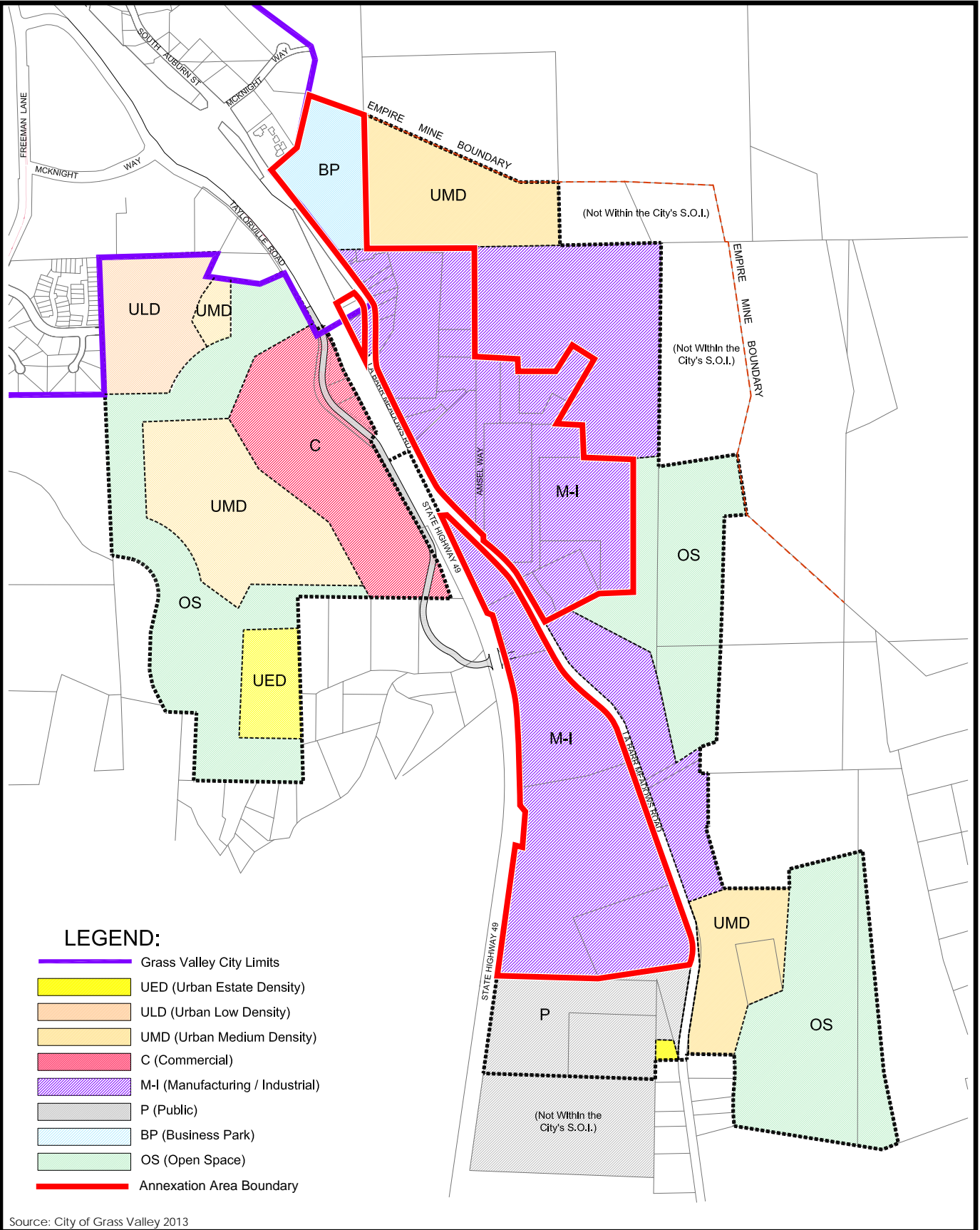


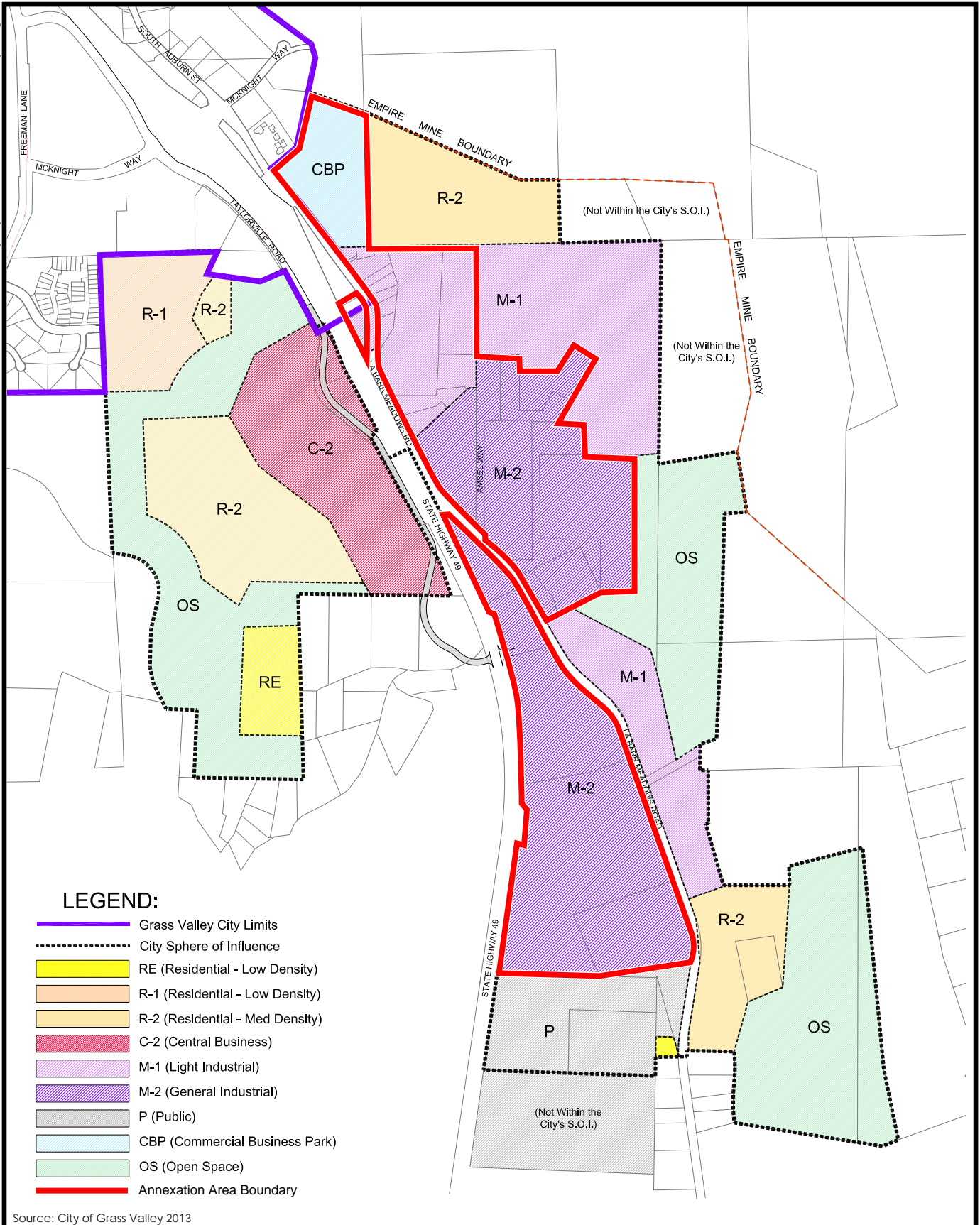
Figure 2.0-2
Project Location



Not to Scale



Figure 2.0-3
Proposed General Plan



Not to Scale



Figure 2.0-4
Proposed Zoning

2.3 EXISTING CONDITIONS

Elevations in the project area range from approximately 2,200 feet to 2,700 feet above sea level. The area has been substantially disturbed from its natural condition by past use for mining production, including the deposit of mining waste rock, and timber processing.

The project area is currently under Nevada County's jurisdiction. The Nevada County General Plan land use designations for the project area are Business Park (BP), Industrial (IND), Residential (RES), Community Commercial (CC), and Urban Medium Density Residential (UMD). **Figure 2.0-5, Existing General Plan Land Use Map**, shows the existing Nevada County General Plan designations. Existing zoning districts are Business Park (BP), Light Industrial (M1), Community Commercial (C2), Medium Density Residential (R2), and Residential Agriculture (RA-1.5). **Figure 2.0-6, Existing Zoning**, shows the existing zoning districts located within the project area.

The Grass Valley General Plan land use designations for the project area are Business Park (BP), Commercial (C), Urban Estate Density (UED), and Special Development Area (SDA). The City uses the SDA land use designation for areas that must be master planned or subject to a specific plan. The City's intent in designating Special Development Areas is to provide mixed-use development generating retail, employment, and housing opportunities.

ANNEXATION AREA

The proposed project includes the annexation of approximately 120 acres generally located along the eastern side of SR 49 within the project area (see **Figure 2.0-2, Project Location**). The annexation area comprises 37 separate parcels, which are designated Business Park, Commercial, and Special Development Area, per the City's 2020 General Plan (see **Table 2.0-1**). Of the 37 parcels, nine are vacant and zoned for industrial or business park uses by Nevada County. Although this area would need to be annexed as part of the proposed project, development of the parcels within the area will not be evaluated in this EIR at the project level because at this time there are no plans for development. Development within the annexation area will be evaluated at the programmatic level in the EIR to disclose the potential for future development.

SURROUNDING LAND USES

The project area has an irregular shape and is bisected by State Route 49. La Barr Meadows Road also bisects much of the portion of the project area that is east of SR 49. The northern boundary is the current City boundary, with commercial uses to the north of the project area. The areas to the west include a scattering of smaller rural and urban residential land uses ranging from 0.08 to 5 acres in size. Wolf Creek is located approximately 2,200 feet west of SR 49 and approximately 200 feet lower in elevation than the lowest portion of the project area. Beyond La Barr Meadows Road, land uses include rural residential and vacant lands. There are existing rural residential uses immediately to the south, and the Alta Sierra Country Club and associated residential uses are located approximately 2 to 3 miles south of the project area. Empire Mine State Park and vacant lands are located to the east of the project area.

2.0 PROJECT DESCRIPTION

This page intentionally left blank.

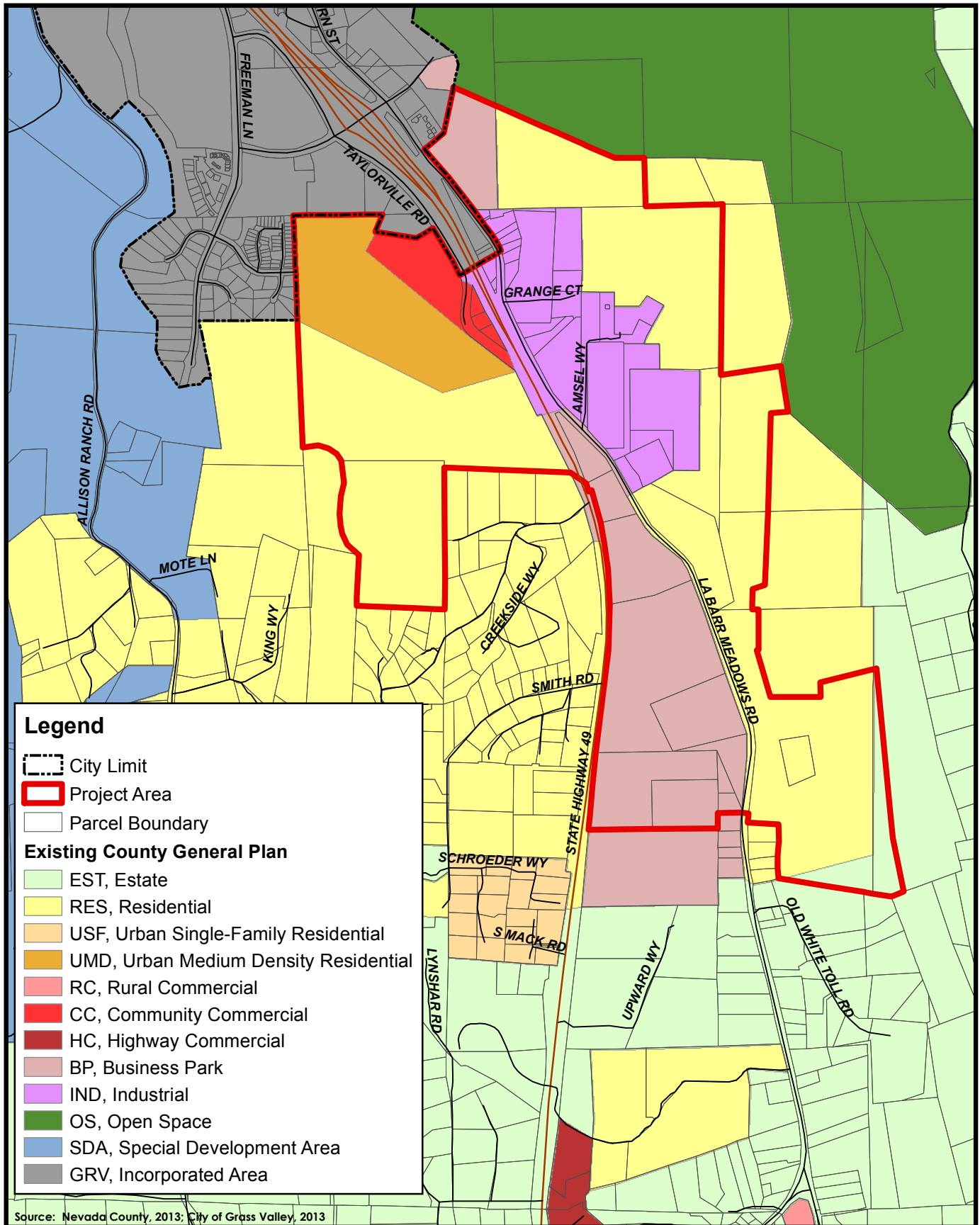


Figure 2.0-5
Existing General Plan Map

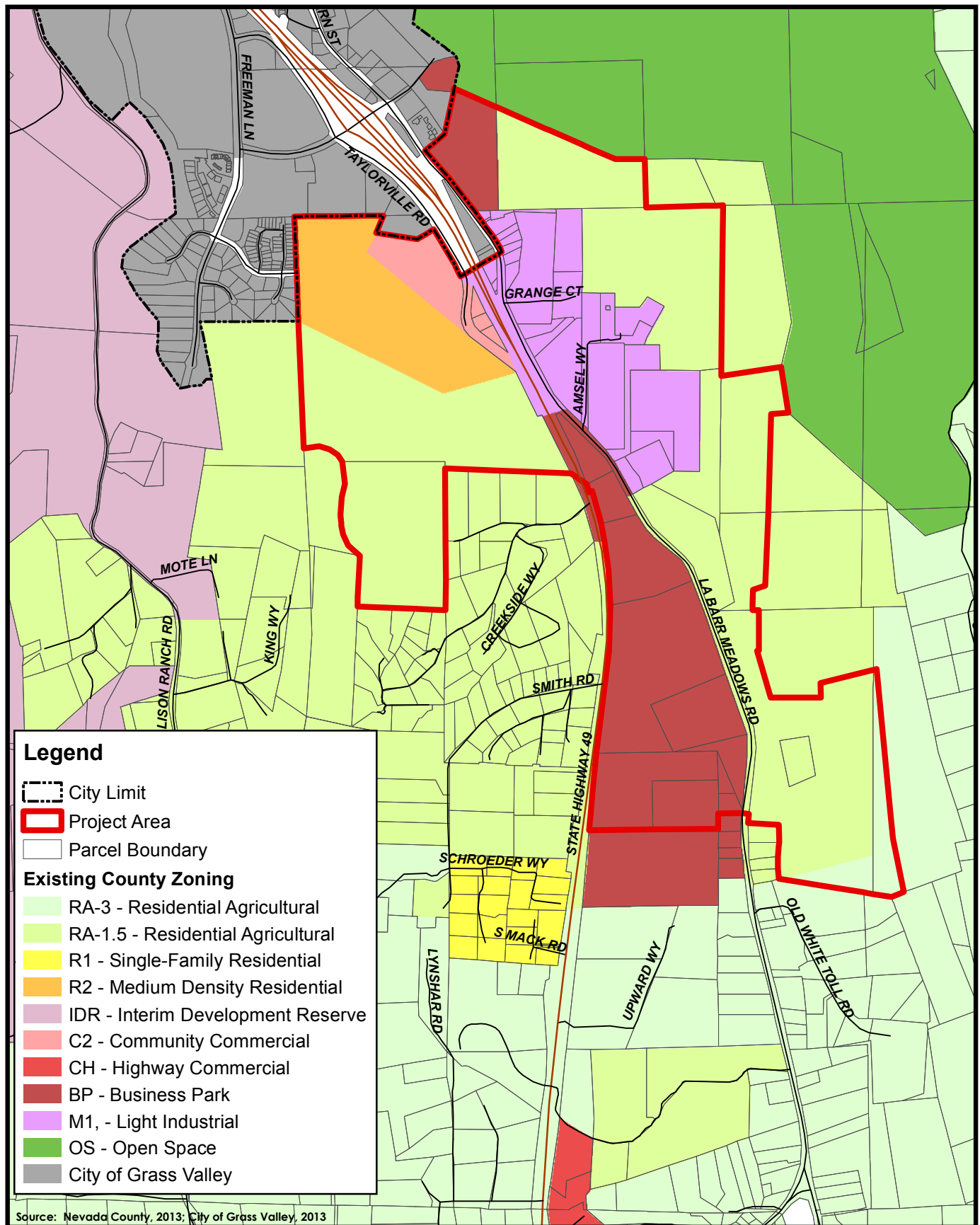


Figure 2.0-6
Existing Zoning

2.4 PROJECT OBJECTIVES

The City has the following objectives for the proposed project:

1. Address the lack of industrial zoned land in the City and county. This will provide opportunities to accommodate growth in the "primary jobs" sector (industrial/manufacturing sector jobs).
2. Address an urban rather than rural land use development form to the south of the City. This allows the City to cluster the existing rural residential designated lands and increase residential densities to allow for an urban form and sustainable development pattern, which will lead to more efficient use of land and cost-effective infrastructure.
3. To protect existing industrial uses from incompatible land uses. Place compatible land uses and buffers next to existing industry.
4. Preserve the hillsides and habitat corridors in open space and incorporate into the overall land use plan.
5. Address the City's retail leakage by providing opportunities for residents to shop local and meet their entire range of retail needs.
6. Create opportunities to provide for a full range of jobs to meet the existing and long-term needs of the community.
7. Annex the 120 acres to better position the City to seek infrastructure grants for the extension of the sewer collection system and assist with road improvements, which are tied to job creation.

2.5 PROJECT CHARACTERISTICS

GENERAL PLAN AMENDMENT

The proposed project includes an amendment to the Grass Valley General Plan, which would change the City land use designations on many of the associated parcels. The General Plan amendment would provide for a range of land uses, including residential, industrial, commercial, manufacturing, and open space land uses. While designations would change, the proposed land use designations would be consistent with the existing land uses on each of the occupied parcels. The proposed land use designations and their descriptions from the General Plan are below.

Manufacturing-Industrial (M/I)

The M/I designation is intended to accommodate a variety of industrial and service commercial uses. Although occupied by freestanding businesses without any overall internal plan or restrictions, M/I districts benefit from some clustering of compatible industrial or service commercial uses. Typical uses in M/I designated areas are light manufacturing, automotive services, warehousing/distribution, and wholesale-retail outlets. The potential for adverse impacts from M/I activities heightens the importance of proper location (relative to the surrounding community) and use of perimeter buffering. Zoning districts compatible with the General Plan M/I designation are Light Industrial (M-1), General Industrial (M-2), and Industrial/Services (I/S).

2.0 PROJECT DESCRIPTION

Business Park (BP)

The Business Park designation replaces the Planned Employment Center (PEC) designation introduced in the 1982 Grass Valley General Plan. Business Park is categorized as one of two mixed-use designations (Special Development Area [SDA] is the other). No changes are made in the substance of the designation, but the Business Park title is both more descriptive and relates better to zoning definitions. The intent of the BP designation is to accommodate a variety of employment-generating land uses in a master-planned, campus-type setting, designed to preserve and enhance the natural environment and to be fully integrated into the larger community. Employment types include a full range of industrial and commercial land uses. The BP designation relates directly to Office Professional (OP) zoning, plus two additional zoning districts added by ordinance in 1997: Corporate Business Park (CBP) and Industrial/Services (I/S). Both zones (CBP and I/S) allow mixed land uses and contain specific performance and design standards.

Commercial (C)

Commercial is a broad category intended to encompass all types of retail commercial and commercial service establishments in any one of a variety of locations. Locations include the Downtown Central Business District, shopping centers, local or neighborhood locations, highway-oriented locations, or concentrations along major streets. Commercial relates to the following zoning classifications: Business (C-1), Central Business (C-2), Downtown Central Business (C-2-A), and Heavy Commercial (C-3).

Urban Estate Density (UED)

The lowest-density residential category in the General Plan, Urban Estate Density, requires one unit or less per gross acre. For properties having access to both public water and sewer utilities, the density standard is a maximum of one unit per gross acre. With one of the two utilities (public water or sewer), one-half unit per acre (2 acres per unit) is the maximum density. With neither public water nor sewer, the maximum is one-third unit per acre (3 acres per unit). The designation is utilized on steeper slopes, in areas already subdivided into estate-sized lots, and in other areas where location, availability of public services, and public policy indicate lower overall residential densities. UED may alternatively be used to encourage either low-density large lots or higher-density clusters, both associated with lower overall population densities. Urban Estate Density is most compatible with the Zoning Ordinance's Residential Estate (RE) district.

Urban Low Density (ULD)

The Urban Low Density designation requires between 1.01 and 4.0 residential units per gross acre. ULD is intended primarily for single-family detached houses, although higher-density single-family patio homes or townhouses could be accommodated, if offset with sufficient open space to maintain the gross density within the indicated range. ULD is most compatible with the following zoning districts: Single Family Residential (R-1) and Two-Family Residential (R-2).

Urban Medium Density (UMD)

The Urban Medium Density designation requires between 4.01 and 8.0 residential units per gross acre. UMD is intended to accommodate single-family detached and attached homes, single-family patio homes, duplexes, and townhouses. Both single-family and multi-family housing types are facilitated by the UMD designation. Urban Medium Density relates directly to the following

zoning categories: Single Family Residential (R-1), Two-Family Residential (R-2), and Medium Density Residential (R-2A).

Public (P)

The Public designation is used to identify areas in public sector ownership/control and used for the purpose of providing noncommercial facilities and services to meet public needs. Ownership and control may be that of general purpose governmental units (city, county, state) or quasi-governmental entities (special districts, school districts, commissions, authorities). Purposes for which Public designated areas are to be used are activities typically undertaken by the owning or controlling entities. Examples are administrative and other public-sector facilities, public parks, natural areas, community centers, fire stations, schools and school properties, hospitals, and public senior or child care facilities. The P designation is most comparable to the Public (P) zoning district.

Open Space (OS)

The Open Space (OS) designation indicates that permanent open space status has been secured. Examples of Open Space designations on the Land Use Plan map are areas set aside through development agreements or previous development project conditions of approval, areas subject to current regulation which effectively precludes development (possibly unique natural areas, wetlands, or high hazard zones), areas which have been dedicated to the City or other governmental entity, or areas placed in permanent open space by virtue of appropriate easement acquisition, CC&Rs, or similar legal provisions. The OS designation may apply to lands owned by either private parties or public agencies, although public open space land might alternatively be designated Public (P) or Park and Recreation (PR).

PREZONING

California Government Code Section 65859 allows the City of Grass Valley to adopt (i.e., prezone) a zone district for land outside of its city limits in anticipation of annexation and development. Under the provisions of the government code, the zone district adopted by the City does not become effective unless and until the land is annexed to the City. Government Code Section 56375(a)(3) requires that property be prezoned as a condition to annexation.

The project would prezone 57 parcels within the annexation area to City of Grass Valley zone districts as shown in **Table 2.0-1** and **Figure 2.0-4, Proposed Prezoning**. The proposed zoning will be consistent with both the amended General Plan land use designations and the existing land uses found within the project area. The proposed zoning districts and descriptions from the Grass Valley Development Code are listed below. The descriptions also provide the development assumptions used in the EIR. Each zone has a list of specified uses and design standards that are compatible with the General Plan, as characterized in the Grass Valley Development Code.

Light Industrial (M-1)

The M-1 zone is applied to areas appropriate for a range of light industrial uses. The M-1 zone implements and is consistent with the Manufacturing-Industrial designation of the General Plan. The proposed project assumes a floor area ratio (FAR) of 0.15 for areas zoned M-1.

General Industrial (M-2)

The M-2 zone is applied to areas appropriate for a range of heavy industrial activities, including manufacturing, assembly and processing, the storage and distribution of raw materials,

2.0 PROJECT DESCRIPTION

aggregate plants, and related industrial uses that are generally compatible with and require locations removed from residential and visitor-serving uses. The M-2 zone implements and is consistent with the Manufacturing-Industrial designation of the General Plan. The proposed project assumes a FAR of 0.15 for areas zoned M-2.

Central Business District Zone (C-2)

The C-2 zone is applied to areas of the downtown not covered by the TC (Town Core) zone in Chapter 17.21 (Traditional Community Development Zones), where existing auto-oriented development is expected to be maintained. The C-2 zone implements and is consistent with the Commercial land use designation of the General Plan. The proposed project assumes a FAR of 0.25 for areas zoned C-2.

Corporate Business Park Zone (CBP)

The CBP zone is applied to areas of the City appropriate for employment with a "campus"-type character, which includes landscaped open space between buildings, screened service areas, uniform sign and street lighting standards, and maintenance of a landscape theme throughout. Existing uses that become nonconforming when the zone is established may remain but are expected to eventually phase into conforming uses. This zone will provide opportunities for corporate administrative offices and medium-size research and development firms to locate in Grass Valley within a high quality development. Land uses in the zone should be compatible with and buffered from adjacent residential uses. High standards of appearance and design will be required and maintained with restrictions on outdoor storage and activities with obnoxious characteristics. The CBP zone implements and is consistent with the Office and Professional and Business Park designations of the General Plan. The proposed project assumes a FAR of 0.25 for areas zoned CBP.

Residential Estate (RE)

The RE zone is applied to areas of the City that are appropriate for single dwellings, but where infrastructure limitations and/or environmental constraints limit the ability for development to achieve urban densities. This zone is also used to facilitate annexation to the City. The RE zone is consistent with and implements the Urban Estate Density (UED) designation of the General Plan. The proposed project assumes a density of approximately 1 dwelling unit per acre for areas zoned RE.

Single-Family Residential (R-1)

The R-1 zone is applied to areas of the City that are appropriate for neighborhoods of single dwellings on standard urban lots, surrounding the more densely developed City core. The R-1 zone is consistent with and implements the Urban Low Density (ULD) designation of the General Plan. The proposed project assumes a density of 4 dwelling units per acre in areas zoned R-1.

Two-Family Residential (R-2)

The R-2 zone is applied to areas of the City that are appropriate for a mixture of both single and two-family dwellings. The R-2 zone is consistent with and implements the Urban Low Density (ULD) and Urban Medium Density (UMD) designations of the General Plan. The proposed project assumes a density of 8 dwelling units per acre in areas zoned R-2.

Public (P)

The P zone is applied to the sites of existing and proposed federal, state, and local government uses and nonprofit community service uses. The P zone implements and is consistent with the Public,

Institutional, Non-Governmental, School, and Utilities land use designations of the General Plan. Development standards within the P zone are determined by the City of a case-by-case basis. Based on the assumptions in the Former Bear River Mill Site Rezone/General Plan Amendment Mitigated Negative Declaration (SCH# 2012042034) prepared for the parcels by Nevada County, it is assumed that the parcels zoned P would be developed as a Nevada County corporation yard.

Open Space (OS)

The OS zone is applied to properties that are largely unimproved and used for the preservation of natural resources and habitats, passive outdoor recreation, scenic resources, and/or for the protection of public health and safety (e.g., preservation of floodplains). Allowable uses are limited to those that support maintenance and/or recreational uses. The OS zone implements and is consistent with the Parks and Recreation land use designation of the General Plan.

As mentioned previously, the prezone will not affect the existing Nevada County zoning for the parcels, as the City of Grass Valley zone districts will only take effect once the annexation process has been completed for the property. Based on this, the proposed zone districts on parcels located outside of the annexation area will not go into effect until such time that they are annexed into the City. Any possible timing for a future annexation is unknown at this time.

ANNEXATION AREA

The proposed project would annex 37 parcels totaling approximately 120 acres, as mapped in **Figure 2.0-2, Project Location**. Areas in the project area, but outside of the annexation area, would be prezoned by the City for possible future annexation, but would remain within the jurisdiction of Nevada County. As mentioned previously, Nevada County zoning districts would remain in place in the areas outside of the annexation area, and prezoning would not be effective until those areas are annexed into the City.

DEVELOPMENT ASSUMPTIONS

The proposed project does not directly propose any development. However, by prezoning and modifying existing land use designations, the City is providing for future development that could happen. In addition, annexation of lands that are currently within Nevada County's jurisdiction would result in the need for the City to provide services to those areas, rather than Nevada County.

To determine the possible future impacts that could happen if development were to occur within the project area, development assumptions were developed by the City using the maximum possible development potential of the parcels as described in the Grass Valley Development Code and the General Plan land use designations. For nonresidential parcels, the City made assumptions for floor area ratios based on the intensity of similar development in Grass Valley and the surrounding areas and the presence of site constraints such as steep slopes. The City assumes that the maximum possible FAR would be 0.15 for industrial-zoned properties and 0.25 for commercial-zoned sites.

As there are only nine vacant parcels located in the project area, most of the parcels are currently occupied with existing development. However, not all occupied parcels are developed to their maximum development potential, so the analysis assumes that these parcels could be developed to a higher intensity or density in the future as a secondary result of the proposed project. It should be noted that the analysis in this EIR assumes that all parcels within the project area will be developed to their maximum development potential and does not take into account parcels that are already partially developed. Therefore, the development

2.0 PROJECT DESCRIPTION

capacity assumptions presented in this EIR represent a worst-case scenario. The City recognizes that actual buildout of the parcels is likely to be less intense than what is analyzed in this EIR. **Table 2.0-2** provides the development assumptions developed by the City and used in this analysis.

**TABLE 2.0-2
DEVELOPMENT ASSUMPTIONS**

Proposed City Pre-Zoning	Total Acres	Potential Dwelling Units	Potential Nonresidential Square Footage
Proposed for Annexation			
CBP	11.4	–	124,146
M-1	19.6	–	128,066
M-2	88.2	–	576,103
<i>Total to Be Annexed</i>	<i>119.2</i>		<i>828,315</i>
Not Proposed for Annexation			
C-2	27.7	–	301,762
M-1	50.63		330,816
OS	117	0	–
Public	20.3	–	–
R-1	16.4	66	–
R-2	57.6	461	–
RE	7.5	7	–
<i>Total Not to Be Annexed</i>	<i>297.1</i>	<i>534</i>	<i>632,578</i>
Total Project Area	416.3	534	1,460,893

UTILITY AND SERVICE PROVIDERS

Annexation of lands within the project area would result in changes to some of the utility providers, which could potentially result in the need for new or expanded infrastructure to serve the project area. While some service providers would change upon annexation, some would remain as they are. For example, the Nevada Irrigation District (NID) would continue to provide water to users in the project area. Similarly, the service providers for electricity, natural gas, telephone, cable, schools, and solid waste collection and disposal services would remain as they are currently.

Currently, the project area is served by the Nevada County Sheriff's Department for law enforcement services and by the Nevada County Consolidated Fire District for fire protection services. Upon annexation, responsibility for these services would be shifted to the Grass Valley Police Department and the Grass Valley Fire Department. See Section 3.10, Public Services and Utilities, for an analysis of whether additional staffing or infrastructure would be needed to serve annexed areas within the project area.

Developed uses within the project area are currently served by individual septic systems for wastewater disposal. Upon annexation and extension of wastewater collection systems to the

project area, those developed lands could connect to the City's wastewater system, if needed. Conversion from the use of individual on-site septic systems to connection to the City's wastewater system would require the future development of wastewater infrastructure within the project area. Section 3.10, Public Services and Utilities, addresses the potential impacts associated with the development of such infrastructure, as well as analyzing whether serving the project area for other services and utilities would result in the need for additional staffing and additional or expanded infrastructure.

FUTURE POTENTIAL CRESTVIEW DRIVE INTERSECTION AND REALIGNMENT

Crestview Drive is located west of State Route 49, approximately at the center of the western edge of the eastern portion of the project area. The two-lane local road provides access to residential uses west of SR 49, but not for areas in the eastern portion of the project area. It is anticipated that if the western portion of the project area were to be developed, the intersection of Crestview Drive and SR 49 would need to be improved and realigned to provide access to development west of SR 49. It is not a project component, but because the need for such an improvement would be triggered by future development in the western portion of the project area, it is considered in the analysis at a programmatic level. The site of the proposed realignment has been disturbed to the east of SR 49. To the west of SR 49, the area for the intersection is forested and screens the rest of the project area from the highway.

2.6 REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

The City of Grass Valley is the lead agency for the proposed project. The project will require the approval of a number of entitlements granted by the City of Grass Valley as well as by other agencies. The entitlements that are necessary for approval of the project and related improvements are listed below.

City of Grass Valley approvals include the following discretionary entitlements:

- General Plan amendment to include a range of land use designations, including Manufacturing-Industrial (M/I), Commercial (C), Business Park (BP), Open Space (OS), Urban Estate Density (UED), Urban Medium Density (UMD), Urban Low Density (ULD), and Public (P);
- Annexation request to the Local Agency Formation Commission (LAFCo) for the approximately 120-acre annexation area to the City of Grass Valley;
- Prezone (required as part of the annexation process) for the entire project area to a range of zones, including Light Industrial (M-1), General Industrial (M-2), Corporate Business Park (CBP), Central Business District (C-2), Open Space (OS), Public (P), Single Family Residential (R-1), Two-Family Residential (R-2), and Residential Estate (RE).

This EIR will be used as the primary environmental document to evaluate planning and permitting actions associated with the project for the following agencies:

- LAFCo approval of the proposed annexations;
- California Department of Transportation and Nevada County Department of Transportation approval of an encroachment permit for improvements along State Route 49;

2.0 PROJECT DESCRIPTION

- Nevada County approval of an encroachment permit for construction within and realignment of Crestview Drive;
- US Army Corps of Engineers approval of an Individual Permit and Clean Water Act Section 404 Permit;
- California Department of Fish and Wildlife approval of a Section 1600 Streambed Alteration Agreement;
- Department of Toxic Substances (DTSC) approval of Mine Waste Rock Clean-Up (SPI & CPI);
- Northern Sierra Air Quality Management District approval of Authority to Construct and Dust Management Plan;
- State Water Quality Control Board approval of stormwater pollution prevention plan.

REFERENCES

City of Grass Valley. 1999. *City of Grass Valley 2020 General Plan*.

———. 2007. *City of Grass Valley Development Code*. Adopted March 6, 2007.

———. 2013. Spreadsheet showing existing and proposed General Plan Designations and Zoning. Provided to PMC.

Nevada County. 2008. *Nevada County General Plan*. Adopted 1996, amended 2008 (Safety) and 2010 (Circulation/Housing).

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

The following is an introduction to the environmental analysis of the project and the general assumptions used in the analysis. The reader is referred to the individual technical sections of the EIR regarding specific assumptions, methodology, and significance criteria used in the analysis for particular issues under those topics.

3.0.1 FORMAT OF ISSUE SECTIONS

Sections in this chapter describe, for each environmental issue area, (1) the environmental setting as it relates to the specific issue; (2) the regulatory framework for the issue as applicable to the project; (3) significance criteria and the methodology used to assess impacts; and (4) an evaluation of project-specific and cumulative impacts, identification of mitigation measures, and a determination of the level of significance after mitigation measures are implemented. Each section is organized into six parts: an introductory paragraph; Existing Setting; Regulatory Framework; Impacts and Mitigation Measures; Cumulative Setting, Impacts, and Mitigation Measures; and References.

The **Existing Setting** subsection describes the existing conditions pertaining to the issue at the regional, local, and project site levels, as appropriate.

The **Regulatory Framework** identifies plans, policies, laws, and regulations at the federal, state, and local levels that are applicable to the particular issue.

The **Impacts and Mitigation Measures** subsection begins with a description of the standards of significance used to evaluate project impacts, followed by a description of the methodology used to assess impacts. Next are the individual impact statements, which include explanatory text and technical information necessary to formulate a conclusion. This is followed by a discussion of potential project-related impacts. Where necessary, each impact discussed is followed by a description of the proposed mitigation and a statement of the level of impact following mitigation.

The **Cumulative Setting, Impacts, and Mitigation Measures** subsection describes the cumulative setting appropriate to that subject area. For example, some air quality impacts are of a regional nature and the cumulative setting includes the entire air basin, while stormwater impacts would be specific to the local drainage basin. Next are the individual impact statements, which include explanatory text and technical information necessary to formulate a conclusion. Following is a discussion of potential cumulative impacts. Where necessary, each cumulative impact is evaluated and the project's contribution to that cumulative impact is identified, followed by a description of the proposed mitigation and a statement of the level of impact following mitigation.

The **References** subsection lists the documents, personal communications, and other sources of information cited or otherwise used in the preparation of the section.

3.0.2 DETERMINING LEVEL OF SIGNIFICANCE

Determining the severity of project impacts is fundamental to achieving the objectives of the California Environmental Quality Act (CEQA). CEQA Guidelines Section 15091 requires that decision-makers make findings that significant impacts identified in the Final EIR have been mitigated as completely as feasible. If the EIR identifies any significant unmitigated impacts, CEQA Section 15093 requires decision-makers to adopt a Statement of Overriding Considerations explaining why the benefits of the project outweigh the adverse environmental consequences identified by the EIR.

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

The level of significance for each impact examined in this EIR was determined by considering the predicted magnitude of the impact against "significance criteria." Significance criteria, which are identified in each technical section, are a set of criteria used by the lead agency to determine at what level, or "threshold," an impact would be considered significant. Thresholds were developed using the following:

- CEQA Guidelines
- Goals, policies, and standards contained in the City of Grass Valley General Plan and ordinances
- Regulatory performance standards of county, state, and federal governmental agencies
- Policies and standards of special districts
- Factual or scientific information generally available or produced by studies
- Consultation with recognized experts on particular environmental issues
- Generally accepted planning practices

Five levels of impact significance are recognized by this EIR:

- **No Impact.** This level of significance is used when the project would not result in a change to environmental conditions.
- **Less than significant** impacts would not cause a substantial change in the environment or are not disruptive enough to require mitigation.
- **Potentially significant** impacts may cause a significant effect on the environment, but information is lacking regarding the extent of the impact. This designation may be applied to impacts for which information is incomplete or unavailable, or to impacts that are qualitative in nature and cannot be readily quantified. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact. Mitigation measures are identified to reduce potential impacts to a level that is less than significant.
- **Significant** impacts would cause a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of the project effects using specified significance criteria. Mitigation measures are identified to reduce impacts to a level that is less than significant.
- **Significant and unavoidable** impacts are significant adverse impacts that cannot be avoided or mitigated to a less than significant level. This designation can be given to impacts for which there is no feasible mitigation or to impacts for which mitigation measures can be applied but are not sufficient to reduce impacts to a level that is less than significant.

3.0.3 IMPACT AND MITIGATION FORMAT

The standard format used to present the evaluation of impacts is as follows:

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

Impact 3.0.1 The impact number identifies the section of the EIR and the sequential order of the impact in that section. Following the impact number is the impact statement, which identifies the potential impact.

The identified impact is then discussed in more detail. At the end of the discussion, a level of significance is assigned to the impact. If the impact is identified as **less than significant**, there will be no further evaluation of the impact. If the impact is identified as **potentially significant** or **significant**, proposed mitigation measures will follow. **Significant and unavoidable** impacts may or may not have proposed mitigation measures.

Mitigation Measures

In some cases, following the impact discussion, reference is made to state and federal regulations and agency policies that would fully or partially mitigate the impact. Also, policies and programs from applicable local land use plans that partially or fully mitigate the impact may be cited. These policies and regulations shall be considered as part of the package of recommended mitigation measures.

Mitigation measures are described in the format presented below:

MM 3.0.1a Mitigation is identified that would reduce the impact to the lowest degree possible. The mitigation number links the mitigation to the impact; the letter identifies the sequential order of the mitigation for that impact.

Timing/Implementation: Gives the time when the mitigation measure is to be implemented (e.g., upon submission of final map, prior to issuance of building permit).

Enforcement/Monitoring: Identifies the department or agency with the responsibility for implementing the mitigation measure.

The discussion concludes by describing how the mitigation measures presented above will reduce the impact. It then identifies the resulting level of significance of the impact following mitigation.

3.0.4 ANALYSIS ASSUMPTIONS GENERALLY USED TO EVALUATE THE IMPACTS OF THE PROJECT

BASLINE ENVIRONMENTAL CONDITIONS ASSUMED IN THE EIR

Section 15125(a) of the CEQA Guidelines requires that an EIR include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the Notice of Preparation (NOP) is published. The CEQA Guidelines also specify that the description of the physical environmental conditions is to serve as the baseline physical conditions by which a lead agency determines whether impacts of a project are considered significant.

The environmental setting conditions of the project area and the surrounding area are described in detail in the technical sections of the EIR (see Sections 3.1 through 3.13). When appropriate, the setting within the annexation area may be described separately. In general, these setting discussions describe the setting conditions of the project area and the surrounding area as they existed when the NOP for the project was released in May 2013.

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

PROJECT CONSTRUCTION EFFECTS

The project is an annexation of a 120-acre area within the City's existing Sphere of Influence (SOI), rezoning of the 416-acre project area, and a General Plan Amendment to change land use designations. The project would result in some changes to existing land uses, but does not include any development proposals. However, the City acknowledges that future development may occur within the annexation area and in areas that may be annexed in the future as a result of the proposed land use changes.

While the project does not include any construction, because it could ultimately result in future construction, the EIR analyzes the potential for development within the SOI area at a programmatic level. Section 2.0, Project Description, provides a description of the possible improvements associated with future construction activities. The environmental analysis addresses potential significant impacts from the effects of construction within the project area to the greatest extent possible based on maximum possible development capacity, including possible effects associated with required infrastructure and roadway improvements required to serve future development within the project area.

PROJECT BUILDOUT ASSUMPTIONS

As stated above, the project does not include development, but could lead to changes in land use designation and development of portions of the project area later. Section 2.0, Project Description, provides future buildout assumptions based on the maximum development potential of the proposed land use designations and zoning districts. All but nine of the parcels located in the annexation area are currently at least partially developed. Some parcels are fully developed and cannot accommodate additional development. It should be noted that the building assumptions are a worst-case scenario, and it is unlikely that all of the sites within the project area would develop to their maximum development potential. All development that could be proposed within the project area would require additional project-specific environmental analysis when specific details of the development are available.

The analysis assumes that future development of the entire project area could result in the construction of as many as 534 new residential units and 1,460,893 square feet of nonresidential uses.

Because there is currently no development proposed within the project area, it is not known when future development would occur, if at all. Potential impacts will be analyzed as developments are proposed.

APPROACH TO THE CUMULATIVE IMPACT ANALYSIS

The following EIR analysis includes evaluation of whether the overall impacts of the proposed project would be cumulatively significant. Additionally, it determines if the proposed project would cause a "cumulatively considerable" contribution to any such cumulatively significant impacts (CEQA Guidelines Sections 15130[a]–[b], 15355[b], 15064[h], 15065[c]; *Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal.App.4th 98, 120).

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the proposed project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past

projects, the effects of other current projects, and the effects of probable future projects (as defined by Section 15130). As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impact occurs from:

...the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Definition of Cumulative Setting

CEQA Guidelines Section 15130 requires that EIRs include an analysis of the cumulative impacts of a project when the project's effect is considered cumulatively considerable. In general, the cumulative setting conditions considered in this EIR are based on the existing land use plans provided by the City of Grass Valley (General Plan and Zoning Ordinance) and Nevada County (via the Nevada County General Plan and Zoning Ordinance).

The cumulative setting for the project generally encompasses Grass Valley and the City's SOI as identified in the City of Grass Valley General Plan. The cumulative setting varies for each environmental issue area depending on the resources affected and any relevant boundaries, such as the Mountain Counties Air Basin for air quality resources or the Nevada Irrigation District boundaries for water supply services. Each technical section of the EIR includes a description of the geographic extent of the cumulative setting for that resource based on the characteristics of the environmental issues under consideration as set forth in Section 15130(b) of the CEQA Guidelines.

In addition to any known projects and local land use plans, the cumulative setting conditions consider development assumptions provided in the City of Grass Valley General Plan and General Plan EIR.

Consideration of Cumulative Impacts

Each technical section in the EIR considers whether the project's effect on anticipated cumulative setting conditions is cumulatively considerable (i.e., a significant effect). The determination of whether the project's impact on cumulative conditions is considerable is based on applicable public agency standards, consultation with public agencies and/or expert opinion. Section 5.0, Other CEQA Considerations, provides a summary of the cumulative impacts associated with the maximum possible development of the project area.

Traffic Mitigation Measures

Impact fees are collected to pay for specific improvements to the transportation system within the City and its Sphere of Influence. The fees represent a project's proportionate share of the cost of the improvements and are typically collected at building permit issuance or time of occupancy. As traffic from existing residents must be taken into account, the fees seldom pay for the entire improvement. In addition, some of the improvements require permission from other agencies such as Caltrans or Nevada County. Finally, as the fees are typically collected before the improvement(s) can be constructed, it is possible that the impact at the location of the improvement will worsen until sufficient funds are available for the improvement. As a result, even though the extent of improvement is known, the lack of funding or other agency permission will result in the impact being identified as significant and unavoidable in the EIR. It is

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

the intent of the City to allow projects consistent with this EIR to move forward with the application of project-specific mitigation, using the significant and unavoidable findings and overriding considerations in this EIR without the need to complete another EIR or make additional findings. The expectation of the City is that any subsequent traffic impact analysis will focus on the project-specific impacts and responsibility for mitigation at study area locations.

3.1 AESTHETICS AND VISUAL RESOURCES

3.1 AESTHETICS AND VISUAL RESOURCES

This section describes the existing visual resources and the landscape characteristics of the project area and the surrounding area, and discusses the impacts associated with the proposed project. The analysis focuses on the anticipated alteration of the landscape characteristics and visual resources in the vicinity of the proposed project and the introduction of new light and glare sources from the project. Visual impacts were evaluated using a combination of site reconnaissance, aerial photographs, and review of relevant City of Grass Valley policies.

3.1.1 EXISTING SETTING

AESTHETICS/VISUAL CHARACTERISTICS OF THE AREA

Grass Valley is nestled in the foothills of the Sierra Nevada about 52 miles northeast of Sacramento, California. This region of the western Sierra Nevada foothills separates the low-lying Sacramento Valley from the Sierra Nevada and is characterized by rolling forested hills incised by steep canyons. The City is located at approximately 2,200 to 2,800 feet above mean sea level in the central/western portion of Nevada County. Wolf Creek runs in an east–west direction through the City and continues south to its confluence with the Bear River. Wolf Creek abuts the southwestern portion of the project area and is located approximately 2,200 feet west of State Route (SR) 49. La Barr Meadows Road and SR 49 split the project area and run in a north–south direction. Osborne Hill sits to the east of the project area and represents a pine-covered ridgeline. Rural residential uses are located south of the project area. Single-family residential uses (the Gazebos and Carriage House developments) and some rural residential uses are to the west. Commercial and industrial uses are located to the north of the project area. Portions of the project site are visible from SR 49 and La Barr Meadows Road and from adjacent development. However, many views are also blocked, or partially blocked, by existing topography and vegetation.

AESTHETICS/VISUAL CHARACTERISTICS OF THE PROJECT AREA

The topography of the project area varies from gently sloping to slopes greater than 30 percent. Elevations across the site range from 2,200 to 2,700 feet. Areas with the steepest slopes, primarily on the eastern and western edges of the project area, are proposed to be preserved as open space areas. Vegetation consists of grasses, shrubs, pines, cedars, and oaks denoting a mosaic of foothill pine and chaparral habitats. Some riparian environments occur along Wolf Creek and the other ephemeral streams.

All but nine of the 37 parcels, or 46.5 acres, in the proposed 120-acre annexation area are already developed to some extent with industrial, commercial, or residential uses (see **Table 2.0-1** in Section 2.0, Project Description). The former Bear River Mill site, located in the center of the annexation area, contains the largest piece of undeveloped land in the annexation area and is characterized by a heavy level of past disturbance. Past activities supported industrial uses, including historic mining and lumber milling operations. These previous activities resulted in the alteration of site topography and hydrology, including the creation of three ponds and the replacement of natural drainage features with a series of ditches, excavations, and culverts. Some portions of structures still exist on the site, including large concrete slabs, building foundations, and gravel and asphalt pads. Other existing on-site visible features include Pacific Gas and Electric Company overhead transmission lines fronting La Barr Meadows Road, unimproved dirt roads, and ponds.

In the western portion of the project area west of SR 49, the eastern end of the 121-acre Berriman Ranch property includes several farm-related structures and remnants of a fruit orchard and other farming activities. The remainder of the ranch includes rolling topography and foothill

3.1 AESTHETICS AND VISUAL RESOURCES

pine habitat, with several riparian corridors and some wetlands. There are three residential homes located between Taylorville Road and SR 49.

Nighttime Lighting Conditions

Current lighting conditions affecting Grass Valley are mostly related to development in the City (e.g., shopping centers, streetlights, and residences), industrial facilities, and planned complexes designed to meet industrial needs (e.g., Whispering Pines Business Park), vehicular traffic, and SR 49.

At nighttime, Grass Valley has areas with distinct lighting conditions. The Central Business District generally has the highest ambient light levels, with outlying areas of the City having lower ambient light levels. Because most of the project area is currently undeveloped, nighttime lighting is generally limited. Lights associated with the existing homes and businesses in the project area and adjacent residential and commercial development contribute to nighttime lighting. The concrete/asphalt plant (Vulcan) in the area proposed for annexation operates at night during certain times of the year. This operation requires safety and security lighting that also contributes to nighttime lighting.

3.1.2 REGULATORY FRAMEWORK

STATE

State Scenic Highway Systems

The California Department of Transportation (Caltrans) administers the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the highways. State Route 49 is recognized as being eligible for designation, but no portion of the highway in Nevada County is officially designated as a state scenic highway, including the portion of SR 49 adjacent to the project area. Any highway that is a part of the State Scenic Highways Master Plan is eligible for official designation as an official scenic highway and is to be publicized on official maps.

LOCAL

City of Grass Valley General Plan

The City's General Plan includes several objectives related to the protection of major views in the Planning Area, including hillsides, ridgelines, and forested areas. The 2020 General Plan refers to past general plans and verifies that the City has implemented some aspects of the scenic highway/entryway and hillside/ridgeline provisions of those past plans through zoning and design guidelines. However, the 2020 General Plan policies focus on further implementing viewshed protection measures. These measures are implemented through the City's Development Code.

The City's Conservation/Open Space Element contains goals, objectives, policies, actions, and strategies applicable to aesthetic and visual resources. This element includes various policies that are intended to provide a balance between development and the natural environment. Furthermore, the City's Community Design Element focuses on protecting the built environment

in addition to the City's natural environment. The following policies of the General Plan would have a mitigating effect with respect to impacts on aesthetic and visual resources:

Objective 2-COCO: Multi-purpose open space lands, accommodating the needs and requirements of open space/conservation, habitat, recreation and aesthetics.

Policy 3-COSP: Encourage clustering, density averaging, and other techniques in larger-scale new development, as means of preserving open space and natural systems.

Policy 4-COSP: Establish standards for inclusion and management of permanent open space in new developments.

Policy 5-COSP: Carefully regulate development on steep slopes.

Policy 6-COSP: Prevent excessive alteration of the natural topography.

Policy 20-CDP: Design all future major public and private development projects to include areas for public gathering and interaction.

Implementation Program 11-CDI: Require shielding or downward direction of lighting and require that illumination be so arranged as to reflect away from adjoining properties.

Policy 6-CDP: Design and construct streetscape at the southern entrance to the community at Highway 49 to enhance the area visually.

Page 5-15 of the Grass Valley General Plan includes an Open Space Opportunity Overlay map. This map identifies important open space corridors and trail opportunities in the City. As it pertains to this project, the map shows an open space corridor along Wolf Creek. The proposed project plans to prezone this area as open space, thereby protecting this resource consistent with the General Plan.

A discussion of the project's consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

City of Grass Valley Development Code

The City of Grass Valley Development Code contains several provisions that address aesthetics. The Development Code establishes specific standards for the following: setbacks (Article 2); parking (Chapter 17.36); landscaping (Chapter 17.34); outdoor lighting (Section 17.30.060); hillside and ridgeline development (Chapter 17.54); creek and riparian resource protection (Chapter 17.50); cultural and historic resource protection (Chapter 17.52); and other features that affect all development. These standards are intended to protect scenic resources and to enhance the aesthetic and visual character of Grass Valley. The Development Code provides for a design review process wherein the final design of the specific projects is reviewed by the Development Review Committee and/or Planning Commission prior to issuance of a building permit or grading permit for the project. This process assures the aesthetic values of the community are met.

3.1 AESTHETICS AND VISUAL RESOURCES

City of Grass Valley Community Design Guidelines

The City's Community Design Guidelines provide design professionals, property owners, developers, and citizens with an understanding of the City's design expectations for new development in the community. The guidelines' central theme is to preserve and enhance Grass Valley's distinct character and quality of life. They include design principles that further implement the goals of the General Plan. The guidelines work in conjunction with the Development Code and apply to commercial, industrial, office, and multi-family projects. Each chapter of the guidelines includes sections with specific goals and principles that address site planning and building placement to protect natural resources such as trees, watercourses, wetlands, open spaces, and topography; grading and hillside development; screening; landscaping; placement of public spaces; architectural design; streetscape design; circulation and parking; exterior lighting; and signage. The Development Review Committee and/or Planning Commission review each development project for consistency with the City's Community Design Guidelines.

3.1.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the City concludes that a project may have significant impacts on aesthetic or visual resources if implementation of the project would result in any of the following:

- 1) Have a substantial adverse effect on scenic vistas.
- 2) Substantially damages scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.
- 3) Substantially degrades the existing visual character or quality of the site and its surroundings.
- 4) Creates a new source of substantial lighting and glare which would adversely affect day or nighttime views in the area.

METHODOLOGY

Analysis of visual impacts is largely subjective by nature because the judgment of the qualities that create an aesthetically pleasing setting will vary from person to person. For the purposes of this analysis, the site and its vicinity have been visited by City staff in order to consider the existing visual character of the site and surrounding area, and to determine the proposed project's visual relationship with this setting.

PROJECT IMPACTS AND MITIGATION MEASURES

Scenic Vistas (Standard of Significance 1)

Impact 3.1.1 Future development within the project area may impact scenic vistas and conflict with adopted visual/aesthetic plans and goals. This impact is considered **less than significant**.

New development in the project area in accordance with the General Plan, if not carefully designed, can impact scenic vistas. However, the City's General Plan Conservation/Open Space and Community Design elements include policies designed to protect the City's aesthetic values. These values are identified as broad goals such as preserving and enhancing the existing community (1-CDG) and recognition and protection of major views, notable buildings, open spaces, hillsides, ridgelines, and forested areas (3-CDO), in addition to the historical look and feel of the downtown area. The General Plan policies and implementation programs include measures to protect viewsheds/view corridors, open spaces, and hillsides. As noted above, the City's Development Code includes several chapters that specifically implement the General Plan policies and provide specific protection of the City's noted aesthetic and visual resources. Finally, the City's Community Design Guidelines provide another layer of review to ensure development projects comply with the City's aesthetic and visual goals and objectives. Even though the City's General Plan does not identify any specific scenic vistas, it does acknowledge that SR 49 is eligible for scenic highway status, and it provides general guidance for development that takes place near broadly listed resources (hillsides, open spaces, watercourses, etc.).

Though specific development is not proposed at this time, the proposed project would allow a range of industrial, commercial, business park, and residential buildings, public parks, private recreation areas, associated roadways, parking areas, and infrastructure to be constructed in the future. Grading and vegetation removal will be required to accommodate this future development. These activities would affect the existing character and vistas of the project area.

The entire project area is within the City's Sphere of Influence and is currently planned for urban development. The proposed project continues to assume the project area will develop for urban purposes, including the development of housing, commercial and business park uses, and industrial uses. The project also assumes the conservation of open space in areas with steep slopes and along Wolf Creek, which would permanently preserve particularly scenic portions of the project area. Future development would primarily occur in areas already containing development and along SR 49 in a manner that would blend with existing development in Grass Valley. The proposed project would simply allow for future development that would extend more developed portions of the City farther south on SR 49. It is also worth noting that a large portion of land within the annexation area consisting of the former Bear River Mills site could be redeveloped in the future, which may improve the visual quality of the project area, as old, abandoned components of the site are replaced by newer structures and uses that meet Grass Valley's design standards.

All future development, after lands are annexed, will be subject to all City design standards, guidelines, and review requirements. These design and development standards reflect and implement the City's visual and aesthetic goals and mitigate the impacts to visual resources. Furthermore, the project proposes to create over 116 acres of Open Space designated land in some of the more scenic areas of the project area. These open space areas are proposed along Wolf Creek and areas containing steeper terrain approaching the Osborne Hill ridgeline. The proposed open space areas further implement several previously stated goals related to scenic vistas. Therefore, the goals, objectives, and policies of the City's General Plan, along with the City's Development Code and Community Design Guidelines, will ensure the project will have a **less than significant** impact on scenic vistas or resources.

Mitigation Measures

None required.

3.1 AESTHETICS AND VISUAL RESOURCES

State Scenic Highways (Standard of Significance 2)

Impact 3.1.2 Future development in the project area would not be visible from a designated state scenic highway and therefore will not have a negative effect on a scenic resource within or near a scenic highway. This impact is considered **less than significant**.

Caltrans administers the California Scenic Highway Program. The entire length of SR 49, from Madera County to Sierra County, is on the eligibility list for a state scenic highway designation; however, only a small section of SR 49 in Sierra County is officially designated. The closest designated state scenic highway (SR 20 from Skillman Flat Campground to east of Lowell Hill Road) is located approximately 15 miles from the project area. The project area is not visible from that segment of SR 20.

Even though SR 49 is not a designated scenic highway, the 2020 General Plan identifies State Routes 49 and 20 as important scenic corridors and entryways into the community. The General Plan's Community Design Policy 6-CDP supports this: "Design and construct streetscape improvements at the south entrance to the community at Highway 49 to enhance the area visually." The project area has been identified by the 2020 General Plan as an area for urban development. The proposed project continues with the General Plan's effort to utilize the project area for urban purposes; however, as noted above, over 116 acres are proposed to be set aside as open space. Although it is not known at this time what type of development, if any, will occur within the project area, future development, once annexed, will be subject to all City design standards, guidelines, and review requirements. The goals, objectives, and policies of the City's General Plan, along with the City's Development Code and Community Design Guidelines, will ensure the project will have a **less than significant** impact on an eligible scenic highway.

Mitigation Measures

None required.

Alteration of Views (Standard of Significance 3)

Impact 3.1.3 Future development associated with the project would alter the existing landscape characteristics of the project site from developed and vacant land to urban development and may degrade the existing visual character of the site. This impact is considered **less than significant**.

Though no development is proposed as part of this project, it could enable future development and construction of industrial, commercial, business park, and residential buildings, public parks, private recreation areas, associated roadways, parking areas, and infrastructure that would alter existing views of the project site and would alter the character of lands currently vacant or developed to some extent to a more urban-type development.

Portions of the project area are developed, and other properties have supported industrial uses in the past, including historic mining and lumber milling activities. Additionally, some of the lands on the west side of SR 49 have supported agricultural activities. These previous activities resulted in the alteration of site topography and hydrology, including the creation of three ponds and the replacement of natural drainage features with a series of ditches, excavations, and culverts. Other existing on-site visible features include Pacific Gas and Electric Company overhead transmission lines fronting La Barr Meadows Road, unimproved dirt roads, and ponds.

Future development would alter the visual characteristics of the project area through grading, vegetation removal, and construction. These actions could alter views of the project site. Land uses to the east consist of large parcels of vacant land on Osborne Hill, and rural and urban residential uses to the west. Commercial land uses are located to the north, and rural residential uses are to the south. However, views of portions of the site, particularly from SR 49, are largely blocked or screened by the area topography and vegetation.

The project proposes to designate over 116 acres of land as open space. This includes areas along Wolf Creek, the steeper slopes along Osborne Hill, and several drainage corridors. Though no development is proposed as part of this project, implementation of the project could enable future development. The City's policies and standards would ensure much of the existing tree canopy along State Route 49 will be preserved as a natural barrier. The City of Grass Valley Preservation and Protection Ordinance, Chapter 12.36 Tree Ordinance, states that tree removal, except for exempt activities, requires a construction-related tree removal permit and a tree protection plan. The City's Community Design Guidelines set a goal of preserving at least 20 percent of the existing trees when land is developed. In most cases over the past ten years, implementation of the City's policies and guidelines have led to a tree preservation rate that exceeds 40 percent of native trees. Furthermore, the City's landscaping requirements (Chapter 17.34) and Community Design Guidelines strongly encourage the use of native and drought-tolerant plants that maintain the region's existing landscape characteristics.

Although the extent of the visual transition and impact from an area that currently has limited development to a more urban form could be substantial, those changes would not necessarily be negative. With urban-type development, the standards for judging aesthetic quality and attractiveness are primarily based on architectural and landscape design concepts rather than on natural or pastoral aesthetic standards. As noted above, the City's General Plan, Development Code, and Community Design Guidelines establish a substantial number of policies and standards that ensure future development includes high quality architectural design, site planning concepts that are sensitive to and preserve key natural features, and landscaping design that protects the character of Grass Valley. The City ensures these measures are included in future projects through the Design Review process, which includes formal review by the Development Review Committee and Planning Commission, both of which are charged with implementing these standards and guidelines.

The City has designated the project area for annexation and for future urban development purposes. In addition, implementation of the community design standards and guidelines would ensure that development occurs consistent with the City's aesthetic standards. The visual impacts resulting from the change in land use character would be **less than significant**.

Mitigation Measures

None required.

Daytime Glare and Nighttime Lighting (Standard of Significance 4)

Impact 3.1.4 Future development of the project area will result in the introduction of new daytime glare and nighttime lighting. This impact is considered **less than significant**.

Future development that could occur in the project area may result in daytime glare and nighttime lighting that could impact existing land uses and those that develop as a result of the project. Future development would include structures, parking lots, streets, and other urban

3.1 AESTHETICS AND VISUAL RESOURCES

facilities that could create daytime glare by reflecting sunlight to vantage points on- and off-site. The extent of this impact would be dependent on the angle of the sun and structure and the type of building material used that could generate a glare effect. Future development of the project area would also introduce new levels of artificial light with nighttime lighting levels typical of urban/suburban development over the current lighting levels. New light sources include, but are not limited to, streetlights, security lights, household lighting, lighting of commercial interiors and exteriors, and vehicular traffic. Stationary light sources have the potential to adversely affect existing and future residents through "spillover" into adjacent properties. Additionally, if not designed properly, new light sources can result in a greater overall level of light at night, thus reducing night sky visibility and affecting the general visual character of the community.

Even though no development is proposed as part of this project, the City's General Plan, Development Code, and Community Design Guidelines include many policies, standards, and guidance to avoid excessive light and glare that could occur if portions of the project area are developed once annexed into the City. Some key tools required to eliminate excessive light and glare include, but are not limited to:

- The City requires one tree for each five parking spaces and 50 percent shade coverage in parking lots.
- The California Green Building Standards Code, which includes steps to reduce light pollution.
- City requirements to ensure all exterior lighting is shielded and directed downward so it does not spill onto adjacent parcels. The City's application process requires all applicants to submit photometric plans to demonstrate compliance with this standard.
- Community Design Guideline requirements to use exterior building materials that do not result in off-site glare.
- Prohibition of internally illuminated signs.
- Requirement that street trees create a canopy over streets.

Future projects must incorporate these standards into their site planning and design review plans. To ensure projects do not create excessive light or glare, the City verifies compliance with the adopted standards through the development review process and through subsequent environmental review of specific projects. Therefore, the visual impacts resulting from light and glare will be **less than significant**.

Mitigation Measures

None required.

3.1.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

Project-specific impacts are addressed in subsection 3.1.3 above. In the cumulative context and for the purpose of this evaluation, the geographical setting for aesthetics and visual resources is the Grass Valley Sphere of Influence (SOI). As development occurs within the City limits and Sphere of Influence, it would result in the construction of new buildings and other related urban improvements that would change the existing site conditions and physical character of the

area. Specifically, new development will require changes to the existing topography and removal of existing trees to accommodate building pads, parking lots, and other urban improvements. This new development will require new lighting, which can contribute to nighttime light pollution. Therefore, future development within the SOI could result in potentially significant impacts on the area's aesthetic and visual resources. However, the City has a significant number of policies, standards, and procedures in place to ensure all development fully mitigates the visual and aesthetic impacts associated with new development and construction.

As described above, the City's General Plan, Development Code, and Community Design Guidelines include policies and specific standards that reflect and address the City's aesthetic and visual values. The intent of these documents is to protect the City's historic architectural character and its overall visual setting. One of the primary land use goals in the General Plan is balancing community growth in a planned, orderly way with respect to the natural and built environment. The City's standards are specifically designed and intended to protect scenic resources and to enhance the aesthetic and visual environment of Grass Valley. The Development Code provides for a design review process wherein the final design of the specific projects is reviewed by the Development Review Committee and/or Planning Commission prior to issuance of a building permit or grading permit for the project. This process assures the aesthetic values, policies, and standards of the community are met.

Cumulative Impacts on Scenic Highways, Vistas, or Resources (Standards of Significance 1, 2, and 3)

Impact 3.1.5 Implementation of the project and future development will contribute to the cumulative conversion of undeveloped land to developed land that would impact scenic resources. This impact would be **less than cumulatively considerable**.

As discussed in Impacts 3.1.1 and 3.1.2, there are no designated scenic highways or designated scenic vistas within the City's SOI. However, the General Plan describes the City's general scenic and visual resources as being its historic and architectural character, general scenic beauty, and small-town, rural character. The General Plan places aesthetic importance on its entryways to and highway corridors through the town. To protect these visual resources, the City's General Plan includes policies, the Development Code includes standards and processes, and the Community Design Guidelines include guidelines to ensure these aesthetic community values are protected as development takes place. In the cumulative context, this project continues to plan for development of the project area. This project proposes to amend the land use designations and includes land uses that further implement the General Plan aesthetic-related policies, specifically designating 116 acres, representing 25 percent of the project area, as open space. The placement of the Open Space land use designation is considered a beneficial impact that will maintain and enhance the overall visual character of the City. Although this project will continue to allow urban development to take place in the City's SOI, the application and implementation of the City's General Plan policies, Development Code standards and processes, and Community Design Guidelines will ensure that future development in the project area will meet the City's architectural and aesthetic standards. Therefore the project's cumulative contribution to visual and aesthetic resource impacts would be **less than cumulatively considerable**.

Mitigation Measures

None required.

3.1 AESTHETICS AND VISUAL RESOURCES

Cumulative Daytime Glare and Nighttime Lighting Impacts (Standard of Significance 4)

Impact 3.1.6 Implementation of the project and future development will contribute to cumulative daytime glare and nighttime lighting as undeveloped land is converted to urban uses. This impact would be **less than cumulatively considerable**.

As urban development occurs within the City's SOI, it would add to the cumulative levels of daytime glare and nighttime lighting. Future development would include structures, parking lots, streets, and other urban facilities that could create daytime glare by reflecting sunlight to vantage points on- and off-site. The extent of this impact would be dependent on the angle of the sun and structure and the type of building material used that could generate a glare effect. Future development would also introduce new levels of artificial light with nighttime lighting levels typical of urban/suburban development. New light sources include, but are not limited to, streetlights, security lights, household lighting, lighting of commercial interiors and exteriors, and vehicular traffic. Stationary light sources have the potential to adversely affect existing and future residents through "spillover" into adjacent properties. Additionally, if not designed properly, new light sources can result in a greater overall level of light at night, thus reducing night sky visibility and affecting the general visual character of the community.

The City's General Plan, Development Code, and Community Design Guidelines include many policies, standards, and guidance to avoid excessive light and glare. Future projects within the City limits must incorporate these standards into their site planning and design review plans. To ensure projects comply with the City's standards and do not create excessive light or glare, the City verifies compliance with the adopted standards through the development review process and through subsequent environmental review of specific projects. Therefore, this impact would be **less than cumulatively considerable**.

Mitigation Measures

None required.

REFERENCES

- Caltrans (California Department of Transportation). 2013. Scenic Highways Program. Accessed August 9. http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm.
- City of Grass Valley. 1999. *City of Grass Valley 2020 General Plan*.
- . 2002. *City of Grass Valley Community Design Guidelines*.
- . 2007. *City of Grass Valley Development Code*.
- Illuminating Engineering Society of North America. 1999. *Lighting for Exterior Environments: An IESNA Recommended Practice (RP-33-99)*.
- United States Department of Transportation. 2013. National Scenic Byways Program. Accessed August 9. <http://www.byways.org/explore/states/CA/>.

3.2 AIR QUALITY

This section includes a summary of applicable regulations, a description of existing air quality conditions, and an analysis of potential air quality impacts associated with the proposed project. Mitigation measures are recommended, as necessary, to reduce significant air quality impacts. All technical analyses related to this section are contained in **Appendix 3.2-1**.

3.2.1 EXISTING SETTING

CLIMATE, METEOROLOGY, AND AIR POLLUTION POTENTIAL

The project site is located in western Nevada County in Grass Valley and in the Mountain Counties Air Basin (MCAB). The MCAB consists of nine counties or portions of counties stretching from Plumas County on the north to Mariposa County on the south. The Northern Sierra Air Quality Management District (NSAQMD) is the local agency for air quality planning with authority over air pollutant sources.

Nevada County exhibits large variations in terrain and consequently exhibits large variations in climate, both of which affect air quality. The western portions of Nevada County slope relatively gradually, with deep river canyons running from southwest to northeast toward the crest of the Sierra Nevada range. East of the divide, the slope of the Sierra is steeper, but river canyons are relatively shallow. The warmest areas in Nevada County are found at the lower elevations along the county's west side, while the coldest average temperatures are found at the highest elevations (NSAQMD 2005).

The prevailing wind direction over Nevada County is westerly. However, the terrain of the area has a great influence on local winds, so that wide variability in wind direction can be expected. Afternoon winds are generally channeled up-canyon, while nighttime winds generally flow down-canyon. Winds are, in general, stronger in spring and summer and weaker in fall and winter. Periods of calm winds and clear skies in fall and winter often result in strong, ground-based inversions forming in mountain valleys. These layers of very stable air restrict the dispersal of pollutants, trapping these pollutants near the ground, representing the worst conditions for local air pollution occurring in Nevada County (NSAQMD 2005).

Regional airflow patterns have an effect on air quality patterns by directing pollutants downwind of sources. Localized meteorological conditions, such as light winds and shallow vertical mixing, and topographical features, such as surrounding mountain ranges, create areas of high pollutant concentrations by hindering dispersal. An inversion layer is produced when a layer of warm air traps cooler air close to the ground. Such temperature inversions hamper dispersion by stratifying contaminated air near the ground.

AIR POLLUTANTS OF CONCERN

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These regulated air pollutants are known as "criteria air pollutants" and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO₂), most particulate matter (PM₁₀ and PM_{2.5}), lead, and fugitive dust are primary air pollutants. Of these, CO, SO₂, PM₁₀, and PM_{2.5} are criteria pollutants. ROG and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary criteria pollutants. Presented below is a description of each of the primary and secondary criteria air pollutants and their known health effects.

3.2 AIR QUALITY

Carbon monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

Reactive organic gases (ROG) are compounds comprising primarily atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROG include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG, but rather by reactions of ROG to form secondary pollutants such as ozone.

Nitrogen oxides (NO_x) serve as integral participants in the process of photochemical smog production. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO₂ is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_x acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Nitrogen dioxide (NO₂) is a byproduct of fuel combustion, produced by combustion of NO and oxygen. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in children has also been observed at concentrations below 0.3 parts per million (ppm). NO₂ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO₂ also contributes to the formation of PM₁₀ (particulates having an aerodynamic diameter of 10 microns—or 0.0004 inch—or less in diameter) and ozone.

Sulfur dioxide (SO₂) belongs to the family of sulfur oxide gases (SO_x). SO₂ is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO₂. At sufficiently high concentrations, SO₂ may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO₂ may do greater harm by injuring lung tissue. A primary source of SO₂ emissions is high sulfur content coal. Gasoline and natural gas have very low sulfur content and hence do not release significant quantities of SO₂. SO₂ is a precursor to sulfate (SO₄), which is a component of particulate matter. In addition SO₂ and NO₂ can react with other substances in the air to form acids, which fall to the earth as rain, fog, snow, or dry particles.

Particulate matter (PM) is a mixture of pollutants in liquid and solid forms. Particulate matter may be classified as primary or secondary. Primary particulates are emitted directly by emission sources, whereas secondary particulates are formed through atmospheric reaction of gases. Particulates are usually classified according to size. The particle diameter can vary from approximately 0.005 micron to 100 microns. Particulate matter less than 10 microns in diameter is referred to as PM₁₀ (coarse particulates) and less than 2.5 microns is referred to as PM_{2.5} (fine particulates).

Studies have found a statistical association between adverse health effects and PM₁₀. The US Environmental Protection Agency (EPA) has estimated that airborne particles cause over 15,000 premature deaths in the United States per year. Recent studies using PM_{2.5} data have shown an even stronger association between health effects and particles in this size range. Evidence that smaller particles are more harmful is further supported by advanced research (World Bank 2003). Size determines how and where different particles are deposited in the respiratory tract. Ultrafine

particles behave similar to gases and travel to lower regions of the lungs, whereas larger particles are deposited in the upper or middle region of the respiratory tract. Particles larger than 10 microns in diameter are deposited almost exclusively in the nose and throat. Combustion processes contribute the majority of fine particulate matter whereas non-combustion processes contribute the majority of the larger PM fraction (World Bank 2003). Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems.

AMBIENT AIR QUALITY

The primary criteria air pollutants of concern in the project area include ozone and PM₁₀. Ambient concentrations of CO are typically low, though localized concentrations, particularly near congested roadway intersections, are a potential local concern.

In Nevada County, ambient air quality is currently monitored at stations located in the City of Grass Valley, in the Town of Truckee, and at one seasonal location in Nevada County known as White Cloud Mountain. The closest monitoring site to the proposed project is the Grass Valley-Litton Building air quality monitoring station, which monitors ambient concentrations of ozone and both coarse and fine particulate matter. **Table 3.2-1** summarizes the last three years of published ambient air quality data obtained from this monitoring station.

TABLE 3.2-1
SUMMARY OF ANNUAL AMBIENT AIR QUALITY DATA

Pollutant Standards	2010	2011	2012
Grass Valley-Litton Building Monitoring Site			
<i>Ozone</i>			
Max 1-hour concentration (ppm)	0.093	0.094	0.087
Max 8-hour concentration (ppm) (state/federal)	0.086 / 0.087	0.082 / 0.081	0.082 / 0.081
Number of days above state 1-hr standard	0	0	0
Number of days above state/federal 8-hour standard	18 / 6	20 / 6	22 / 5
<i>Respirable Particulate Matter (PM₁₀)</i>			
Max 24-hour concentration (µg/m ³) (state/federal)	NA / NA	NA / NA	NA / NA
Number of days above state/federal standard	NA / NA	NA / NA	NA / NA
<i>Fine Particulate Matter (PM_{2.5})</i>			
Max 24-hour concentration (µg/m ³) (state/federal)	19.7 / 10.5	21.0 / 10.2	37.2 / 7.7
Number of days above state/federal standard	NA / *	NA / 0	NA / 0

Source: CARB 2013

Note: Ambient ozone and PM concentrations were obtained from the Grass Valley-Litton Building monitoring station. Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. The number of days above the standard is not necessarily the number of violations of the standard for the year.

* = There is insufficient (or no) data available to determine the value.

NA – indicates that certain pollutant is not measured at monitoring site.

Toxic Air Contaminants

Toxic air contaminants (TACs) are not considered criteria pollutants in that TACs are not addressed through the setting of federal or state ambient air quality standards. Instead, the EPA and the California Air Resources Board (CARB) regulate hazardous air pollutants (HAPs) and

3.2 AIR QUALITY

TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with NSAQMD rules, they establish the regulatory framework for TACs. At the national level, the EPA has established National Emission Standards for HAPs (NESHAPs), as required by the federal Clean Air Act Amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

At the state level, CARB has authority for the regulation of emissions from motor vehicles, fuels, and consumer products. In 1998, CARB added diesel-exhaust particulate matter (DPM) to the list of toxic air contaminants. DPM is the primary toxic air contaminant of concern for mobile sources. Of all controlled TACs, emissions of DPM are estimated to be responsible for about 70 percent of the total ambient TAC risk. CARB has made the reduction of the public's exposure to DPM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles.

Local air districts have authority over stationary or industrial sources. All projects that require air quality permits from the NSAQMD are evaluated for TAC emissions. The NSAQMD limits emissions and public exposure to TACs through a number of programs. The NSAQMD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The NSAQMD also requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to Assembly Bill 2588.

Land Use Compatibility with TAC Emission Sources

The location of a development project is a major factor in determining whether it will result in localized air quality impacts. The potential for adverse air quality impacts increases as the distance between the source of emissions and members of the public decreases. While impacts on all members of the population should be considered, impacts on sensitive receptors are of particular concern.

In 2005, CARB released an informational guide entitled, *Air Quality and Land Use Handbook: A Community Health Perspective*. The purpose of this guide is to provide information to aid local jurisdictions in addressing issues and concerns related to the siting of sensitive land uses near major sources of air pollution. The handbook includes recommended separation distances for various land uses, which are summarized in **Table 3.2-2**. These recommendations were based on analyses which suggested that health risks associated with mobile sources, particularly DPM, increased within 300 feet of a major freeway and that a 70 percent reduction in ambient particulate levels occurs at 500 feet from the source (CARB 2005).

Within urbanized areas, the CARB handbook currently recommends that new sensitive land uses not be located within 500 feet of a freeway, urban roadways with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. However, these recommendations are not site-specific and should not be interpreted as defined "buffer zones." The recommendations of the handbook are advisory and need to be balanced with other state and local policies (CARB 2005). The nearest major roadway in relation to the project site is State Route (SR) 49, which is located adjacent to the project area. According to the traffic impact analysis prepared for the project, the adjacent segment of SR 49 currently averages approximately 25,000 vehicles per day (Kimley-Horn 2013).

TABLE 3.2-2
RECOMMENDATIONS ON SITING NEW SENSITIVE LAND USES NEAR AIR POLLUTANT SOURCES

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week).
	Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard.
	Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or CARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district.
	Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas-dispensing facilities.

Source: CARB 2005

Note: Recommendations are advisory, are not site-specific, and may not fully account for future reductions in emissions, including those resulting from compliance with existing/future regulatory requirements, such as reductions in diesel-exhaust emissions anticipated to occur with continued implementation of CARB's Diesel Risk Reduction Plan described below.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation.

3.2 AIR QUALITY

Odors

Although offensive odors rarely cause physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and agencies. Some facilities are commonly known to produce odors, including wastewater treatment facilities, chemical manufacturing, painting/coating operations, feedlots/dairies, composting facilities, landfills, and transfer stations. Because offensive odors rarely cause physical harm and no requirements for their control are included in state or federal air quality regulations. Any actions related to odors are based on citizen complaints to local governments and the NSAQMD. No major sources of odors were identified in the project area.

3.2.2 REGULATORY FRAMEWORK

FEDERAL AND STATE

Subsequent development allowed with implementation of the proposed project has the ability to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, future development activities under the proposed project entitlements fall under the ambient air quality standards promulgated on the local, state, and federal levels. The federal Clean Air Act of 1971 and the Clean Air Act Amendments (1977) established the national ambient air quality standards (NAAQS), which are promulgated by the EPA. The State of California has also adopted its own California ambient air quality standards (CAAQS), which are promulgated by CARB. The proposed project would occur in the portion of the Mountains Counties Air Basin under the air quality regulatory jurisdiction of the NSAQMD and is subject to the rules and regulations adopted by the NSAQMD to achieve attainment with the national and California ambient air quality standards. Federal, state, regional, and local laws, regulations, plans, and guidelines are summarized below.

Ambient Air Quality Standards

The Clean Air Act of 1971 established NAAQS, with states retaining the option to adopt more stringent standards or to include other pollution species. These standards are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State of California and the federal government have established health-based ambient air quality standards for six air pollutants. As shown in **Table 3.2-3**, these pollutants include ozone, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and lead. In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

**TABLE 3.2-3
AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards	National Standards
Ozone	8 Hour	0.070 ppm (137 μ g/m ³)	0.075 ppm
	1 Hour	0.09 ppm (180 μ g/m ³)	–
Carbon Monoxide	8 Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)
Nitrogen Dioxide	1 Hour	0.18 ppm (339 μ g/m ³)	100 ppb
	Annual Arithmetic Mean	0.030 ppm (57 μ g/m ³)	53 ppb (100 μ g/m ³)
Sulfur Dioxide	24 Hour	0.04 ppm (105 μ g/m ³)	N/A
	3 Hour	–	N/A
	1 Hour	0.25 ppm (665 μ g/m ³)	75 ppb
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 μ g/m ³	N/A
	24 Hour	50 μ g/m ³	150 μ g/m ³
Particulate Matter – Fine (PM _{2.5})	Annual Arithmetic Mean	12 μ g/m ³	15 μ g/m ³
	24 Hour	N/A	35 μ g/m ³
Sulfates	24 Hour	25 μ g/m ³	N/A
Lead	Calendar Quarter	N/A	1.5 μ g/m ³
	30 Day Average	1.5 μ g/m ³)	N/A
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μ g/m ³)	N/A
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 μ g/m ³)	N/A
Visibility-Reducing Particles	8 Hour (10:00 to 18:00 PST)	–	N/A

Source: CARB 2012a

Notes: mg/m³ = milligrams per cubic meter; ppm = parts per million; ppb = parts per billion; μ g/m³ = micrograms per cubic meter

Ambient Air Quality Attainment Status

Areas with air quality that exceed adopted air quality standards are designated as nonattainment areas for the relevant air pollutants. Areas that comply with air quality standards are designated as attainment areas for the relevant air pollutants. State Implementation Plans (SIPs) must be prepared by states for areas designated as federal nonattainment areas to demonstrate how the area will come into attainment of the exceeded federal ambient air quality standard. **Table 3.2-4** shows the federal and state attainment status for Nevada County. As shown, the region is nonattainment for federal ozone standards and nonattainment for state ozone and PM₁₀ standards (CARB 2012b).

3.2 AIR QUALITY

TABLE 3.2-4
FEDERAL AND STATE AMBIENT AIR QUALITY ATTAINMENT STATUS FOR NEVADA COUNTY

Pollutant	Federal	State
Ozone (O ₃)	Nonattainment	Nonattainment
Coarse Particulate Matter (PM ₁₀)	Unclassified	Nonattainment
Fine Particulate Matter (PM _{2.5})	Unclassified/Attainment	Unclassified
Carbon Monoxide (CO)	Unclassified/Attainment	Unclassified
Nitrogen Dioxide (NO ₂)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO ₂)	Unclassified	Attainment
Lead (Pb)	Unclassified/Attainment	Attainment

Source: CARB 2012b

LOCAL

Northern Sierra Air Quality Management District

The NSAQMD is the agency primarily responsible for ensuring that federal and state ambient air quality standards are not exceeded and that air quality conditions are maintained. Responsibilities of the NSAQMD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the federal Clean Air Act and the Clean Air Act Amendments. NSAQMD rules and regulations applicable to the proposed project include, but are not necessarily limited to, the following:

Rule 205, Nuisance. This rule prohibits the discharge of air contaminants or other material from any source which cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or to the public, or which endangers the comfort, repose, health, or safety of any such persons, or the public or which cause to have a natural tendency to cause injury or damage to business or property.

Rule 226, Dust Control. This rule requires the submittal of a Dust Control Plan to the NSAQMD for approval prior to any surface disturbance, including clearing of vegetation.

Rule 501, Permit Required. Before any source may be operated, a Permit to Operate shall be obtained from the Air Pollution Control Officer. No Permit to Operate shall be granted either by the Air Pollution Control Officer or the Hearing Board for any source constructed or modified without authorization or not in compliance with other NSAQMD rules and regulations, including those specified in NSAQMD Regulation IV.

Toxic Air Contaminant Regulations

In 1983, the California legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health."

A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal Clean Air Act (42 United States Code Section 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as toxic air contaminants. Once a toxic air contaminant is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. The CARB has, to date, established formal control measures for eleven TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

Since the last update to the TAC list in December 1999, CARB has designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

California Diesel-Risk Reduction Plan

In September 2000, CARB adopted the Diesel Risk Reduction Plan (DRRP), which recommends many control measures to reduce the risks associated with DPM and achieve a goal of 75 percent DPM reduction by 2010 and 85 percent by 2020. The DRRP incorporates measures to reduce emissions from diesel-fueled vehicles and stationary diesel-fueled engines. Ongoing efforts by CARB to reduce diesel-exhaust emissions from these sources include the development of specific statewide regulations, which are designed to further reduce DPM emissions. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce DPM emissions.

Since the initial adoption of the DRRP in September 2000, CARB has adopted numerous rules related to the reduction of DPM from mobile sources, as well as the use of cleaner-burning fuels. Transportation sources addressed by these rules include public transit buses, school buses, on-road heavy-duty trucks, and off-road heavy-duty equipment.

3.2 AIR QUALITY

3.3.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the application of the following State CEQA Guidelines Appendix G thresholds of significance, which indicate that a project would have a significant impact if it would:

- 1) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- 2) Expose sensitive receptors to substantial pollutant concentrations.
- 3) Create objectionable odors affecting a substantial number of people.
- 4) Conflict with or obstruct implementation of any applicable air quality plan.
- 5) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

NSAQMD thresholds have also been used to determine air quality impacts in this analysis. To assist local jurisdictions in the evaluation of air quality impacts, the NSAQMD has published a guidance document for the preparation of the air quality portions of environmental documents that includes thresholds of significance to be used in evaluating land use proposals. Thresholds of significance are based on a source's projected impacts and are a basis from which to apply mitigation measures (NSAQMD 2009). The NSAQMD has developed a tiered approach to significance levels: a project with emissions meeting Level A thresholds will require the most basic mitigations; projects with projected emissions in the Level B range will require more extensive mitigations; and those projects which exceed Level C thresholds will require the most extensive mitigations. The NSAQMD-recommended thresholds are identified in **Table 3.2-5**.

TABLE 3.2-5
NSAQMD-RECOMMENDED SIGNIFICANCE THRESHOLDS

Significance Level	Project-Generated Emissions (lbs/day)		
	NO _x	ROG	PM ₁₀
Level A	< 24	< 24	< 79
Level B	25–136	25–136	80–136
Level C	≥ 137	≥ 137	≥ 137

Source: NSAQMD 2009

According to the NSAQMD (2009), these thresholds are recommended for use by lead agencies when preparing initial studies. If, during the preparation of the initial study, the lead agency finds that any of the following thresholds may be exceeded and cannot be mitigated to Level B, then a determination of significant air quality impact must be made and an EIR is required.

For evaluation of project-related air quality impacts and considering that this EIR has been prepared to analyze the project, implementation of the proposed project would be considered significant if the project would:

- Exceed NSAQMD-recommended significance thresholds, as identified in **Table 3.2-5**. In accordance with NSAQMD-recommended thresholds of significance, project-generated short- or long-term increases in emissions in excess of Level C thresholds for NO_x, reactive organic gases (ROG), or PM₁₀ would be considered significant. The NSAQMD has not adopted thresholds of significance for PM_{2.5}. However, because PM_{2.5} is a subset of PM₁₀, significant increases in PM₁₀ would be considered to also result in significant increases in PM_{2.5}.

It is important to note that in cases when predicted emissions are projected to be below the Level C thresholds but exceeding the Level A thresholds (thereby placing project-related air quality impacts at Level B), the project would be considered potentially significant, subject to the recommended measures of NSAQMD's *Mitigation for Use During Design and Construction Phases for Classifications as Level B Threshold* contained within the District's CEQA guidance document (NSAQMD 2009). Implementation of the appropriate NSAQMD mitigation from this collection of measures would reduce Level B air quality impacts to a less than significant level.

- Exceed the NSAQMD health risk public notification thresholds set at 10 excess cancer cases in a million for cancer risk, or a Hazard Index of greater than one (1.0) for non-cancer risk.
- Contribute to localized concentrations of air pollutants at nearby receptors that would exceed applicable ambient air quality standards.
- Result in the frequent exposure of sensitive land uses to odorous emissions.

METHODOLOGY

Air quality impacts were assessed in accordance with methodologies recommended by CARB and the NSAQMD. Where quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects.

PROJECT IMPACTS AND MITIGATION MEASURES

Violate Air Quality Standard or Contribute Substantially to an Air Quality Violation: Short-Term Construction Emissions (Standard of Significance 1)

Impact 3.2.1 Subsequent land use activities associated with implementation of the proposed project could result in short-term construction emissions that could violate or substantially contribute to a violation of federal and state standards for ozone and coarse and fine particulate matter. This is considered a **significant and unavoidable** impact.

Implementation of the proposed project will result in short-term emissions from construction activities associated with subsequent development, including site grading, asphalt paving, building construction, and architectural coating. Emissions commonly associated with construction activities include fugitive dust from soil disturbance, fuel combustion from mobile

3.2 AIR QUALITY

heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM₁₀ and PM_{2.5} emissions, is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. Off-road construction equipment is often diesel-powered and can be a substantial source of NO_x emissions, in addition to PM₁₀ and PM_{2.5} emissions. Worker commute trips and architectural coatings are dominant sources of ROG emissions.

Since the actual phasing of future development allowed under the proposed project is not known at this time, construction-related emissions were modeled assuming an equal distribution of development over the City General Plan period. For example, the proposed project conceptually allows for a future growth potential of 425,908 square feet of commercial-type land uses, 1,034,985 square feet of industrial-type land uses, 534 residential units, and 20.3 acres of government storage space. For the purposes of this analysis, the project's nonresidential square footage and residential units are divided by seven (the number of years between the current year (2014) and the year of the General Plan horizon (2021)) in order to roughly depict potential construction-related air pollutant emissions which may result in any given year over the span of the City General Plan. However, it is important to note that the proposed project does not include any policy provisions requiring that its growth potential be attained. Not all of the identified land will be available for development at any given time based on landowner willingness to sell or develop, site readiness, environmental constraints, market changes, and other factors. This impact discussion assumes full growth potential as identified in **Table 3.0-2** of Section 2.0, Project Description, under the proposed project in order to present the maximum amount of pollutant emissions possible.

Construction-generated emissions associated the proposed project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. Modeling was based primarily on the default settings in the computer program for Nevada County. Construction equipment requirements and usage rates used in the model were based on model default assumptions as shown in **Appendix 3.2-1**. Predicted maximum daily construction-generated emissions for the proposed project are summarized in **Table 3.2-6**. This impact discussion assumes full growth potential under the proposed project in order to present the maximum amount of pollutant emissions possible. Thus, the emissions identified in **Table 3.2-6** are considered conservative.

TABLE 3.2-6
ESTIMATED SHORT-TERM EMISSIONS OF CRITERIA AIR POLLUTANTS

Project Phase	Emissions (lbs/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Project Construction ¹	191.3	80.8	21.3	12.8
NSAQMD Level A/C Thresholds	24/137	24/137	79/137	None
Individual Project Phases Exceed NSAQMD Level A/C Thresholds?	Yes/Yes	Yes/No	No/No	NA

¹Assumes 17,735 square feet of corporate business park; 65,526 square feet of light industrial; 82,300 square feet of general industrial; 43,108 square feet of central business; 11 single-family residential units; 66 two-family units; and 2.9 acres of government corporation yard constructed in one year.

As previously stated, the NSAQMD considers emissions in excess of Level C thresholds to have a significant air quality impact. Emissions below Level C thresholds are considered potentially significant and subject to the recommended mitigation of NSAQMD's *Guidelines for Assessing*

and Mitigating Air Quality Impacts of Land Use Projects (2009). NSAQMD-recommended mitigation measures are dependent on level of impact in comparison to NSAQMD-recommended significance thresholds (NSAQMD 2009). Accordingly, implementation of NSAQMD-recommended mitigation measures that are sufficient to reduce emissions to levels below 137 pounds per day (lbs/day) is considered adequate to reduce air quality impacts to a less than significant level.

Based on the modeling conducted, estimated short-term daily emissions of NO_x and PM₁₀ associated with the individual project phases would not exceed the NSAQMD-recommended Level C significance threshold of 137 lbs/day. However, emissions would exceed the NSAQMD-recommended Level C ROG significance threshold of 137 lbs/day. Moreover, since actual phasing of future development allowed under the proposed project is not known at this time, actual daily emissions would vary from day to day and would be dependent on the specific activities conducted. Therefore, it is possible that more than the assumed 17,735 square feet of corporate business park; 65,526 square feet of light industrial; 82,300 square feet of general industrial; 43,108 square feet of central business; 11 single-family residential units; 66 two-family units; and 2.9 acres of government corporation yard would be under construction simultaneously and would generate combined construction emissions that could surpass this threshold and impact air quality. As such, construction-generated emissions of air pollutants could potentially exceed the NSAQMD's significance thresholds for ROG, NO_x, and PM₁₀ and would be considered **potentially significant** subject to mitigation in order to reduce these increases.

In terms of addressing PM₁₀ emissions, NSAQMD Rule 226, Dust Control, requires the submittal of a Dust Suppression Control Plan to the NSAQMD for approval prior to any surface disturbance, including grading activities and the clearing of vegetation. In accordance with NSAQMD Rule 226, Dust Control, a Dust Suppression Control Plan (DSCP) shall be submitted for approval by the NSAQMD. The DSCP must identify project phases and construction schedules to be implemented in order to ensure that mitigated construction-generated emissions would not exceed NSAQMD-recommended significance thresholds. The DSCP is required to include, but is not limited to, the following NSAQMD-recommended measures for the control of fugitive dust emissions:

- The project applicant shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.
- All material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.
- All areas with vehicle traffic shall be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.
- All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads.
- All land clearing, grading, earth moving, or excavation activities on a project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.
- All inactive portions of the development site shall be covered, seeded, or watered until a suitable cover is established. Alternatively, the applicant may apply Nevada County-approved nontoxic soil stabilizers (according to manufacturers' specifications) to all

3.2 AIR QUALITY

inactive construction areas (previously graded areas which remain inactive for 96 hours) in accordance with the local grading ordinance.

- All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance, and there must be a minimum of 6 inches of freeboard in the bed of the transport vehicle.
- Paved streets adjacent to the project shall be swept or washed at the end of each day, or more frequently if necessary, to remove excessive or visibly raised accumulations of dirt and/or mud which may have resulted from activities at the project site.
- Prior to final occupancy, the applicant shall re-establish ground cover on the site through seeding and watering in accordance with the local grading ordinance.

The following mitigation is required to address increases in the ozone-precursor pollutants, ROG and NO_x. Mitigation measures **MM 3.2.1c** and **MM 3.2.1d** are sourced from NSAQMD's list of mitigation measures in its *Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects*, and mitigation measure **MM 3.2.1a** has been adapted from these mitigation measures in order to be more specific to the project and thus more stringent. Mitigation measure **MM 3.2.1b** is in addition to NSAQMD-recommended mitigation measures.

Mitigation Measures

MM 3.2.1a Future development projects within the Southern Sphere of Influence Planning and Annexation project area shall submit to the NSAQMD for approval an Off-Road Construction Equipment Emission Reduction Plan prior to groundbreaking demonstrating that all off-road equipment (portable and mobile) meets or is cleaner than Tier 2 engine emission specifications unless prior written approval for any exceptions is obtained from the NSAQMD. Note that all off-road equipment must meet all applicable state and federal requirements.

Construction contracts shall stipulate the following:

- Emissions from on-site construction equipment shall comply with NSAQMD Regulation II, Rule 202, Visible Emissions.
- The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes when not in use (as required by California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Existing power sources (e.g., power poles) or clean fuel generators shall be utilized rather than temporary power generators where feasible.

Timing/Implementation: *The Off-Road Construction Equipment Emission Reduction Plan shall be submitted and approved prior to issuance of grading permits for the first phase of construction. The plan shall be implemented during all phases of construction.*

Enforcement/Monitoring: *City of Grass Valley Planning Department;
Northern Sierra Air Quality Management District*

MM 3.2.1b All architectural coating activities associated with construction of future development projects within the Southern Sphere of Influence Planning and Annexation project area shall be required to use interior and exterior coatings that contain less than 250 grams of volatile organic compounds (VOC/ROG) per liter of coating.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *City of Grass Valley Planning Department;
Northern Sierra Air Quality Management District*

MM 3.2.1c Grid power shall be used (as opposed to diesel generators) for construction site power needs where feasible during construction.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *City of Grass Valley Planning Department;
Northern Sierra Air Quality Management District*

MM 3.2.1d Deliveries of construction materials shall be scheduled to direct traffic flow to avoid the peak hours of 7 to 9 AM and 4 to 6 PM.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *City of Grass Valley Planning Department;
Northern Sierra Air Quality Management District*

In accordance with NSAQMD Rule 226 and mitigation measures **MM 3.2.1a** through **MM 3.2.1d**, future development projects within the project area would be required to prepare a Dust Suppression Control Plan and an Off-Road Construction Equipment Emission Reduction Plan, employ the use of interior and exterior coatings that contain less than 250 grams of VOC/ROG, use grid power when feasible thus reducing diesel fuel consumption, and schedule off-peak-hour material deliveries. The DSCP would be required to identify construction schedules and project phases to be implemented, which would ensure that multiple project phases or construction activities would not occur simultaneously, thus reducing the amount of pollutants emitted in a single day.

However, these actions might not fully offset air pollutant emissions resulting from construction activities or even guarantee that NSAQMD construction-related thresholds are not surpassed by a future development project allowed under the proposed project. Potential growth under the proposed project could add a significant amount of nonresidential and residential development in the Grass Valley area. Construction of these projects could result in construction emissions in excess of NSAQMD significance threshold levels, established by the district to determine the

3.2 AIR QUALITY

significance for short-term, construction-related emissions from a project. Thus, this impact is considered **significant and unavoidable**.

Violate Air Quality Standard or Contribute Substantially to an Air Quality Violation: Long-Term Operational Emissions (Standard of Significance 1)

Impact 3.2.2 Subsequent land use activities associated with implementation of the proposed project could result in long-term operational emissions that could violate or substantially contribute to a violation of federal and state standards for ozone and coarse and fine particulate matter. This is considered a **significant and unavoidable** impact.

Implementation of the project would result in long-term operational emissions of criteria air pollutants and ozone precursors (i.e., ROG and NO_x). Project-generated increases in emissions would be predominantly associated with motor vehicle use. To a lesser extent, area sources, such as the use of natural-gas-fired appliances, landscape maintenance equipment, architectural coatings, and hearth fuel combustion, would also contribute to overall increases in emissions.

Long-term operational emissions attributable to the proposed project are summarized in **Table 3.2-7**. At completion, the project would result in a maximum net increase of approximately 368.0 pounds per day (lbs/day) of ROG, 288.3 lbs/day of NO_x, 119.0 lbs/day of PM₁₀, and 35.1 lbs/day of PM_{2.5}.

**TABLE 3.2-7
LONG-TERM OPERATIONAL EMISSIONS FROM
PROJECT BUILDOUT**

Source	Emissions (lbs/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Proposed Project – Summer Emissions				
Area Source	79.6	0.5	0.8	0.8
Energy Use	0.3	3.3	0.2	0.2
Mobile Source	241.8	255.1	117.8	33.9
Total	321.9	259.0	118.9	35.0
Proposed Project – Winter Emissions				
Area Source	79.6	0.5	0.8	0.8
Energy Use	0.3	3.3	0.2	0.2
Mobile Source	287.9	284.4	117.8	33.9
Total	368.0	288.3	119.0	35.1
NSAQMD Potentially Significant Impact Threshold	24/137	24/137	79/137	None
Exceed NSAQMD Threshold?	Yes/Yes	Yes/Yes	Yes/No	NA

Source: CalEEMod version 2013.2. Buildout assumptions include 124,146 square feet of corporate business park; 128,066 square feet of light industrial; 576,103 square feet of general industrial; 301,762 square feet of central business; 330,816 square feet of light industrial; 73 single-family residential units; 461 two-family units; and 20.3 acres of government corporation yard. Traffic generation is derived from data provided by Kimley-Horn and Associates (2013). Emission projections account for mitigation measure **MM 3.4.1**, which prohibits the installation of wood-burning fireplaces. See **Appendix 3.2-1** for emission model outputs.

Potential growth under the proposed project would add a significant amount of nonresidential and residential development as well as supporting infrastructure in the Grass Valley area, resulting in an increase of criteria air pollutants and precursors for which the air basin is in nonattainment. As shown in **Table 3.2-7**, long-term operational emissions would be in excess of NSAQMD significance threshold levels.

It is noted that the projected emissions presented in **Table 3.2-7** account for mitigation measure **MM 3.4.1** (see Section 3.4, Climate Change and Greenhouse Gases, of this DEIR), which prohibits the installation of new wood-burning fireplaces in subsequent development allowed under the proposed project. This mitigation has the effect of reducing ROG emissions by approximately 72 percent, NO_x emissions by 4 percent, PM₁₀ emissions by 54 percent, and PM_{2.5} emissions by 80 percent in comparison to emission levels without this mitigation (see **Appendix 3.2-1**).

Project-level analyses of air quality impacts, in accordance with CEQA requirements, would be conducted on a case-by-case basis as future development allowed under the proposed project proceeds. However, long-term operational emissions associated with the full realization of development allowed under the proposed project would be in excess of NSAQMD significance threshold levels. Therefore, this impact is **significant and unavoidable**.

Mitigation Measures

Implement mitigation measure **MM 3.4.1** (see Section 3.4, Climate Change and Greenhouse Gases).

Exposes Sensitive Receptors to Substantial Carbon Monoxide Pollutant Concentrations (Standard of Significance 2)

Impact 3.2.3 Implementation of the project would not contribute to localized concentrations of mobile-source CO that would exceed applicable ambient air quality standards. This is considered a **less than significant** impact.

The primary mobile-source criteria pollutant of local concern is carbon monoxide. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Transport of this criteria pollutant is extremely limited; CO disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hotspots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours.¹ Modeling is therefore typically conducted for intersections that are projected to operate at unacceptable levels of service during peak commute hours.

For the purpose of this CO hotspots analysis, the traffic impact analysis prepared for the project was reviewed in order to identify any project-affected intersection declines in level of service (LOS) to an unacceptable level. For instance, if the defined LOS at a project-affected intersection declines from LOS A, B, C, or D to LOS E or F, or if the volume-to-capacity (V/C) ratio increases by 2 percent or more as a result of a proposed project for intersections currently rated

¹ Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of transportation infrastructure. LOS is most commonly used to analyze intersections by categorizing traffic flow with corresponding safe driving conditions. LOS A is considered the most efficient level of service and LOS F the least efficient.

3.2 AIR QUALITY

LOS E or worse, the project would pose a potentially significant impact in terms of CO hotspots, and specific CO modeling would be required for an accurate significance determination. (The capacity of a transportation system is referred to as the level of service and is generally defined as a ratio of traffic volume to roadway capacity. While it is customary to refer to an LOS using an alphabetic reference A–F, the inevitable comparison to school grades is not accurate. From a purely transportation standpoint, a roadway with an LOS of D is a roadway used to its design capacity.) In other words, the proposed project would result in a less than significant impact to air quality for local CO if:

- Traffic generated by the proposed project would not result in deterioration of intersection level of service to LOS E or F; or
- The project would not contribute additional traffic to an intersection that already operates at LOS of E or F.

Based on the traffic analysis prepared for this project, the proposed project would increase the number of vehicles on the following intersections over existing conditions, causing these facilities to degrade to an unacceptable level of service. All other traffic intersections in the vicinity of the project are projected to continue to operate acceptably with project implementation.

- McKnight Way/Taylorville Road
- McKnight Way/SR 49 Southbound Ramp
- McKnight Way/La Barr Meadows Road

Since the intersections listed above are projected to operate at an unacceptable level of service with project implementation, CO hotspot modeling was conducted based on PM peak-hour traffic volumes for winter operating conditions. To ensure a conservative analysis, predicted 1-hour and 8-hour CO concentrations were calculated assuming background CO concentrations of 1.3 and 2.0 parts per million (ppm), respectively, based on the most recent available data obtained from the nearest monitoring stations that monitor CO (1-hour and 8-hour background concentrations based on 2012 measurements at the North Highlands-Blackfoot Way CO monitoring site). A persistence factor of 0.7 was used to convert predicted hourly concentrations to 8-hour concentrations. The predicted 1-hour and 8-hour CO concentrations for future cumulative conditions are summarized in **Table 3.2-8**.

TABLE 3.2-8
PREDICTED LOCAL MOBILE SOURCE CARBON MONOXIDE CONCENTRATIONS
FUTURE CONDITIONS

Traffic Facility	Predicted CO Concentration (ppm)	
	1-hour	8-hour
Intersections		
McKnight Way/Taylorville Road	3.0	2.9
McKnight Way/SR 49 Southbound Ramp	3.7	3.6
McKnight Way/La Barr Meadows Road	4.0	3.8
California Ambient Air Quality Standards (CAAQS)	20	9
Predicted Concentrations Exceed CAAQS?	No	No

*Source: Caline4 model. Note: Predicted CO concentrations are the sums of a background component, which includes the cumulative effects of CO sources in the project area vicinity and the proposed project's contribution. Results based on emissions modeling conducted using the Caline4 computer program. Caline4 outputs are included as **Appendix 3.2-1**.*

As noted in **Table 3.2-8**, under future conditions, predicted maximum 1-hour and 8-hour CO concentrations at the intersections projected to operate at unacceptable levels of service during peak commute hours would not exceed even the most stringent corresponding California ambient air quality standards (CAAQS) of 20 and 9 ppm, respectively. Therefore, the proposed project would not contribute to predicted localized concentrations of mobile-source carbon monoxide that would exceed applicable ambient air quality standards. As a result, this impact would be considered **less than significant**.

Mitigation Measures

None required.

Exposure of Sensitive Receptors to Toxic Air Contaminant Pollutant Concentrations (Standard of Significance 2)

Impact 3.2.4 Implementation of the proposed project would not result in increased exposure of existing or planned sensitive land uses to stationary or mobile-source TACs that would exceed applicable standards. As a result, this impact is considered **less than significant**.

Sensitive land uses are generally defined as locations where people reside or where the presence of air emissions could adversely affect the use of the land. Typical sensitive receptors include residents, schoolchildren, hospital patients, and the elderly.

Short-Term Construction Sources

Potential sources of TACs associated with construction-related activities are primarily associated with the airborne entrainment of asbestos due to the disturbance of naturally occurring asbestos-containing soils, as well as emissions of DPM associated with the use of diesel-powered construction equipment. The proposed project is not located in an area designated by the State of California as likely to contain naturally occurring asbestos (DOC 2000). As a result, construction-related activities would not be anticipated to result in increased exposure of sensitive land uses to asbestos. Construction of the proposed land uses would, however, result in construction-generated diesel-exhaust emissions. Particulate exhaust emissions from diesel-fueled engines (DPM) were identified as a toxic air contaminant by CARB in 1998.

Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. For sensitive land uses, the calculation of cancer risk associated with exposure to TACs is typically based on a 70-year period of exposure. The use of diesel-powered construction equipment would be temporary and episodic and would occur over a relatively large area. In addition, mitigation measures incorporated for the control of particulate emissions from on-site construction equipment would substantially reduce emissions of DPM (see mitigation measure **MM 3.2.1a**). For these reasons, DPM generated by project construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer is greater than 10 in 1 million for nearby receptors.

3.2 AIR QUALITY

Long-Term Operational Sources

In April 2005, CARB released the *Air Quality and Land Use Handbook: A Community Health Perspective*, which offers guidance on siting sensitive land uses in proximity to sources of air toxics. Sensitive land uses identified in the handbook include residential communities, schools and school yards, day-care centers, parks and playgrounds, and hospitals and medical facilities. Particular sources of air toxics treated in the guidance are freeways and major roadways. These roadways are sources of DPM, which CARB has listed as a toxic air contaminant.

The handbook recommends that sensitive land uses be sited no closer than 500 feet from a freeway or major roadway, a buffer area that was developed to protect sensitive receptors from exposure to DPM, which was based on traffic-related studies that showed a 70 percent drop in particulate matter concentrations at a distance of 500 feet from the roadway. Presumably, acute and chronic risks as well as lifetime cancer risk due to DPM exposure are lowered proportionately.

The nearest major roadway in relation to the project site is SR 49, which traverses the middle of the project area. While this segment of SR 49 averages 25,000 vehicles per day, which is under the CARB-defined trip threshold of 100,000 daily trips to be considered a major roadway, SR 49 is considered a major roadway for the purposes of this DEIR in order to provide a conservative analysis. There are two areas at the north end of the project site that are proposed for residential land use designations, and these areas are within the CARB-recommended buffer area (approximately 400 feet from SR 49 at the nearest; see **Figure 2.0-2**), and therefore future receptors could be negatively affected by TACs generated on SR 49.

As a refinement to the CARB handbook, the Sacramento Metropolitan Air Quality Management District (SMAQMD) prepared the *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways*, which was updated in March 2011. This protocol sets a screening threshold (276 per million) under which potential health risk impacts are not anticipated. The screening threshold was selected by the SMAQMD as that level of increased individual risk corresponding to a 70 percent reduction from the highest risk calculated at distances from the edge of the nearest travel lane to the nearest sensitive receptor for peak-hour traffic volumes. The use of the SMAQMD's recommended protocol for the purposes of this analysis is considered reasonable and appropriate.

Based on the location of the proposed residential land use designations (approximately 400 feet from SR 49 at the nearest) and the peak-hour volumes (3,100) along the nearby SR 49 segment, the location of the project site would not exceed the thresholds identified in the refined protocol, as shown in **Table 3.2-9**.

TABLE 3.2-9
SCREENING EVALUATION OF POTENTIAL CANCER RISK TO PROPOSED RESIDENCES ATTRIBUTABLE TO SR 49

State Route 49 Peak-Hour Traffic (vehicles/hr)	Receptor Distance from Edge of Nearest Travel Lane (feet)	Incremental Cancer Risk per Million: West	Incremental Cancer Risk per Million: East	Distance Screening Threshold (276 per Million) Exceeded	Proposed Residential Land Uses Distance from SR 49	Screening Threshold (276 per million) Surpassed?
3,100	10	140	219	Not exceeded at any distance	> 400 feet	No
	25	108	188			
	50	83	149			
	100	54	105			
	200	35	67			
	300	25	51			
	400	19	38			
	500	16	32			

Source: SMAQMD 2011; Peak-Hour Traffic Source: Caltrans 2012

While peak-hour volumes along the nearby SR 49 segment will most likely experience increases in the future, recent regulations imposed by CARB are anticipated to substantially reduce future DPM emissions. CARB's On-Road Heavy-Duty Diesel Vehicles (In Use) Regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Heavier trucks were required to be retrofitted with particulate matter filters beginning January 1, 2012, and older trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses, as well as to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. This regulation ensures that future DPM emissions associated with future increases in peak-hour volume of traffic along the nearby SR 49 segment will be negligible.

Emissions of TACs can also result from stationary sources in addition to mobile sources. No major existing stationary sources of TACs that would affect proposed on-site sensitive receptors were identified in the vicinity of the proposed project site (CHAPIS 2013). However, the proposed project could result in the future construction of land uses that could potentially generate emissions of TACs. Emissions of TACs from stationary sources are regulated by the NSAQMD and subject to NSAQMD rules and regulations, including NSAQMD Regulation IV (Authority to Construct), Regulation V (Permit to Operate), and Regulation IX (Toxics Air Contaminants). All stationary sources that have the potential to emit TACs are required to obtain permits from the NSAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations. As part of the NSAQMD's permitting requirements, sources having the potential to emit TACs would be required to implement measures designed to ensure that potential health risks to nearby receptors would not exceed established standards.

For the reasons identified above, the proposed project would not expose existing or planned sensitive land uses to stationary or mobile-source TACs and therefore would result in a **less than significant** impact.

3.2 AIR QUALITY

Mitigation Measures

None required.

Exposure of Sensitive Receptors to Odorous Emissions (Standard of Significance 3)

Impact 3.2.5 Implementation of the proposed project would not result in increased exposure of sensitive receptors to odorous emissions. As a result, potential exposure of sensitive receptors to odors would be considered **less than significant**.

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Land uses commonly considered to be potential sources of odorous emissions include wastewater treatment plants, sanitary landfills, food processing facilities, chemical manufacturing plants, rendering plants, paint/coating operations, and agricultural feedlots and dairies.

While implementation of the proposed project could result in the development of industrial land uses which could be a source of odors, the actual construction phasing and specific configuration of future development allowed under the proposed project is not known at this time, as no specific development projects are proposed as part of the proposed project. Therefore, the evaluation of specific odor impacts would be overly speculative for the purposes of this analysis. Future development allowed under the proposed project would be subject to project-level analyses of odor impacts in accordance with CEQA requirements, and would be conducted on a case-by-case basis as future development allowed under the proposed project proceeds.

There are no major sources of odors were identified in the vicinity of the project area that could potentially affect proposed on-site land uses, with the possible exception of a landscape materials retailer. However, NSAQMD Rule 205 prohibits the discharge of any material from any source which could cause nuisance or annoyance to any considerable number of persons.

As a result of NSAQMD Rule 205 and the requirement to conduct project-level analyses of odor impacts in accordance with CEQA requirements on a case-by-case basis, exposure of sensitive receptors to odorous emissions would be considered **less than significant**.

Mitigation Measures

None required.

3.2.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative setting for air quality includes Nevada County in its entirety and the Mountain Counties Air Basin. Nevada County is currently designated nonattainment for ozone and PM₁₀ standards. Cumulative growth in population, vehicle use, and industrial activity could inhibit efforts to improve regional air quality and attain the ambient air quality standards.

CUMULATIVE IMPACTS AND MITIGATION MEASURES**Contribution to Cumulative Regional Air Quality Conditions (Standards of Significance 4 and 5)**

Impact 3.2.6 Long-term operation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development in the Mountain Counties Air Basin, would contribute to cumulative increases in emissions of ozone-precursor pollutants (ROG and NO_x) and PM₁₀ that could contribute to future concentrations of ozone and PM₁₀, for which the region is currently designated nonattainment. This impact would be considered **cumulatively considerable**.

Nevada County is designated nonattainment status for ozone and PM₁₀. As a nonattainment area, the NSAQMD is required to prepare a federally enforceable State Implementation Plan (SIP) for western Nevada County in accordance with the Clean Air Act. The SIP is an air quality attainment plan designed to reduce emissions of ozone precursors enough to re-attain the federal ozone standard by the earliest practicable date. The air quality attainment plan (titled *Reasonably Available Control Technology State Implementation Plan Revision for Western Nevada County 8-Hour Ozone Non-Attainment Area*) includes various pollution control strategies. Overall emissions of ozone precursors must be reduced in western Nevada County (consistent with Reasonable Further Progress requirements specified in the Clean Air Act) until attainment is reached. As discussed for Impact 3.2.1, predicted short-term construction-generated emissions of ROG, NO_x, and PM₁₀ could exceed the NSAQMD's Level C significance thresholds. In addition, project-generated operational emissions would also exceed NSAQMD significance thresholds at project buildout. Since the proposed project would surpass NSAQMD significance thresholds, it would conflict with the goals of the State Implementation Plan.

According to NSAQMD guidance, impacts of local pollutants are cumulatively significant when modeling shows that combined emissions from the project and other existing and planned projects will exceed air quality standards. As just discussed, predicted short-term construction-generated emissions of ROG, NO_x, and PM₁₀ could exceed NSAQMD significance thresholds, and project-generated operational emissions would also exceed NSAQMD significance thresholds at project buildout.

Mitigation Measures

Implement mitigation measures **MM 3.2.1a** through **MM 3.2.1d**.

According to NSAQMD guidance, impacts of local pollutants are cumulatively significant when modeling shows that combined emissions from the project and other existing and planned projects will exceed air quality standards. As discussed above, other projects, in combination with the proposed project, are planned in Nevada County. The proposed project would exceed the NSAQMD's Level C significance thresholds on its own. As a result, increases in project-related emissions could on a cumulative basis contribute to existing nonattainment conditions. As a result, this impact would be considered **cumulatively considerable** and **significant and unavoidable**.

3.2 AIR QUALITY

REFERENCES

- Caltrans (California Department of Transportation). 2012. Caltrans Traffic and Vehicle Data Systems Unit. <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2011all/index.html>.
- CARB (California Air Resources Board). 1999. *Final Staff Report: Update to the Toxic Air Contaminant List*.
- . 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*.
- . 2012a. *Ambient Air Quality Standards*. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.
- . 2012b. *State and Federal Area Designation Maps*. <http://www.arb.ca.gov/desig/adm/adm.htm>.
- . 2013. *Air Quality Data Statistics*. <http://www.arb.ca.gov/adam/index.html>.
- CHAPIS (Community Health Air Pollution Information System). 2013. Accessed August 28. http://www.arb.ca.gov/gismo2/chapis_v01_6_1_04/.
- DOC (California Department of Conservation). 2000. *A General Location Guide for Ultramafic Rocks in California-Areas More Likely to Contain Naturally Occurring Asbestos*.
- Kimley Horn. 2013. *Southern Sphere of Influence EIR*.
- NSAQMD (Northern Sierra Air Quality Management District). 2005. *Ambient Air Quality Monitoring, Annual Report*. www.myairstdistrict.com/index.php/air-monitoring/2005-report.
- . 2009. *Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects*. Revised August 18, 2009.
- . 2011. *Reasonably Available Control Technology State Implementation Plan Revision for Western Nevada County 8-Hour Ozone Non-Attainment Area*. 2011.
- SMAQMD (Sacramento Metropolitan Air Quality Management District). 2011. *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways*.
- World Bank. 2003. *Urban Air Pollution: The Science of Health Impact of Particulate Matter*. South Asia Urban Air Quality Management Briefing Note No. 13.

3.3 BIOLOGICAL RESOURCES

This section describes the existing biological resources, including the special-status species and sensitive habitats, known to occur, or that potentially occur, within the amendment area of the Southern Sphere of Influence Planning and Annexation Project (herein referred to as the study area). This section also addresses the regulations and programs that provide for the protection of these biological resources and includes an assessment of the potential impacts of implementing the proposed project. This section also includes a discussion of mitigation measures necessary to reduce impacts to a less than significant level, where feasible.

3.3.1 EXISTING SETTING

The following regional setting description is derived from the City of Grass Valley 2020 General Plan Draft Environmental Impact Report (1999b).

REGIONAL SETTING

The City of Grass Valley Planning Area is located in a transition zone between the lower foothill elevations and the higher Sierra Nevada. This transition zone is considered the yellow pine belt. Because it is a transition zone, a variety of intermingled species occur in the area that would typically occur at zones of either higher or lower elevations. The area is surrounded by ponderosa pines (*Pinus ponderosa*), black oaks (*Quercus kelloggii*), and blue oaks (*Q. douglasii*) and contains many other locally important natural communities. Localized areas of serpentine or gabbro soils support native plant species that have adapted to unique soil conditions which other species cannot tolerate. Vernal pools, which are seasonally flooded depressions underlain with clay or hardpan soils, accumulate water and support unique native vegetation and wildlife species. Other areas of biological significance in the Grass Valley area include riparian corridors, creeks and tributaries that support native trees, shrubs, herbaceous vegetation, and wildlife, including special-status species.

LOCAL SETTING

The study area consists of rolling terrain and elevations range from approximately 2,200 feet to 2,700 feet above mean sea level (amsl). Portions of the study area were previously mined, and much of the eastern portion of the study area, west of La Barr Meadows Road, was developed and significantly modified for use as a sawmill (Bear River Lumber Mill). Although this use was discontinued, the area still retains features from the operation of the mill. A comparison of topography data from 1891, 1949, and 1995 shows significant changes in hydrology and topography (Foothill Associates 2002). Historically, an intermittent drainage flowed through the study area from the western side to the southeast end. Three ponds were originally excavated within the study area for the mill operations west of La Barr Meadows Road. Several dirt roads have also been constructed within the study area. Site elevations were altered in many areas, and portions of the study area have large concrete slabs, old building foundations, gravel and asphalt pads, and rubble.

The central study area adjacent to and between La Barr Meadows Road and State Route (SR) 49, has been developed. The western portion of the study area, known as Berriman Ranch, lies west of SR 49. This area is composed of ponderosa pine woodland, grassland, abandoned orchards, and several structures, both historical and residential.

3.3 BIOLOGICAL RESOURCES

Hydrology

The City of Grass Valley and the study area are located within the Upper Bear Watershed (USGS cataloging unit number 18020126) (EPA 2013). The Grass Valley area lies primarily within the Wolf Creek drainage basin. The South Fork of Wolf Creek and Little Wolf Creek discharge into Wolf Creek in the central Grass Valley Planning Area. Wolf Creek passes through downtown Grass Valley and then continues south to its confluence with the Bear River.

Wolf Creek abuts the southwestern portion of the project area and is located approximately 2,200 feet west of SR 49. One stream, Ellens Creek, bisects the study area. Ellens Creek flows southwesterly and drains into Wolf Creek. Two ponds, created by earthen dams for mill operations, exist on the east side of SR 49. According to the biological inventory prepared by EcoSynthesis in 2006, the Berriman Ranch property contains several wetland features, including a wet meadow and freshwater emergent wetlands. In addition, a wetland delineation conducted by Foothill Associates (2000) for the Bear River Mill site identified two intermittent drainage ditches along La Barr Meadows Road. These drainage ditches likely function to collect runoff. There are two additional intermittent drainages located near the western boundary of the project area. Further information regarding hydrology can be found in Section 3.8, Hydrology and Water Quality.

Soils

The Natural Resource Conservation Service's (NRCS) Web Soil Survey identifies nine soil types in the study area. Each soil type is described in Section 3.6, Geology, Soils, and Mineral Resources.

Climate

Climate in the study area is characterized as temperate and humid (USDA 1997). During the winter months, temperatures range from an average of 52.8 degrees Fahrenheit (°F) to 59.4°F; during the summer months, temperatures range from an average of 81.9°F to 90.9°F (WRCC 2013). The average annual maximum temperature is 70.4°F, while the average annual minimum is 46.3°F (WRCC 2013). Average annual total precipitation for Grass Valley is 53.2 inches (WRCC 2013), and the mean freeze-free period is about 100 to 150 days (USDA 1997).

BIOLOGICAL SETTING

Vegetative Communities

Vegetative communities within and immediately surrounding the study area consist primarily of disturbed annual grassland, mixed chaparral, ponderosa pine forest, montane hardwood-conifer forest, disturbed lands, and potential waters of the United States. These communities, and their associated wildlife species, are described below. The community descriptions below are derived from the classification system from Mayer and Laudenslayer (1988) (see **Figure 3.3-1, Vegetation Map**).

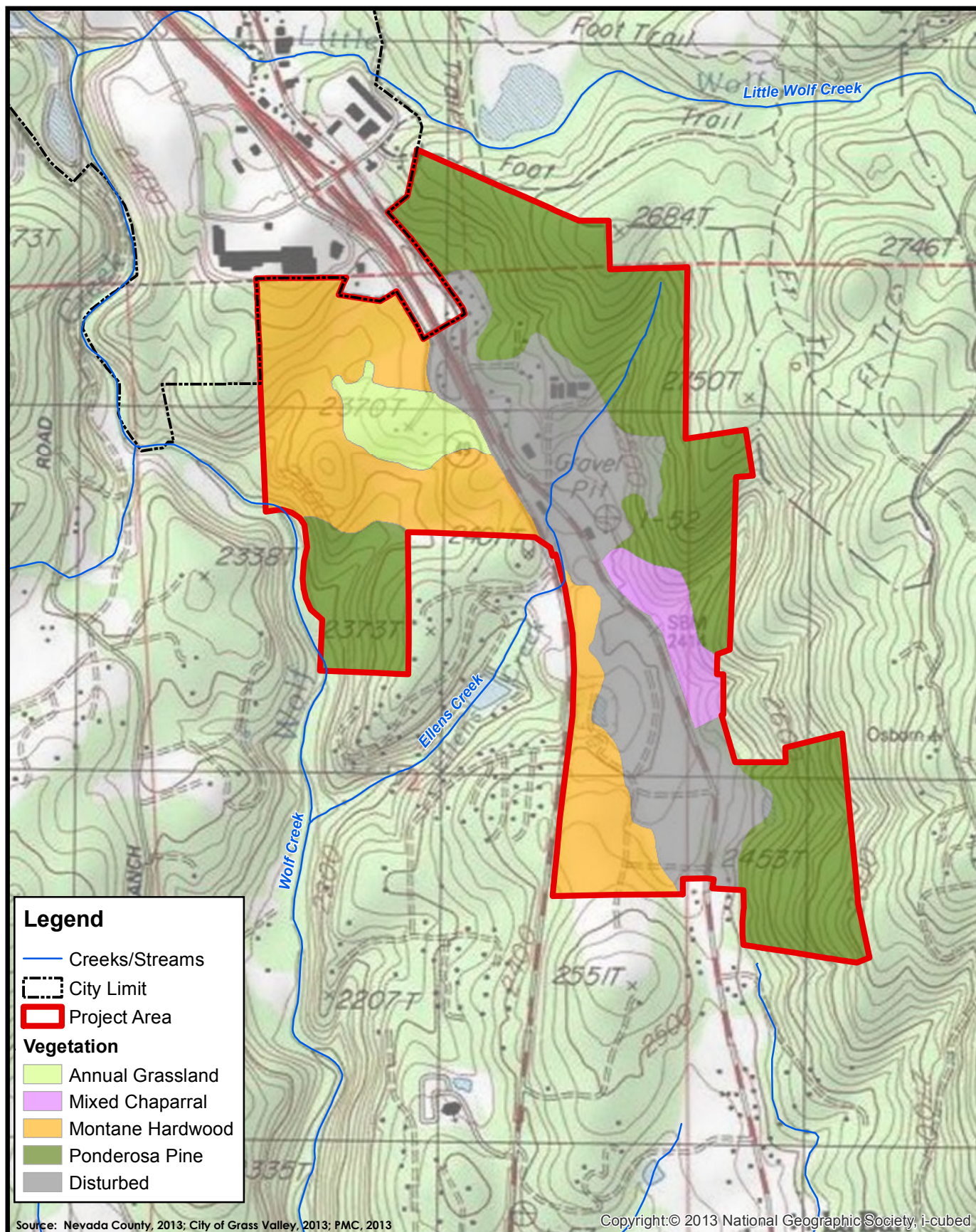


Figure 3.3-1
Vegetation Map

Annual Grassland

Annual grassland habitats are open grasslands dominated by annual plant species found from the flat plains of the Central Valley to the coastal mountain ranges of Mendocino County and in scattered locations across the southern portion of the state. Species typically associated with this community include wild oats (*Avena* spp.), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), wild barley (*Hordeum* spp.), foxtail fescue (*Vulpia myuros*), bradleaf filaree (*Erodium botrys*), redstem filaree (*Erodium cicutarium*), turkey mullein (*Croton setigerus*), true clovers (*Trifolium* spp.), bur clover (*Medicago* spp.), popcorn flower (*Cryptantha* spp.), and several other grasses and forbs.

Annual grasslands provide foraging habitat for a wide variety of wildlife species including raptors, seed-eating birds, small mammals, amphibians, and reptiles. However, some require special habitat features such as cliffs, caves, ponds, or habitats with woody vegetation for breeding, resting, and escape cover. Reptiles commonly associated with this habitat type include western fence lizard (*Sceloporus occidentalis*), common garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalis viridis*). Black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Otospermophilus beecheyi*), western harvest mouse (*Reithrodontomys megalotis*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), badger (*Taxidea taxus*), and coyote (*Canis latrans*) are mammals commonly found in this habitat type. Common birds known to breed in annual grasslands are burrowing owl (*Athene cunicularia*), short-eared owl (*Asio flammeus*), horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*).

Mixed Chaparral

Mixed chaparral occurs as a mosaic on low- to mid-elevation (<5,000 feet amsl) steep slopes and ridges with thin, well-drained soils. This is typically a structurally homogenous brushland community dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Common associates include scrub oak (*Quercus berberidifolia*), chaparral oak (*Q. durata*), and several species of ceanothus (*Ceanothus* spp.) and manzanita (*Arctostaphylos* spp.). Shrub species typically found within mixed chaparral include chamise (*Adenostoma fasciculatum*), birch leaf mountain mahogany (*Cercocarpus betuloides*), silk-tassel (*Garrya* spp.), toyon (*Heteromeles arbutifolia*), yerba santa (*Eriodictyon* spp.), California buckeye (*Aesculus californica*), poison oak (*Toxicodendron diversilobum*), sumac (*Rhus* spp.), California buckthorn (*Rhamnus californica*), holly leaf cherry (*Prunus ilicifolia*), Montana chaparral pea (*Pickeringia montana*), and California fremontia (*Fremontodendron californicum*).

The shrub height and percent crown cover in the mixed chaparral community is dictated by the amount of time since the last burn, precipitation regime, aspect, and soil type. The post-fire early-successional stages of mixed chaparral are characterized by subshrubs, annuals, and perennial herbs. However, at maturity, this community is characterized by a dense, nearly impenetrable thicket with greater than 80 percent shrub cover. Chaparral habitat is found in several areas in the study area. Vegetation in these areas is extremely dense and is dominated by several shrubs such as toyon, yerba santa (*Eriodictyon* sp.), scotch broom (*Cytisus scoparius*), and manzanita.

Chaparral provides important cover, foraging, and breeding habitat for many wildlife species. Examples of wildlife species typically found in this community include spotted towhee (*Pipilo maculatus*), California quail (*Callipepla californica*), western scrub-jay (*Aphelocoma californica*), western fence lizard, and western rattlesnake.

3.3 BIOLOGICAL RESOURCES

Ponderosa Pine

This vegetative community is composed of both pure stands of ponderosa pine (*Pinus ponderosa*) as well as mixed stands of species where at least 50 percent of the canopy is composed of ponderosa pine. This community can have an open patchy structure or an extremely dense structure. Typically, shrub coverage is 10–30 percent and grass and forb coverage is 5–10 percent.

Associated species can vary, depending on site conditions and location. Common tree associates include white fir (*Abies concolor*), incense cedar (*Calocedrus decurrens*), Coulter pine (*Pinus coulteri*), Jeffrey pine (*P. jeffreyi*), sugar pine (*P. lamertiana*), Douglas fir (*Pseudotsuga menziesii*), canyon live oak (*Quercus chrysolepis*), California black oak (*Q. kelloggii*), Oregon white oak (*Q. garryana*), Pacific madrone (*Arbutus menziesii*), and tanoak (*Notholithocarpus densiflorus*). Other associated plants include manzanita, ceanothus, mountain misery (*Chamaebatia foliolosa*), Pacific dogwood (*Cornus nuttallii*), yerba santa, bitter cherry (*Prunus emarginata*), buckthorn (*Rhamnus* sp.), poison oak, sierra gooseberry (*Ribes roezlii*), and a variety of grasses and forbs.

Ponderosa pine forests provide important transitional or migratory habitat for deer. The vegetative community is considered good general habitat for a variety of wildlife species.

Montane Hardwood Conifer

This vegetative community is a closed forest comprising both conifers and hardwoods that often occur in a mosaic-like pattern with small, homogenous stands of conifer interspersed with stands of broadleaved trees. This community typically occurs on coarse, well-drained mesic soils, in mountainous terrain between 1,000 and 4,000 feet amsl. Common associates are ponderosa pine, Douglas fir, incense cedar, California black oak, tanoak, Pacific madrone, Oregon white oak, and other localized species.

Montane hardwood conifer provides habitat for a variety of wildlife species, including cavity-nesting birds in mature stands. Mast crops are an important food source for several bird and mammal species. In addition, the mosaic of canopy cover and understory vegetation provide suitable habitat for several species, and the detrital layer of mesic areas provides suitable habitat for many amphibian species.

Disturbed Land

Disturbed land associated with the study area includes roads, urban development, private residences, sawmill remnants, and trails. These lands are subjected to ongoing or past disturbance (e.g., vehicle activities, mowing). Because of the high degree of disturbance, developed areas generally have a low habitat value for wildlife, although a number of species adapted for disturbed conditions can utilize these areas.

Sensitive Habitats and Other Protected Resources

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under the California Environmental Quality Act (CEQA), Section 1600 of the California Fish and Game Code, and/or Sections 401 and 404 of the Clean Water Act.

Waters of the United States, Including Wetlands and Riparian Habitats

There are two major drainages with associated riparian habitats in the study area: Wolf Creek, which runs along the west edge of the study area, and its tributary, Ellens Creek, which bisects the study area. In addition, other waters of the United States have been mapped in parts of the study area, including seasonal wetland, seasonal marsh, seep, pond, wet meadow, and intermittent drainage (Gallaway Consulting 2005; EcoSynthesis 2006). The majority of the watercourses in the study area follow typical drainage patterns, flowing east to west and eventually draining to Wolf Creek.

In general, both jurisdictional waters of the United States and isolated wetland features provide a variety of functions for plants and wildlife. Drainages and wetlands provide habitat, foraging, cover, migration/movement corridors, and water sources for both special-status and other species. In addition to habitat functions, these features provide physical conveyance of surface water flows as well as channels for the handling of large stormwater events. Large storms can produce extreme flows that cause bank cutting and sedimentation of open waters and streams. Jurisdictional waters can slow these flows and lessen the effects of these large storm events, protecting habitat and other resources.

Vegetation associated with the wetland features within the study area include sticktight (*Bidens frondosa*), broad-leaved cattail (*Typha latifolia*), water plantain (*Alisma lanceolatum*), common knotweed (*Persecaria lapathifolium*), arroyo willow (*Salix lasiolepis*), curly dock (*Rumex crispus*), bog rush (*Juncus effuses*), Baltic rush (*Juncus balticus*), umbrella sedge (*Cyperus squarrosus*), clustered field sedge (*Carex praeegracilis*), California rose (*Rosa californica*), and fireweed (*Epilobium* sp.). Additional species found around wetland areas include Himalayan blackberry (*Rubus discolor*), iris-leaved rush (*Juncus xiphioides*), and nutsedge (*Cyperus* sp.). Vegetation surrounding the ponded areas in the study area includes the above-listed species as well as wild grape (*Vitis californica*) and Fremont cottonwood (*Populus fremontii*) (Gallaway Consulting 2005; EcoSynthesis 2006)

Riparian habitat occurs along Wolf Creek and its tributaries. Dominant plant species in the riparian areas include white alder (*Alnus rhombifolia*) and various willows (*Salix laevigata*, *S. lasiolepis*, and possibly others). Other vegetation associated with the drainages includes valley oak (*Quercus lobata*), Himalayan blackberry, and bigleaf maple (*Acer macrophyllum*).

Wildlife Movement Corridors

Wildlife movement zones are important for the movement of migratory wildlife populations. Corridors provide foraging opportunities and shelter during migration. Generally, wildlife movement zones are established migration routes for many species of wildlife. Movement corridors often occur in open areas or riverine habitats that provide a clear route for migration in addition to supporting ample food and water sources during movement. Wildlife movement corridors are not present within the study area, as open areas and riverine habitat are either lacking or highly disturbed/degraded due to past mill operations. Furthermore, the study area is largely surrounded by urban or commercial development, SR 49, and La Barr Meadows Road to the east. The study area is not located within any designated critical winter range for the Downieville/Nevada City deer herd (Gallaway Consulting 2005). Mule deer may be found north of the City; their habitat and migration passages are not expected to be disrupted by the proposed project.

3.3 BIOLOGICAL RESOURCES

Special-Status Species

Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk or actual risk to their persistence in a given area or across their native habitat. These species have been identified and assigned a status ranking by governmental agencies such as the California Department of Fish and Wildlife (CDFW) and US Fish and Wildlife Service (USFWS), and private organizations such as the California Native Plant Society (CNPS). The degree to which a species is at risk of extinction is the determining factor in the assignment of a status ranking. Some common threats to a species' or a population's persistence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. For the purposes of this EIR, special-status species are defined by the following codes:

- Listed, proposed, or candidates for listing under the Endangered Species Act (50 Code of Federal Regulations Section 17.11 – listed; 61 Federal Register Section 7591, February 28, 1996, candidates)
- Listed or proposed for listing under the California Endangered Species Act (Fish and Game Code (FGC) 1992 Section 2050 et seq.; 14 California Code of Regulations (CCR) Section 670.1 et seq.)
- Designated as Species of Special Concern by the CDFW
- Designated as Fully Protected by the CDFW (FGC Sections 3511, 4700, 5050, 5515)
- Protected under other regulations (i.e., local policies, Migratory Bird Treaty Act)
- Species that meet the definition of rare or endangered under CEQA (14 CCR Section 15380), including CNPS List 1 and 2

A list of special-status species and habitats that have the potential to occur within the study area or in the vicinity was prepared using information provided by the USFWS Sacramento Office's Species Lists (2013a), the USFWS Critical Habitat Portal (2013b), the CDFW's California Natural Diversity Database (CNDDDB) (2013a), the CNPS's Inventory of Rare and Endangered Plants of California (2013), the Berriman Ranch Site Biological Inventory (Ecosynthesis 2006), and the Special-status Plant Survey for Berriman Ranch Project (EcoSynthesis 2008).

A search of the USFWS Sacramento Office Species List database was performed for the Grass Valley, California, USGS 7.5-minute quadrangle (USGS 1995) and its surrounding quads (French Corral, Nevada City, Chicago Park, Colfax, North Bloomfield, Rough and Ready, Wolf, and Lake Combie) to identify special-status species under their jurisdiction that may be affected by the proposed project. In addition, a query of the USFWS Critical Habitat Portal was conducted to identify any designated critical habitat on or in the vicinity of the study area. The CNDDDB provided a list of known occurrences for special-status species within a 1-mile and 5-mile radius of the study area. Lastly, the CNPS database was queried to identify special-status plant species with the potential to occur in the quadrangles listed above. Please see **Appendix 3.3-1** for the raw data returned from the database queries.

The USFWS, CNDDDB, and CNPS database queries identified several special-status species with the potential to be impacted by the proposed project. **Figure 3.3-2, Previously Recorded Occurrences of Special-Status Species**, depicts CNDDDB occurrences data within 5 miles of the study area. **Table 3.3-1** provides a summary of all species identified in the search results, a description of the habitat requirements for each species, and conclusions regarding the potential for each species to be impacted by the proposed project. Only species for which a "may affect" determination was made will be discussed further (**Table 3.3-1**).

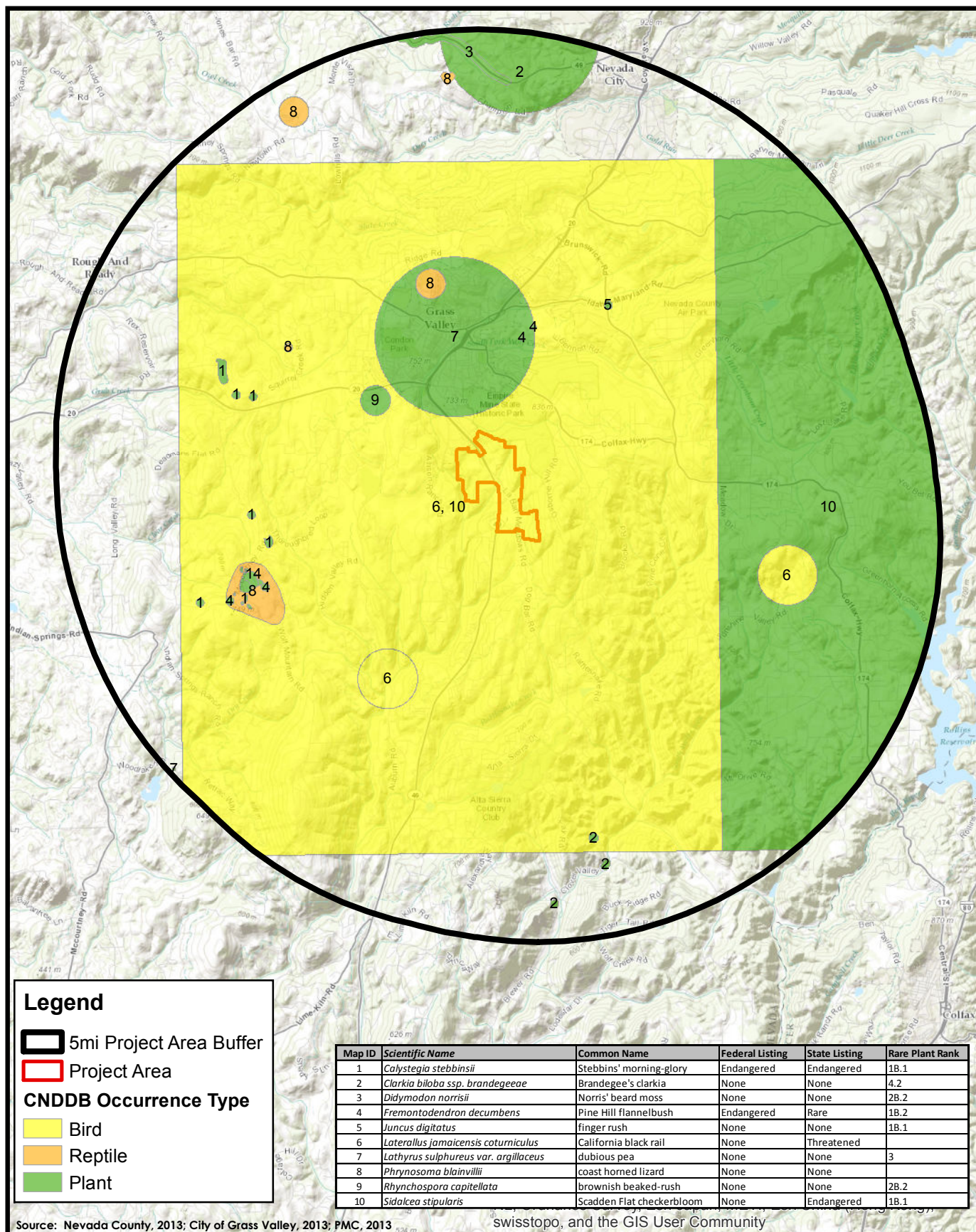


Figure 3.3-2
Previously Recorded Occurrences of Special-status Species
within 5 miles of the Project Area

Special-Status Plants

Eleven special-status plant species have the potential to occur in the study area, including brownish beaked-rush (*Rhynchospora capitellata*), Cantelow's lewisia (*Lewisia cantelovii*), elongate copper moss (*Mielichhoferia elongate*), finger rush (*Juncus digitatus*), inundated bog-club moss (*Lycopodiella inundata*), Norris' beard moss (*Didymodon norrisii*), Pine Hill flannelbush (*Fremontodendron decumbens*), Red Hills soaproot (*Chlorogalum grandiflorum*), Scadden Flat checkerbloom (*Sidalcea stipularis*), Sierra blue grass (*Poa sierra*), and Stebbins' morning glory (*Calystegia stebbinsi*). Both Scadden Flat checkerbloom and brownish beaked-rush have been found within 1 mile of the study area (CDFW 2013a).

Special-Status Wildlife

Four special-status wildlife species have the potential to occur in the study area, including coast horned lizard (*Phrynosoma blainvillii*), California red-legged frog (*Rana draytonii*), California black rail (*Laterallus jamaicensis coturniculus*), and fisher (*Martes pennanti*). There is one occurrence of California black rail within 1 mile of the study area (CDFW 2013a).

According to the *Opportunity and Constraints Analysis, Crestview Smith/State Route 49 Interchange Study* (PMC 2004), Gallaway Consulting consulted with the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) on May 13, 2004, for information regarding the potential occurrence of special-status anadromous fishes near the study area. Wolf Creek runs along the study area's western boundary and is the stream that drains the entire study area. Michael Tucker, senior fisheries biologist with NOAA Fisheries, reported that the Wolf Creek system is not an anadromous fishery. Therefore, the proposed project would not impact special-status anadromous fish or their habitat.

3.3 BIOLOGICAL RESOURCES

TABLE 3.3-1
SUMMARY OF SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA VICINITY

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present/Absent	Rationale
Plants							
<i>Rhynchospora capitellata</i>	brownish-beaked rush	–	–	2.2	Meadows, seeps, marshes, swamps, and mesic lower and upper montane coniferous forests. Blooms: July–August. Elevation: 45–2,000 meters. (CNPS 2013)	P	May affect. Potential suitable habitat present.
<i>Lewisia cantelovii</i>	Cantelow's lewisia	–	–	1B.2	Mesic, granitic, and sometimes serpentinite seeps, in broadleafed upland forest, chaparral, cismontane woodland, and lower coniferous forest. Blooms: May–Oct. Elev: 330–1,370 meters. (CNPS 2013)	P	May affect. Potential suitable habitat present.
<i>Mielichhoferia elongata</i>	elongate copper moss	–	–	2.2	Metamorphic rock, usually vernal mesic, cismontane woodland. Elev: 500–1,300 meters. (CNPS 2013)	P	May affect. Potential suitable habitat present.
<i>Juncus digitatus</i>	finger rush	–	–	1B.1	Openings in cismontane woodland and lower montane coniferous forest, and xeric vernal pools. Blooms: April–June. Elev: 660–790 meters. (CNPS 2013).	P	May affect. Potential suitable habitat present.
<i>Monardella follettii</i>	Follet's monardella	–	–	1B.2	Lower montane coniferous forest in rocky, serpentinite soil. Blooms: June–September. Elevation: 600–2,000 meters. (CNPS 2013)	A	No effect. Suitable soils not present.
<i>Lycopodiella inundata</i>	inundated bog club-moss	–	–	2.2	Coastal bogs and fens, mesic lower montane coniferous forests, and marshes and swamps on lake margins. Blooms: June–Sept. Elev: 5–1,000 meters. (CNPS 2013)	P	May affect. Potential suitable habitat present.
<i>Didymodon norrisii</i>	Norris' beard moss	–	–	2.2	On rock, in intermittently mesic areas, in cismontane woodland and lower montane coniferous forest. Elev: 600–1,973 meters. (CNPS 2013)	P	May affect. Potential suitable habitat present.

3.3 BIOLOGICAL RESOURCES

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present/Absent	Rationale
<i>Fremontodendron decumbens</i>	Pine Hill flannelbush	FE	SR	1B.2	Chaparral and cismontane woodland on rocky gabbroic or serpentinite soil. Blooms: April–July. Elev: 425–760 meters. (CNPS 2013)	P	May affect. Potential suitable habitat present.
<i>Chlorogalum grandiflorum</i>	Red Hills soaproot	–	–	1B.2	Serpentinite, gabbroic and other soils, in chaparral, cismontane woodland, and lower montane coniferous forests. Blooms: May–June. Elev: 245–1,240 meters. (CNPS 2013)	P	May affect. Potential suitable habitat present.
<i>Sidalcea stipularis</i>	Scadden Flat checkerbloom	–	SE	1B.1	Montane freshwater swamps and marshes. Blooms: July–August. Elev: 700–730 meters (CNPS 2013)	P	May affect. Potential suitable habitat present.
<i>Poa sierrae</i>	Sierra blue grass	–	–	1B.3	Openings in lower montane coniferous forest. Blooms: April–June. Elev: 365–1,500 meters. (CNPS 2013)	P	May affect. Potential suitable habitat present.
<i>Calystegia stebbinsii</i>	Stebbins' morning glory	FE	SE	1B.1	Cismontane woodland and openings in chaparral. Associated with gabbroic or serpentinite soil. Blooms: April–July. Elev: 185–1,090 meters. (CNPS 2013)	P	May affect. Potential suitable habitat present.
Invertebrates							
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	FT	–		Found only in vernal pools and ephemeral wetlands. Distributed throughout the Central Valley, including Sacramento County. (USFWS 2005)	A	No effect. Suitable habitat not present.
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	FT	–		Dependent on host plant, elderberry (<i>Sambucus</i> spp.), which generally grows in riparian woodlands and upland habitats of the Central Valley. Current distribution in the Central Valley from Shasta County to Fresno County. (USFWS 1999)	A	No effect. Project outside species range.

3.3 BIOLOGICAL RESOURCES

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present/Absent	Rationale
<i>Lepidurus packardii</i>	vernal pool tadpole shrimp	FE	–		Wide variety of ephemeral wetland habitats, including vernal pools. Distributed throughout Central Valley and San Francisco Bay area. (USFWS 2005)	A	No effect. Suitable habitat not present.
Fish							
<i>Hypomesus transpacificus</i>	delta smelt	FT	SE		Distribution includes the Sacramento River below Isleton, San Joaquin River below Mossdale, and Suisun Bay. Spawning areas include the Sacramento River below Sacramento, Mokelumne River system, Cache Slough, the delta, and Montezuma Slough. (USFWS 1996)	A	No effect. Project outside species range.
<i>Oncorhynchus mykiss</i>	Central Valley steelhead	FT	–		Currently found in the upper Sacramento River and its tributaries, including Antelope, Deer, and Mill creeks and the Yuba River. May exist in Big Chico and Butte creeks. Small populations found in the American, Feather, Stanislaus, Mokelumne and Calaveras rivers. (NMFS 2009)	A	No effect. Project outside species range.
<i>Oncorhynchus tshawytscha</i>	Central Valley chinook salmon	FT	ST		Currently found in the Sacramento-San Joaquin River Delta, the Sacramento River and its tributaries, including American, Yuba and Feather rivers, and Mill, Deer, and Butte creeks. (NMFS 2009)	A	No effect. Project outside species range.
Amphibians							
<i>Rana draytonii</i>	California red-legged frog	FT	SSC		Inhabits quiet pools of streams, marshes, and occasionally ponds. Occurs along the Coast Ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges, usually below 1,200 meters (3,936 feet). (CDFW 2013b)	P	May affect. Potential suitable habitat present.

3.3 BIOLOGICAL RESOURCES

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present/Absent	Rationale
Reptiles							
<i>Phrynosoma blainvillii</i>	coast horned lizard	–	SSC		Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats. Ranges up to 1,219 meters (4,000 feet) in the Sierra Nevada foothills. (CDFW 2013b)	P	May affect. Potential suitable habitat present.
Birds							
<i>Laterallus jamaicensis coturniculus</i>	California black rail	–	ST		Rarely seen, scarce, yearlong resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay area, Sacramento-San Joaquin Delta, coastal Southern California at Morro Bay and a few other locations, the Salton Sea, and lower Colorado River area. (CDFW 2013b)	P	May affect. Potential suitable habitat present.
Mammals							
<i>Martes pennanti</i>	fisher	FC	SSC		Large areas of mature, dense forest stands with snags and greater than 50% canopy closure. Uncommon permanent resident of the Sierra Nevada, Cascades, and Klamath mountains; also found in a few areas in the North Coast Ranges. (CDFW 2013b)	P	May affect. Potential suitable habitat present.
Federal & State Status		CNPS Rare Plant Rank					
(FE) Federal Endangered		<i>Rareness Ranks</i>					
(FT) Federal Threatened		(1A) Presumed Extinct in California					
(FC) Federal Candidate		(1B) Rare, Threatened, or Endangered in California and Elsewhere					
(SE) State Endangered		(2) Rare, Threatened, or Endangered in California, But More Common Elsewhere					
(ST) State Threatened		<i>Threat Ranks</i>					
(SR) State Rare		(0.1) Seriously threatened in California					
(SSC) State Species of Special Concern		(0.2) Fairly threatened in California					
(FP) Fully Protected		(0.3) Not very threatened in California					

3.3 BIOLOGICAL RESOURCES

Potential Special-Status Plant Species Occurrences

The database searches revealed the potential for 11 special-status plant species to occur in the study area. Each special-status plant species considered in the impact analysis is described below based on the data obtained from the CNPS Inventory of Rare and Endangered Plants of California (2013).

Brownish Beaked-Rush (*Rhynchospora capitellata*)

Brownish beaked-rush is a perennial herb found in numerous states across the country. It has a CNPS rare plant rank of 2.2 and no federal or state listing. This species blooms from July through August and ranges in elevation from 148 to 6,562 feet (45 to 2,000 meters). It grows in a variety of mesic habitats, including meadows and seeps, marshes and swamps, and mesic areas in upper and lower montane coniferous forest. Brownish-beaked rush is threatened by grazing and development. There is one record of brownish beaked-rush within 1 mile of the study area, and no additional occurrences when the radius is increased to 5 miles (CDFW 2013a). The presence of potentially suitable habitat and the presence of an occurrence within 5 miles of the study area results in the potential for this species to be impacted by project-related activities.

Cantelow's Lewisia (*Lewisia cantelovii*)

Cantelow's lewisia has a CNPS rare plant rank of 1B.2 and no federal or state status. This plant is a perennial herb endemic to California. Cantelow's lewisia is typically found in broadleaved upland forest, chaparral, cismontane woodland, and mesic lower montane coniferous forest on granitic soils and sometimes serpentinite seeps. This species typically flowers from May to October and ranges in elevation from 1,083 to 4,495 feet (330 to 1,370 meters). Cantelow's lewisia is threatened by horticultural collecting and road maintenance, and possibly by mining and logging. There is no record of this species occurring within 5 miles of the study area (CDFW 2013a); however, the chaparral and conifer forest areas within the study area provide suitable habitat for this species.

Elongate Copper Moss (*Mielichhoferia elongate*)

Elongate copper moss has a CNPS rare plant rank of 2.2 and no federal or state status. This moss is found in California, Oregon, Colorado, and Tennessee. This species is typically found in cismontane woodlands on metamorphic rock and usually in vernal mesic areas. Elongate copper moss ranges in elevation from 1,640 to 4,265 feet (55 to 1,300 meters). There are no CNDDDB records of this species occurring within 5 miles of the study area (CDFW 2013a); however, the vernal mesic areas within the study area provide suitable habitat for this species.

Finger Rush (*Juncus digitatus*)

Finger rush is an endemic California annual herb that blooms from April through June. Finger rush is not formally listed, but it is a CNPS 1B.1 plant. This species is found in xeric vernal pools and in openings in cismontane woodland and lower montane coniferous forests. It can be found at elevations ranging from 2,165 to 2,592 feet (660 to 790 meters). This species is threatened by development, hydrological alterations, and mining. Finger rush is known from two occurrences in Shasta County and one occurrence in Nevada County (CNPS 2013). There is one previously recorded occurrence of this species within a 5-mile radius of the study area (CDFW 2013a). In addition, the conifer forest areas in the study area provide suitable habitat for this species.

Inundated Bog Club-Moss (*Lycopodium inundatum*)

Inundated bog club-moss has a CNPS rare plant rank of 2.2 and no federal or state status. This plant is a rhizomatous herb that is found in numerous states across the country. Inundated bog club-moss is typically found in bogs and fens along coastal areas, mesic lower montane coniferous forests, and marshes and swamps along lake margins. This species typically flowers from June to September and ranges in elevation from 16 to 3,281 feet (5 to 1,000 meters). Inundated bog club-moss is potentially threatened by future mining. In California, this species is known from only three occurrences: two in Humboldt County and one in Nevada County. The Nevada County occurrence is not within 5 miles of the study area; however, the wetland areas within the conifer forest in the study area provide suitable habitat for this species.

Norris' Beard Moss (*Didymodon norrisii*)

Norris' beard moss has a CNPS rare plant rank of 2.2 and federal or state status. This moss occurs in Oregon and in numerous California counties. This species is typically found in cismontane woodland and lower montane coniferous forest on rock and in intermittently mesic areas. It ranges in elevation from 1,969 to 6,473 feet (600 to 1,973 meters). Norris' beard moss is potentially threatened by road maintenance, logging, and road construction. There is one record of this species occurring within 5 miles of the study area (CDFW 2013a). In addition, the mesic areas in the conifer forest within the study area provide suitable habitat for this species.

Pine Hill Flannelbush (*Fremontodendron decumbens*)

Pine Hill flannelbush is a perennial evergreen shrub that blooms from April through July. This species is federally listed as endangered, is considered rare by the state, and has a CNPS rare plant ranking of 1B.2. Pine Hill flannelbush is often found growing on rocky outcrops in gabbroic or serpentinite soils. It is associated with chaparral and cismontane woodland habitats at elevations between 1,394 and 2,493 feet (425 to 760 meters). Pine Hill flannelbush is threatened by development and alteration of fire regimes. There are three records of this species within a 5-mile radius of the study area (CDFW 2013a); however, the identity of these plants is uncertain (CNPS 2013). The only confirmed population is around Pine Hill Preserve in El Dorado County. The woodland and chaparral areas within the study area may provide suitable habitat for this species; however, it remains uncertain whether Pine Hill flannelbush actually occurs in Nevada County.

Red Hills Soaproot (*Chlorogalum grandiflorum*)

Red Hills soaproot has a CNPS rare plant rank of 1B.2 and no federal or state status. This species is a bulbiferous herb that blooms from May through June and is endemic to California. Red Hills soaproot is typically found in chaparral, cismontane woodland, and lower montane coniferous forest on serpentinite, gabbroic, and other soils. It ranges in elevation from 804 to 4,068 feet (245 to 1,240 meters). This species is threatened by development, mining, road construction and vehicles. In addition, it may be threatened by trail maintenance, logging and non-native plants. There are no CNDDDB records of this species occurring within 5 miles of the study area (CDFW 2013a); however, the chaparral and conifer forest areas within the study area provide suitable habitat for this species.

Scadden Flat Checkerbloom (*Sidalcea stipularis*)

Scadden Flat checkerbloom is state listed as endangered, has no federal status, and is a CNPS List 1B plant. This plant is a rhizomatous herb and is a Nevada County endemic. Scadden Flat

3.3 BIOLOGICAL RESOURCES

checkerbloom typically grows in montane freshwater marshes and swamps. This species typically blooms from July to August and grows at elevations between 2,297 and 2,395 feet (700 to 730 meters). Scadden Flat checkerbloom is known from only two occurrences, one of which is within 1 mile of the study area. Both occurrences are within 5 miles of the study area (CDFW 2013a). The wetland areas in the study area provide potentially suitable habitat for Scadden Flat checkerbloom.

Stebbins' Morning Glory (*Calystegia stebbinsii*)

Stebbins' morning glory is endemic to California and is listed as endangered by federal and state agencies. In addition, it has a CNPS rare plant rank of 1B.1. This species is a perennial rhizomatous herb that blooms in April through July. It is typically found in cismontane woodland and openings in chaparral at elevations ranging from 607 to 3,576 feet (185 to 1,090 meters). Stebbins' morning glory has a strong affinity for gabbroic or serpentinite soils. This species is threatened by development, vehicles, road maintenance, clearing, and alteration of fire regimes. Stebbins' morning glory is known from fewer than 20 occurrences, none of which are within a 5-mile radius of the study area (CDFW 2013a). Presence of this species has only been recorded in two counties: Nevada and El Dorado. The woodland and chaparral areas within the study area provide potentially suitable habitat for the morning glory.

Potential Special-Status Wildlife Species Occurrences

Based on database search results, three special-status wildlife species have the potential to occur in the study area. The foothill yellow-legged frog (*Rana boylei*) was also added to the discussion below due to the identification of a population within the study area during the habitat assessment. Each species that is considered in the impact analysis is described below based on the data obtained from CDFW's California Wildlife Habitat Relationships System Life History Accounts and Range Maps (2013b) as well as other published data sources, as cited.

California Black Rail (*Laterallus jamaicensis coturniculus*)

California black rails are state listed as a threatened species. This species typically occupies saline, brackish, or fresh emergent wetlands. Previously thought to be a predominantly coastal species, recent surveys have discovered populations throughout the Sierra Nevada foothills. California black rails have been found to be positively associated with large wetlands characterized by flowing water and dense vegetation. The current range extends from coastal California, through the Sacramento Valley, and into the northern Sierra Nevada foothills (Richmond et al. 2010).

California black rail is the only animal that has a CNDDDB record within 1 mile of the study area (CDFW 2013a). This record is from 2007 and occurred in a meadow/emergent wetland habitat associated with seepage from a pond. The presence of potentially suitable habitat and the presence of a CNDDDB occurrence within 1 mile of the study area results in the potential for this species to be impacted by project-related activities.

California Red-Legged Frog (*Rana draytonii*)

California red-legged frogs are federally listed as a threatened species and are a California species of special concern. This species typically occupies quiet pools of streams, marshes, and ponds. The current range extends along the Coast Range from Mendocino County south, as well as portions of the Sierra Nevada and Cascade ranges, typically below 3,936 feet amsl.

Permanent to nearly permanent pools are required to complete the 11- to 20-week larval development stage. Intermittent streams must retain surface water in pools year-round for the frogs to survive.

During the rainy season, some individuals may disperse overland, through upland habitats. Most of these movements occur at night and are straight-line, point to point. Dispersal distances have been documented between 0.25 mile and 2 miles. Dispersal movements do not appear associated with topography, vegetative cover, or riparian corridors (USFWS 2002).

Currently, six known extant populations of California red-legged frogs exist in the Sierra Nevada foothills. The nearest population is located in central Nevada County, approximately 3 miles northeast of Nevada City, south of Tyler Foote Road, and north of State Route 20 (USFWS 2010a). This population is associated with the Sailor Flat (NEV-1) critical habitat unit, as outlined in the USFWS final critical habitat designation, and is over 8 miles away from the study area. The study area is not hydrologically connected to this known occurrence nor is it located in the same watershed. Furthermore, the study area contains an abundance of bullfrogs (Foothill Associates 2002, 2003), which have been shown to have a negative correlation to red-legged frog presence (Hayes and Jennings 1988). Due to known dispersal distances (up to 2 miles) and the distance to known populations, it is not anticipated that this species occurs in the study area. Although the ponds within the study area contain habitat suitable for California red-legged frogs, it is unlikely that this species occurs in the study area, and it is not considered in the impact analysis.

Coast Horned Lizard (*Phrynosoma blainvillii*)

The coast horned lizard is a California species of special concern. Typical vegetative associations include valley-foothill hardwood, conifer, and riparian habitat as well as pine-cypress, juniper, and annual grassland. The current known distribution occurs in the Sierra Nevada foothills from Butte County, south to Kern County, and throughout the Central and Southern California coast. This species is typically found below 2,000 feet amsl in the north and 3,000 feet amsl in the south; however, the range may extend up to 4,000 feet amsl in the Sierra Nevada foothills and 6,000 feet in the Southern California mountain ranges.

The presence of potentially suitable habitat and the presence of five CNDDDB occurrences within 5 miles of the study area result in the potential for this species to be impacted by project-related activities.

Fisher (*Martes pennanti*)

The fisher is federally listed as a candidate species and is a California species of special concern. This species occupies mixed conifer-hardwood forests from approximately 1,970 to 8,520 feet in elevation in the Sierra Nevada. Non-forested habitats including open forest, grassland, and wetland habitats are largely avoided, and the species does not occur in high elevation sub-alpine and alpine environments. The current range for fisher in California is split into two disjunct populations. One population occurs in Northern California and southern Oregon, and the other population occurs in the southern Sierra Nevada. The southern Sierra Nevada population occupies the west slope of the mountain range from the Merced River south to the Greenhorn Mountains and includes portions of Mariposa, Madera, Fresno, Tulare, and Kern counties (USFWS 2010b). The current range for fishers in the Sierra Nevada doesn't extend to the study area; therefore, it is unlikely this species will be impacted by project-related activities.

3.3 BIOLOGICAL RESOURCES

3.3.2 REGULATORY FRAMEWORK

This section lists specific environmental review and consultation requirements and identifies permits and approvals that must be obtained from local, state, and federal agencies before implementation of the proposed project.

FEDERAL

Endangered Species Act

The Endangered Species Act of 1973 (ESA), as amended, provides protective measures for federally listed threatened and endangered species, including their habitats, from unlawful take (16 United States Code (USC) Sections 1531–1544). The ESA defines “take” to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Title 50, Part 222, of the Code of Federal Regulations (50 CFR Section 222) further defines “harm” to include “an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including feeding, spawning, rearing, migrating, feeding, or sheltering.”

ESA Section 7(a)(1) requires federal agencies to utilize their authority to further the conservation of listed species. ESA Section 7(a)(2) requires consultation with the USFWS and/or the National Marine Fisheries Service (NMFS) if a federal agency undertakes, funds, permits, or authorizes (termed the federal nexus) any action that may affect endangered or threatened species, or designated critical habitat. For projects that may result in the incidental “take” of threatened or endangered species, or critical habitat, and that lack a federal nexus, a Section 10(a)(1)(b) incidental take permit can be obtained from the USFWS and/or the NMFS.

Clean Water Act, Section 404

The basis of the Clean Water Act (CWA) was established in 1948; however, it was referred to as the Federal Water Pollution Control Act. The act was reorganized and expanded in 1972 (33 USC Section 1251), and at this time the Clean Water Act became the act's commonly used name. The basis of the CWA is the regulation of pollutant discharges into waters of the United States, as well as the establishment of surface water quality standards.

CWA Section 404 (33 USC Section 1344) established the program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Under this regulation, certain activities proposed within waters of the United States require that a permit be obtained prior to initiation. These activities include, but are not limited to, placement of fill for the purposes of development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and bridges), and mining operations.

The primary objective of this program is to ensure that the discharge of dredge or fill material is not permitted if a practicable alternative to the proposed activities exists that results in less impact to waters of the United States, or the proposed activity would result in significant adverse impacts to these waters. To comply with these objectives a permittee must document the measures taken to avoid and minimize impacts to waters of the United States and provide compensatory mitigation for any unavoidable impacts.

The US Environmental Protection Agency (EPA) and the USFWS are assigned roles and responsibilities in the administration of this program; however, the US Army Corps of Engineers (USACE) is the lead agency in the administration of day-to-day activities, including issuance of permits. The agencies will typically assert jurisdiction over the following waters: (1) traditional navigable waters (TNW); (2) wetlands adjacent to TNWs; (3) relatively permanent waters (RPW) that are non-navigable tributaries to TNWs, and have relatively permanent flow or seasonally continuous flow (typically three months); and (4) wetlands that directly abut RPWs. Case-by-case investigations are usually conducted by the agencies to ascertain their jurisdiction over waters that are non-navigable tributaries and do not contain relatively permanent or seasonal flow, wetlands adjacent to the aforementioned features, and wetlands adjacent to but not directly abutting RPWs (USACE 2007). Jurisdiction is not generally asserted over swales or erosional features (e.g., gullies or small washes characterized by low-volume/short-duration flow events) or ditches constructed wholly within and draining only uplands that do not have relatively permanent flows.

The extent of jurisdiction within waters of the United States that lack adjacent wetlands is determined by the ordinary high water mark (OHWM). The OHWM is defined in 33 CFR Section 328.3(e) as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." Wetlands are further defined under 33 CFR Section 328.3 and 40 CFR Section 230.3 as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" and typically include "swamps, marshes, bogs, and similar areas." The *Corps of Engineers Wetland Delineation Manual* (1987 Manual) sets forth a standardized methodology for delineating the extent of wetlands under federal jurisdiction.

The 1987 Manual outlines three parameters that all wetlands, under normal circumstances, must contain positive indicators for to be considered jurisdictional. These parameters include (1) wetland hydrology, (2) hydrophytic vegetation, and (3) hydric soils (USACE 1987). In 2006, the USACE issued a series of Regional Supplements to address regional differences that are important to the functioning and identification of wetlands. The supplements present wetland indicators, delineation guidance, and other information that is specific to the region. The USACE requires that wetland delineations submitted after June 5, 2007, be conducted in accordance with both the 1987 Manual and the applicable supplement.

Clean Water Act, Section 401

Under CWA Section 401 (33 USC Section 1341), federal agencies are not authorized to issue a permit and/or license for any activity that may result in discharges to waters of the United States, unless a state or tribe where the discharge originates either grants or waives CWA Section 401 certification. CWA Section 401 provides states or tribes with the ability to grant, grant with conditions, deny, or waive certification. Granting certification, with or without conditions, allows the federal permit/license to be issued and remain consistent with any conditions set forth in the CWA Section 401 certification. Denial of the certification prohibits the issuance of the federal license or permit, and waiver allows the permit/license to be issued without state or tribal comment. Decisions made by states or tribes are based on the proposed project's compliance with EPA water quality standards as well as on applicable effluent limitations guidelines, new source performance standards, toxic pollutant restrictions, and any other appropriate

3.3 BIOLOGICAL RESOURCES

requirements of state or tribal law. In California, the State Water Resources Control Board (SWRCB) is the primary regulatory authority for CWA Section 401 requirements (additional details below).

Migratory Bird Treaty Act

Migratory birds are protected under the 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 majority of birds found in the study area are protected under the MBTA.

Bald and Golden Eagle Protection Act

The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are federally protected under the Bald and Golden Eagle Protection Act (16 USC Sections 668–668c). Under the act, it is illegal to take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export, or import at any time or in any manner a bald or golden eagle, alive or dead; or any part, nest, or egg of these eagles unless authorized by the Secretary of the Interior. Violations are subject to fines and/or imprisonment for up to one year. Active nest sites are also protected from disturbance during the breeding season.

STATE

California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Department of Fish and Wildlife has the responsibility for maintaining a list of endangered and threatened species (FGC Section 2070). The CDFW also maintains a list of “candidate species,” which are species formally noticed as being under review for potential addition to the list of endangered or threatened species, and a list of “species of special concern,” which serve as a 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, and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of CESA. “Take” of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from the CDFW would be in the form of an incidental take permit.

Porter-Cologne Water Quality Control Act

Porter-Cologne Water Quality Control Act of 1966 (California Water Code Section 13000 et seq.; CCR Title 23, Chapter 3, Subchapter 15) is the primary state regulation that addresses water quality. The requirements of the act are implemented by the SWRCB at the state level and at the local level by the Regional Water Quality Control Board (RWQCB). The RWQCB carries out planning, permitting, and enforcement activities related to water quality in California. The act

provides for waste discharge requirements and a permitting system for discharges to land or water. Certification is required by the RWQCB for activities that can affect water quality.

California Regional Water Quality Control Board

Clean Water Act, Section 401 Water Quality Certification

CWA Section 401 (33 USC Section 1341) requires that any applicant for a federal license or permit that may result in a pollutant discharge to waters of the United States obtain a certification that the discharge will comply with EPA water quality standards. The state or tribal agency responsible for issuance of the Section 401 certification may also require compliance with additional effluent limitations and water quality standards set forth in state/tribal laws. In California, the SWRCB is the primary regulatory authority for CWA Section 401 requirements.

The Central Valley RWQCB is responsible for enforcing water quality criteria and protecting water resources in the project area. In addition, the RWQCB is responsible for controlling discharges to surface waters of the state by issuing waste discharge requirements (WDR) or commonly by issuing conditional waivers to WDRs. The RWQCB requires that a project proponent obtain a CWA Section 401 water quality certification for CWA Section 404 permits issued by the USACE. A request for water quality certification (including WDRs) by the RWQCB and an application for a General Permit for Storm Water Discharges Associated with Construction Activities are prepared and submitted following completion of the CEQA environmental document, and submittal of the wetland delineation to the USACE.

Delegated Permit Authority

California has been delegated permit authority for the National Pollutant Discharge Elimination System permit program including stormwater permits for all areas except tribal lands. Issuance of CWA Section 404 dredge and fill permits remains the responsibility of the USACE; however, the state actively uses its CWA Section 401 certification authority to ensure CWA Section 404 permits are in compliance with state water quality standards.

State Definition of Covered Waters

Under California state law, "waters of the State" means "any surface water or groundwater, including saline waters, within the boundaries of the state." Therefore, water quality laws apply to both surface water and groundwater. After the US Supreme Court decision in *Solid Waste Agency of Northern Cook County v. US Army Corps of Engineers*, the Office of Chief Counsel of the SWRCB released a legal memorandum confirming the state's jurisdiction over isolated wetlands. The memorandum stated that under the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other waters of the State are subject to state regulation, and this includes isolated wetlands. In general, the SWRCB regulates discharges to isolated waters in much the same way as it does for waters of the United States, using Porter-Cologne rather than Clean Water Act authority.

California Department of Fish and Wildlife

Streambed Alteration Agreement (Sections 1600–1607 of the California Fish and Game Code)

State and local public agencies are subject to FGC Section 1602, which governs construction activities that will substantially divert or obstruct the natural flow or substantially change the bed,

3.3 BIOLOGICAL RESOURCES

channel, or bank of any river, stream, or lake designated as waters of the state by the CDFW. Under FGC Section 1602, a discretionary Streambed Alteration Agreement must be issued by the CDFW to the project proponent prior to the initiation of construction activities within lands under CDFW jurisdiction. As a general rule, this requirement applies to any work undertaken within the 100-year floodplain of a stream or river containing fish or wildlife resources.

Native Plant Protection Act

The Native Plant Protection Act (FGC Sections 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 CDFW). An exception in the act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify the CDFW and give that state agency at least 10 days to retrieve the plants before they are plowed under or otherwise destroyed (FGC Section 1913). Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

Birds of Prey

Under FGC Section 3503.5 it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey), 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.

Fully Protected Species

California statutes also afford “fully protected” status to a number of specifically identified birds, mammals, reptiles, and amphibians. These species cannot be “taken,” even with an incidental take permit. FGC Section 3505 makes it unlawful to “take” “any egret or egret, osprey, bird of paradise, goura, numidi, or any part of such a bird.” FGC Section 3511 protects from “take” the following fully protected birds: (a) American peregrine falcon (*Falco peregrinus anatum*); (b) brown pelican (*Pelecanus occidentalis*); (c) California black rail (*Laterallus jamaicensis coturniculus*); (d) California clapper rail (*Rallus longirostris obsoletus*); (e) California condor (*Gymnogyps californianus*); (f) California least tern (*Sterna albifrons browni*); (g) golden eagle (*Aquila chrysaetos*); (h) greater sandhill crane (*Grus canadensis tabida*); (i) light-footed clapper rail (*Rallus longirostris levipes*); (j) southern bald eagle (*Haliaeetus leucocephalus leucocephalus*); (k) trumpeter swan (*Cygnus buccinator*); (l) white-tailed kite (*Elanus leucurus*); and (m) Yuma clapper rail (*Rallus longirostris yumanensis*).

FGC Section 4700 identifies the following fully protected mammals that cannot be “taken”: (a) Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*); (b) bighorn sheep (*Ovis canadensis*), except Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*); (c) Guadalupe fur seal (*Arctocephalus townsendi*); (d) ring-tailed cat (genus *Bassariscus*); (e) Pacific right whale (*Eubalaena sieboldi*); (f) salt-marsh harvest mouse (*Reithrodontomys raviventris*); (g) southern sea otter (*Enhydra lutris nereis*); and (h) wolverine (*Gulo gulo*).

FGC Section 5050 protects from “take” the following fully protected reptiles and amphibians: (a) blunt-nosed leopard lizard (*Crotaphytus wislizenii silus*); (b) San Francisco garter snake (*Thamnophis sirtalis tetrataenia*); (c) Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*); (d) limestone salamander (*Hydromantes brunus*); and (e) black toad (*Bufo boreas exsul*).

FGC Section 5515 also identifies certain fully protected fish that cannot lawfully be “taken” even with an incidental take permit: (a) Colorado River squawfish (*Ptychocheilus lucius*); (b) thicktail chub (*Gila crassicauda*); (c) Mohave chub (*Gila mohavensis*); (d) Lost River sucker (*Catostomus luxatus*); (e) Modoc sucker (*Catostomus microps*); (f) shortnose sucker (*Chasmistes brevirostris*); (g) humpback sucker (*Xyrauchen texanus*); (h) Owens River pupfish (*Cyprinodon radiosus*); (i) unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*); and (j) rough sculpin (*Cottus asperimus*).

NON-GOVERNMENTAL AGENCY

California Native Plant Society

The California Native Plant Society is a non-governmental agency that classifies native plant species according to current population distribution and threat level, in regard to extinction. These data are utilized by CNPS to create and maintain a list of native California plants that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (CNPS 2013). Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review.

The following identifies the definitions of the CNPS listings:

List 1A: Plants believed to be extinct

List 1B: Plants that are rare, threatened, or endangered in California and elsewhere

List 2: Plants that are rare, threatened, or endangered in California, but are more numerous elsewhere

All of the plant species on Lists 1 and 2 meet the requirements of the Native Plant Protection Act Section 1901, Chapter 10, or FGC Sections 2062 and 2067 and are eligible for state listing. Plants appearing on List 1 or 2 are considered to meet the criteria of CEQA Section 15380, and effects on these species are considered “significant.” Plants on List 3 (plants about which we need more information) and/or List 4 (plants of limited distribution), as defined by the CNPS, are not currently protected under state or federal law. Therefore, no detailed descriptions or impact analysis was performed on species containing these classifications.

LOCAL

City of Grass Valley General Plan

The City of Grass Valley General Plan (1999a) was adopted in 1999 and includes a Conservation and Open Space Element that contains goals, objectives, policies, actions, and strategies applicable to biological resources.

A discussion of the project's consistency with applicable General plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

3.3 BIOLOGICAL RESOURCES

City of Grass Valley Preservation and Protection Ordinance, Chapter 12.36, Tree Ordinance

Chapter 12.36 of the Grass Valley Municipal Code provides for tree preservation and protection. Trees that are protected include heritage trees, as defined and listed by the City; trees 8 caliper inches or larger in diameter at breast height (DBH) 54 inches above ground height on private lands; and significant trees or street trees greater than 18 caliper inches in DBH on any public lands or within the public right-of-way. A significant tree is any tree that measures 18 caliper inches or larger in DBH 54 inches above ground height. Activities that are exempt include the removal of dead trees and those trees that are less than 8 inches in DBH, excluding those street trees within the public right-of-way planted at the City's direction or required as conditions of approval with landscape improvements for planning actions. Tree removal, except for exempt activities, requires a construction-related tree removal permit and a tree protection plan. The City requires that removal of trees will not have a significant negative impact on the tree densities, sizes, canopies, and species diversity within 200 feet of the subject property. The City will grant an exception to this criterion when alternatives to the tree removal have been considered and no reasonable alternative exists to allow the property to be used as permitted by the City Development Code.

City of Grass Valley Development Code, Chapter 17.50, Creek and Riparian Resource Protection

Chapter 17.50 of the Grass Valley Development Code provides standards for protection of creeks and riparian corridors. The Development Code applies a buffer between watercourses and adjacent development in order to retain the natural features of watercourses in the City. If a project overlaps with a 100-year floodplain, a streambed analysis is required. Generally, the watercourse setback for structures is 30 feet from the top of the bank. However, there are specific setbacks that depend on lot depth which apply specifically to all properties being annexed into the City.

The Development Code provides for a design review process wherein the final design of the specific projects is reviewed by the Development Review Committee and/or the Planning Commission prior to issuance of a building permit or grading permit for the project.

City of Grass Valley Community Design Guidelines

The City's Community Design Guidelines provide design professionals, property owners, developers, and citizens with an understanding of the City's design expectations for new development in the community. The guidelines' central theme is to preserve and enhance Grass Valley's distinct character and quality of life. They include design principles that further implement the goals of the General Plan. The guidelines work in conjunction with the Development Code and apply to commercial, industrial, office, and multi-family projects. Each chapter of the guidelines includes sections with specific goals and principles that address site planning and building placement to protect natural resources such as trees, watercourses, wetlands, open spaces, and topography; grading and hillside development; screening; landscaping; placement of public spaces; architectural design; streetscape design; circulation and parking; exterior lighting; and signage. The Development Review Committee and/or the Planning Commission review each development project for consistency with the City's Community Design Guidelines.

3.3.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines Appendix G thresholds of significance. The City concludes that a proposed project is expected to result in a significant effect if the project would:

- 1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the CDFW or the USFWS.
- 2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS.
- 3) 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.
- 4) 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.
- 5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- 6) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

METHODOLOGY

The impact assessment was based on the project description (Section 2.0), information described in the existing setting, and the standards of significance described above. The impact assessment discusses impacts of land uses and development consistent with the proposed project.

This impact analysis is organized by the significance criteria noted above: special-status plant and wildlife species, sensitive vegetation communities, federally protected wetlands, wildlife movement corridors, and compliance with local plans and policies or existing habitat conservation plans. Each impact category includes a description of the specific potential impacts, as well as avoidance and mitigation measures that can potentially reduce and mitigate potentially significant impacts. The reader is referred to Section 2.0, Project Description, for specific details on the project.

Habitat Assessment: Habitats/vegetation communities within the study area were defined based on CALVEG (USDA 2013) data, aerial photography, and past field studies within the study area (Foothill Associates 2000, 2002, 2003; Gallaway Consulting 2005; EcoSynthesis 2006, 2008).

Special-Status Species Assessment: For the analysis in this EIR, a species was determined to have potential to occur in the study area if its documented geographic range from the literature and

3.3 BIOLOGICAL RESOURCES

database search includes the project vicinity, and if suitable habitat for the species was identified within or near the study area. The CNDDDB was queried for a list of special-status plant and wildlife resources that are known to occur within a 1-mile and 5-mile radius of the study area (CDFW 2013a).

In addition, an informal USFWS species list for federally endangered, threatened, proposed, and candidate species that may occur in the vicinity of the Grass Valley, California, USGS 7.5-minute quadrangle and the eight surrounding quadrangles (French Corral, Nevada City, Chicago Park, Colfax, North Bloomfield, Rough and Ready, Wolf, and Lake Combie) was reviewed for species that could potentially be affected by the proposed project (USFWS 2013a).

Lastly, the CNPS electronic online inventory was also searched for rare or endangered (List 1A, List 1B, and List 2) plants that may occur within the quadrangles listed above (CNPS 2013). List 1A species are presumed extinct in California. List 1B species are considered rare or endangered in California and elsewhere. List 2 species are considered rare or endangered in California, but are more common elsewhere.

Critical Habitat: When the USFWS lists a species as threatened or endangered under the Endangered Species Act, areas of habitat considered essential to its conservation and survival may be designated as critical habitat. These areas may require special consideration and/or protection due to their ecological importance. Potential critical habitat designations in the general vicinity of the study area were checked using the USFWS Critical Habitat Portal (2013b). The nearest designated critical habitat is approximately 7 miles northeast of the study area. This critical habitat is designated for the California red-legged frog and is within the South Yuba Hydrologic Area. The study area is not hydrologically connected to this designated critical habitat area nor is it located in the same watershed.

PROJECT IMPACTS AND MITIGATION MEASURES

Impacts to Candidate, Sensitive, or Special-Status Species

The species or species groups identified below were determined to have the potential to be substantially adversely affected by future development resulting from project implementation, either directly or through habitat modification. Impacts to these species would be considered a potentially significant impact. However, mitigation measures are presented below to reduce the potential impacts to a less than significant level.

Special-Status Plant Species (Standard of Significance 1)

Impact 3.3.1 Land uses and development consistent with the proposed project could result in a substantial adverse effect, either directly or through habitat modifications, on special-status plant species. This impact is considered **potentially significant**.

Potentially suitable habitat for 11 special-status plant species occurs within the study area. Therefore, implementation of land uses and development consistent with the proposed project may result in adverse impacts to these species should they be present in areas proposed for future disturbance. In order to reduce potential impacts to a **less than significant** level, implementation of mitigation measure **MM 3.3.1** shall be implemented for future development proposals within the project area.

Mitigation Measures**MM 3.3.1**

Rare Plant Surveys. The project applicant for each future development project proposed within the project area shall retain a qualified biologist to perform focused surveys to determine the presence/absence of special-status plant species with potential to occur in and adjacent to (within 100 feet, where appropriate) the proposed impact area, including construction access routes. These surveys shall be conducted in accordance with the *Guidelines for Assessing Effects of Proposed Developments on Rare Plants and Plant Communities* (Nelson 1994). These guidelines require that rare plant surveys be conducted at the proper time of year when rare or endangered species are both evident and identifiable. Field surveys shall be scheduled to coincide with known flowering periods and/or during appropriate developmental periods that are necessary to identify the plant species of concern.

If any state- or federally listed CNPS List 1 or CNPS List 2 plant species are found in or adjacent to (within 100 feet) the proposed impact area during the surveys, these plant species shall be avoided to the extent possible and the following mitigation measures shall be implemented:

1. In some cases involving state-listed plants, it may be necessary to obtain an incidental take permit under Fish and Game Code Section 2081. The applicant shall consult with the CDFW to determine whether a 2081 permit is required, and obtain all required authorizations prior to initiation of ground-breaking activities.
2. Before the approval of grading plans or any ground-breaking activity within the study area, the applicant shall submit a mitigation plan concurrently to the CDFW and the USFWS for review and comment. The plan shall include mitigation measures for the population(s) to be directly affected. Possible mitigation for impacts to special-status plant species can include implementation of a program to transplant, salvage, cultivate, or re-establish the species at suitable sites (if feasible), through the purchase of credits from an approved mitigation bank, or through an in-lieu fee program, if available. The actual level of mitigation may vary depending on the sensitivity of the species, its prevalence in the area, and the current state of knowledge about overall population trends and threats to its survival. The final mitigation strategy for directly impacted plant species shall be determined by the CDFW and the USFWS through the mitigation plan approval process.
3. Any special-status plant species that are identified adjacent to the study area, but not proposed to be disturbed by the project, shall be protected by barrier fencing to ensure that construction activities and material stockpiles do not impact any special-status plant species. These avoidance areas shall be identified on project plans.

Timing/Implementation: Prior to the initiation of construction activities

Enforcement/Monitoring: City of Grass Community Development Department

3.3 BIOLOGICAL RESOURCES

Coast Horned Lizard (Standard of Significance 1)

Impact 3.3.2 Land uses and development consistent with the proposed project could result in substantial adverse effects, either directly or through habitat modifications, to coast horned lizards, which would be considered a **potentially significant** impact.

Suitable habitat for the coast horned lizard occurs within the study area. In addition, five occurrences of the coast horned lizard have been documented within 5 miles of the study area (CDFW 2013a). The presence of suitable habitat and documented occurrences in proximity to the study area result in the determination that implementation of future development related to the project may result in adverse impacts to this species, should it be present in areas proposed for disturbance. In order to reduce potential impacts to a **less than significant** level, implementation of mitigation measure **MM 3.3.2** shall be implemented for all future development projects within the project area.

Mitigation Measures

MM 3.3.2 **Coast Horned Lizard Survey.** Project applicants for each future development project proposed within the project area shall retain qualified biologists to determine if suitable habitat for this species occurs within 250 feet of the proposed impact area, including construction access routes as part of submittals of tentative maps and /or improvement plans. If suitable habitat exists, development agreements will require preconstruction surveys to be performed by a qualified biologist in a manner to maximize detection of coast horned lizards (i.e., during warm weather, walking slowly) prior to any grading activity. If any coast horned lizards are discovered within the work areas, they shall be actively moved or passively encouraged to leave the work area. Workers shall drive slowly when driving overland, within suitable habitat areas, to allow any lizards to move out of the way of the vehicles.

Timing/Implementation: Prior to the initiation of construction activities

Enforcement/Monitoring: City of Grass Valley Community Development Department

Migratory Birds and Raptors (Standard of Significance 1)

Impact 3.3.3 Land uses and development consistent with the proposed project could result in the loss of populations or essential habitat for California black rail and other special-status avian species, including raptors. This impact is considered **potentially significant**.

Suitable habitat for the California black rail may occur within the study area. In addition, the study area provides nesting and/or foraging habitat for migratory birds and raptors not identified in **Table 3.3-1**. All native breeding birds (except game birds during the hunting season), regardless of their listing status, are protected under the Migratory Bird Treaty Act. Vegetation clearing during the nesting season could result in direct impacts to nesting birds should they be present. Furthermore, noise and other human activity may result in nest abandonment if nesting birds are present within 200 feet (500 feet for raptors) of a work site. Due to the presence of suitable habitat for these species, future development consistent with the proposed project may

result in adverse impacts should they be present in areas proposed for disturbance. In order to reduce potential impacts to a **less than significant** level, implementation of mitigation measures **MM 3.3.3a and 3.3.3b** is required

Mitigation Measures

MM 3.3.3a **Migratory Bird Surveys.** If clearing and/or construction activities for future development projects within the project area will occur during the migratory bird nesting season (April 15–August 15), preconstruction surveys to identify active migratory bird nests shall be conducted by a qualified biologist within 14 days of construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites within the proposed impact area, including construction access routes and a 200-foot buffer (if feasible).

If active nest sites are identified within 200 feet of project activities, the applicant shall impose a limited operating period (LOP) for all active nest sites prior to commencement of any project construction activities to avoid construction or access-related disturbances to migratory bird nesting activities. An LOP constitutes a period during which project-related activities (i.e., vegetation removal, earth moving, and construction) will not occur, and will be imposed within 100 feet of any active nest sites until the nest is deemed inactive. Activities permitted within and the size (i.e., 100 feet) of LOPs may be adjusted through consultation with the CDFW and/or the City.

Timing/Implementation: *Prior to the initiation of construction activities*

Enforcement/Monitoring: *City of Grass Valley Community Development Department*

MM 3.3.3b **Raptor Surveys.** If clearing and/or construction activities for future development projects will occur during the raptor nesting season (January 15–August 15), preconstruction surveys to identify active raptor nests shall be conducted by a qualified biologist within 14 days of construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites within the proposed impact area, including construction access routes and a 500-foot buffer (if feasible).

If active nest sites are identified within 500 feet of project activities, the applicant shall impose an LOP for all active nest sites prior to commencement of any project construction activities to avoid construction or access-related disturbances to nesting raptors. An LOP constitutes a period during which project-related activities (i.e., vegetation removal, earth moving, and construction) will not occur, and will be imposed within 250 feet of any active nest sites until the nest is deemed inactive. Activities permitted within and the size (i.e., 250 feet) of LOPs may be adjusted through consultation with the CDFW and/or the City.

Timing/Implementation: *Prior to the initiation of construction activities*

Enforcement/Monitoring: *City of Grass Valley Community Development Department*

3.3 BIOLOGICAL RESOURCES

Impacts to Riparian Habitat or Sensitive Natural Communities (Standard of Significance 2)

Impact 3.3.4 Land uses and development consistent with the proposed project may result in the disturbance, degradation, and/or removal of sensitive biological communities. This impact is considered **potentially significant**.

Land uses and development consistent with the proposed project may result in the disturbance, degradation, and/or removal of wetlands and other waters of the United States that are considered sensitive habitats by resource agencies. Riparian habitat has been identified along Wolf Creek and its tributaries (EcoSynthesis 2006). The proposed project includes preserving approximately 117 acres of open space along Wolf Creek and other riparian corridors in the study area. It is anticipated that the placement of these large open space areas will help minimize impacts to riparian corridors and their associated resources. In addition, implementation of mitigation measure **MM 3.3.4** will ensure that any impacts to sensitive habitats or resources will be reduced to a **less than significant** level.

Mitigation Measures

MM 3.3.4 **No Net Loss of Riparian Habitat.** The project applicant for each future development project proposed within the project area shall ensure that there is no net loss of riparian vegetation. Mitigation can include on-site restoration or purchase of mitigation credits at a USACE-approved mitigation bank. Mitigation as required in regulatory permits issued through the CDFW, the USACE, or the RWQCB may be applied to satisfy this measure.

Evidence of compliance with this mitigation measure shall be provided to the appropriate agencies prior to construction and grading activities for future development in the project area.

Timing/Implementation: Prior to the initiation of construction activities

Enforcement/Monitoring: City of Grass Valley Community Development Department

Impacts to Jurisdictional Waters of the United States, Including Wetlands (Standard of Significance 3)

Impact 3.3.5 Land uses and development consistent with the proposed project may result in the loss of jurisdictional waters of the United States, including wetlands. This impact is considered **potentially significant**.

Implementation of the proposed project and associated future development may result in the loss, disturbance, or degradation of potential wetlands and other waters of the United States. Waters of the United States and other wetland features have been identified within the study area. As mentioned above, the proposed project includes setting aside large areas of open space, much of which overlaps with the sensitive aquatic areas that occur in the study area. It is anticipated that the placement of these large open space areas will help minimize impacts to waters of the United States. In addition, the City's General Plan, Development Code, and Community Design Guidelines include policies and ordinances that provide specific protection to watercourses.

If it is determined that fill of waters of the United States, including wetlands, would result from future development associated with this project, authorization for such fill shall be secured from the USACE through the CWA Section 404 permitting process prior to project implementation. If a CWA Section 404 permit were to be required from the USACE, a CWA Section 401 permit would be also required from the RWQCB. If it is determined by a qualified wetland biologist and through consultation with RWQCB that features that qualify as waters of the state would be affected, the applicant would be required to obtain an authorization from the RWQCB to fill/disturb these features prior to project implementation. Furthermore, construction-related impacts to water quality would be mitigated through a National Pollutant Discharge Elimination System (NPDES) permit.

Disturbance and/or loss of jurisdictional waters and wetlands from land uses and development consistent with the proposed project are considered potentially significant impacts; however, implementation of mitigation measure **MM 3.3.5** will reduce those impacts to a **less than significant** level.

Mitigation Measures

MM 3.3.5 **No Net Loss of Federally Protected Waters.** The City shall ensure that the project will result in no net loss of federally protected waters through impact avoidance, impact minimization, and/or compensatory mitigation, as determined in CWA Section 404 and 401 permits and/or 1602 Streambed Alteration Agreement. Evidence of compliance with this mitigation measure shall be provided prior to construction and grading activities for the proposed project.

Timing/Implementation: *Prior to the initiation of construction activities*

Enforcement/Monitoring: *City of Grass Valley Community Development Department*

Impacts to Migratory Corridors (Standard of Significance 4)

Impact 3.3.6 Land uses and development consistent with the proposed project are not expected to result in impacts to the movement of native resident or migratory fish or wildlife species or established migratory corridors. As such, there would be **no impact**.

Implementation of the proposed project would not result in the obstruction of the movement of migratory birds or other wildlife. Migratory birds or other wildlife species may use the habitats within the study area during migration; however, the study area does not provide adequate water resources, cover, and vegetation to be used as a migratory corridor for common and special-status wildlife species. In addition, the study area is not located within any designated critical winter range for the Downieville/Nevada City deer herd (Gallaway Consulting 2005). The CDFW Biogeographic Information & Observation System Habitat Connectivity Viewer (2013c) was reviewed to determine if the project site is located within an Essential Connectivity Area. The project does not occur within an Essential Connectivity Area. As such, **no impact** to the movements of any native resident or migratory wildlife corridors or the use of native wildlife nursery sites will occur as a result of the proposed project.

3.3 BIOLOGICAL RESOURCES

Mitigation Measures

None required.

Conflict with Local Policies and Ordinances (Standard of Significance 5)

Impact 3.3.7 Land uses and development consistent with the proposed project are not anticipated to conflict with any local policies and ordinances, including the City's General Plan, Development Code, and Community Design Guidelines. As such, there would be **no impact**.

To ensure projects comply with the City's standards and policies, the City verifies compliance with the adopted standards through the development review process and through subsequent environmental review of specific projects. Therefore, there would be **no impact**.

Mitigation Measures

None required.

Conflict with Conservation Plans (Standard of Significance 6)

Impact 3.3.8 Land uses and development consistent with the proposed project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or any adopted biological resources recovery or conservation plan of any federal or state agency. As such, there would be **no impact**.

The proposed project would not 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 adopted habitat conservation plans that overlap the study area. Therefore, the proposed project would not conflict with such plans, and **no impact** is anticipated.

Mitigation Measures

None required.

3.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The study area and the surrounding area of Nevada County as a whole must be considered for the purpose of evaluating land use conversion issues associated with biological resources on a cumulative level. In particular, this cumulative setting condition includes planned development under the current Land Use Element of the Nevada County General Plan (2010) and Grass Valley General Plan (1999a), existing land use conditions, and planned and proposed land uses in communities near the study area, as well as consideration of development patterns of communities in the rest of Nevada County. These land uses and developments have the potential to adversely affect the biological resources in the region and could contribute to the loss of potential habitat within the region. Future developments would require on- and off-site improvements to provide water, wastewater, storm drainage, solid waste disposal, and other

such services at Nevada County's or applicable City's required level of service. Anticipated development, public projects, and related improvements could contribute to the loss of potential habitat in the region.

Land uses and development consistent with the proposed project would not necessarily contribute incrementally to the cumulative loss of native plant communities, wildlife habitat values, special-status species and their potential habitat, and wetland/aquatic resources in the western Nevada County region. On a cumulative level, the change in land uses will contribute to a gain of potential habitat for special-status species including but not limited to rare plants, special-status amphibians, migratory birds, and raptors that currently inhabit the area or could inhabit the area in the future. In addition to potential direct impacts on biological resources from project-related activities, the increased human presence would be anticipated to cause potential indirect impacts. These could disturb breeding and foraging behavior of wildlife, and would result in a significant and unavoidable cumulative impact. The combined effect of all new developments approved or planned in the area would create a significant and unavoidable cumulative impact associated with increased human presence.

The study area has several biologically sensitive resources that could be impacted during future implementation of project-related activities. The on-site communities provide breeding habitat for special-status plants, migratory birds, raptors, and a variety of other common flora and fauna.

IMPACTS AND MITIGATION MEASURES

Cumulative Biological Resources Impacts (Standards of Significance 1 through 4)

Impact 3.3.9 Land uses and development consistent with the proposed project, in combination with other reasonably foreseeable projects in the region, could result in mortality and loss of habitat for special-status species, wetlands, and waters of the United States. However, the project proposes large areas of open space in areas currently proposed for development; thereby increasing open space areas and protecting biological resources in the region. Thus, this impact is considered **less than cumulatively considerable**.

Implementation of the proposed project may eventually result in degradation of habitat through a variety of future development actions which, when combined with other habitat impacts occurring from development in surrounding areas, would result in significant cumulative impacts. Future development in the vicinity of the study area would have an unknown and unquantifiable impact on special-status species, biologically sensitive habitats, and potentially jurisdictional wetlands and waters of the United States. Increased development and disturbance created by human activities could result in direct mortality, habitat loss, and deterioration of habitat suitability. However, the project proposes to set aside more than 25 percent of the study area, much of which is currently planned for development, and designate it as open space. Furthermore, these open space lands would protect many of the most biologically sensitive parts of the study area, including riparian and drainage corridors, steep slopes, and dense woodland. Though project-related activities may contribute incrementally to effects to biological resources, the project is in fact taking a proactive approach in protecting sensitive biological resources by converting land planned for development into open space. Thus, the impact is considered less than cumulatively considerable.

3.3 BIOLOGICAL RESOURCES

In addition, implementation of mitigation measures **MM 3.3.1** through **MM 3.3.6** will ensure the proposed project's impact will result in a **less than cumulatively considerable** contribution to the cumulative impacts by mitigating the project's contribution to impacts to special-status species and sensitive habitats.

Mitigation Measures

No additional mitigation required.

REFERENCES

- CDFW (California Department of Fish and Wildlife). 2013a. California Natural Diversity Database – July 2, 2013 update. Sacramento: CDFW Biogeographic Data Branch.
- . 2013b. California Wildlife Habitat Relationships System Life History Accounts and Range Maps (online edition). Sacramento: CDFW Biogeographic Data Branch. Accessed August 5. <http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx>.
- . 2013c. Biogeographic Information & Observation System Habitat Connectivity Viewer. Sacramento: CDFW Biogeographic Data Branch. Accessed August 5. <http://bios.dfg.ca.gov/>.
- City of Grass Valley. 1999a. *City of Grass Valley 2020 General Plan*.
- . 1999b. *City of Grass Valley 2020 General Plan Draft Environmental Impact Report*.
- CNPS (California Native Plant Society). 2013. Inventory of Rare and Endangered Plants (online edition, v8-01a). Sacramento: CNPS. Accessed August 5. <http://www.rareplants.cnps.org/>.
- EcoSynthesis Scientific & Regulatory Services, Inc. 2006. *Berriman Ranch Site Biological Inventory and Habitat Management Plan*. Prepared for SCO Planning and Engineering, Inc.
- . 2008. *Special-status Plant Survey for Berriman Ranch Project*. Prepared for SCO Planning and Engineering, Inc.
- EPA (US Environmental Protection Agency). 2013. Surf Your Watershed. Upper Bear Watershed Profile – 18020126. http://cfpub.epa.gov/surf/huc.cfm?huc_code=18020126.
- Foothill Associates. 2000. *Wetland Delineation, Bear River Mill, Nevada County, California*.
- . 2002. *Results of a Habitat Assessment for California Red-Legged Frogs for the South Hill Site, Nevada County*. Prepared for Ann Bowers, USFWS.
- . 2003. *Results of Surveys for California Red-Legged Frogs for the South Hill Project in Nevada County, California*. Prepared for Ann Bowers, USFWS.
- Gallaway Consulting, Inc. 2005. *Biological Resources Assessment, SouthHill Village, Nevada County, California*.
- Hayes, M. P., and M. R. Jennings. 1988. "Habitat Correlates of Distribution of the California Red-legged Frog (*Rana aurora draytonii*) and the Foothill Yellow-legged Frog (*Rana boylei*): Implications for Management." In *Management of Amphibians, Reptiles, and Small Mammals in North America*. R. C. Szaro, K. E. Severson, and D. R. Patton (eds). Gen. Tech Rep. RM166. Fort Collins, CO: USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, pp. 144–158.
- Mayer, K. E., and W. F. Laudenslayer, Jr. (eds.). 1988. *A Guide to Wildlife Habitats of California*. Sacramento: CDFG.

3.3 BIOLOGICAL RESOURCES

Nelson, J. R. 1994. "Guidelines for Assessing Effects of Proposed Developments on Rare Plants and Plant Communities," p. 29. In: M. Skinner and B. M. Pavlik (eds.), *Inventory of Rare and Endangered Vascular Plants of California*. Special Publication No. 1 (5th ed.). Sacramento: CNPS.

Nevada County. 2010. *General Plan Land Use Element*.

NMFS (National Marine Fisheries Service). 2009. *Public Draft Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of Central Valley Steelhead*. Sacramento: NMFS.

NRCS (Natural Resources Conservation Service). 2013. *United States Department of Agriculture Web Soil Survey 2.3* (online edition). Accessed July 9. <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.

PMC. 2004. *Opportunity and Constraints Analysis, Crestview Smith/State Route 49 Interchange Study*. Prepared for the Nevada County Transportation Commission.

Richmond, Orien M. W., S. K. Chen, B. B. Risk, J. Tecklin, and S. R. Beissinger. 2010. "California black rails depend on irrigation-fed wetlands in the Sierra Nevada foothills." *California Agriculture*, 64(2).

USACE (US Army Corps of Engineers). 1987. *Corps of Engineers Wetland Delineation Manual*. Technical Report Y-87-1. Vicksburg, MS: USACE Waterways Experiment Station.

———. 2007. *Jurisdictional Determination Form Instructional Guidebook*.

USDA (US Department of Agriculture). 1997. *Ecological Subregions of California*. Prepared by US Forest Service, Pacific Southwest Region. <http://www.fs.fed.us/r5/projects/ecoregions/m261eg.htm>.

———. 2013. *Vegetation Classification & Mapping (CALVEG)*. Prepared by US Forest Service, Pacific Southwest Region. <http://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192>.

USFWS (US Fish and Wildlife Service). 1996. *Recovery Plan for the Sacramento-San Joaquin Delta Native Fishes*. Portland, OR: USFWS.

———. 1999. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*. Sacramento: USFWS.

———. 2002. *Recovery Plan for the California Red-legged Frog (Rana aurora draytonii)*. Portland, OR: USFWS.

———. 2005. *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon*. Portland, OR: USFWS.

———. 2010a. "Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for California Red-Legged Frog." Final rule. *Federal Register* 75(51): 12816–12959.

- . 2010b. *Species Assessment and Listing Priority Assignment Form: Fisher, West Coast Distinct Population Segment*. Yreka, CA: USFWS.
- . 2013a. Sacramento Fish & Wildlife Office Species List (online edition). Sacramento: USFWS. Accessed August 5. http://www.fws.gov/sacramento/es_species/Lists/es_species_lists-form.cfm.
- . 2013b. Critical Habitat Portal (online edition). Accessed August 5. <http://criticalhabitat.fws.gov/crithab>.
- USGS (US Geological Survey). 1995. Grass Valley, California, 7.5-minute series topographic quadrangle. US Department of the Interior. TopoScout.
- WRCC (Western Regional Climate Center). 2013. Current and historical climate data for the City of Grass Valley area. <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3571>.

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

This section provides a discussion of the project's effect on greenhouse gas emissions and the associated effects of climate change. The reader is referred to Section 3.2, Air Quality, for a discussion of project impacts associated with air quality.

3.4.1 EXISTING SETTING

EXISTING CLIMATE SETTING

Since the early 1990s, scientific consensus holds that the world's population is releasing greenhouse gases (GHGs) faster than the earth's natural systems can absorb them. These gases are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of greenhouse gases beyond natural levels. The overabundance of greenhouse gases in the atmosphere has led to a warming of the earth and has the potential to severely impact the earth's climate system.

While often used interchangeably, there is a difference between the terms "climate change" and "global warming." According to the National Academy of Sciences, climate change refers to any significant, measurable change of climate lasting for an extended period of time that can be caused by both natural factors and human activities. Global warming, on the other hand, is an average increase in the temperature of the atmosphere caused by increased greenhouse gas emissions. The use of the term climate change is becoming more prevalent because it encompasses all changes to the climate, not just temperature.

To fully understand global climate change, it is important to recognize the naturally occurring greenhouse effect and to define the greenhouse gases that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Table 3.4-1 provides descriptions of the primary greenhouse gases attributed to global climate change, including a description of their physical properties, primary sources, and contribution to the greenhouse effect.

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

**TABLE 3.4-1
GREENHOUSE GASES**

Greenhouse Gas	Description
Carbon Dioxide (CO ₂)	Carbon dioxide is a colorless, odorless gas. CO ₂ is emitted in a number of ways, both naturally and through human activities. The largest source of CO ₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO ₂ emissions. The atmospheric lifetime of CO ₂ is variable because it is so readily exchanged in the atmosphere. ¹
Methane (CH ₄)	Methane is a colorless, odorless gas that is not flammable under most circumstances. CH ₄ is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years. ²
Nitrous Oxide (N ₂ O)	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. N ₂ O is produced by both natural and human-related sources. Primary human-related sources of N ₂ O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N ₂ O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N ₂ O is approximately 120 years. ³
Hydrofluorocarbons (HFCs)	Hydrofluorocarbons are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years). ⁴
Perfluorocarbons (PFCs)	Perfluorocarbons are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF ₄), perfluoroethane (C ₂ F ₆), perfluoropropane (C ₃ F ₈), perfluorobutane (C ₄ F ₁₀), perfluorocyclobutane (C ₄ F ₈), perfluoropentane (C ₅ F ₁₂), and perfluorohexane (C ₆ F ₁₄). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF ₄ and C ₂ F ₆ as byproducts. The estimated atmospheric lifetimes for CF ₄ and C ₂ F ₆ are 50,000 and 10,000 years, respectively. ^{4,5}
Sulfur Hexafluoride (SF ₆)	Sulfur hexafluoride is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF ₆ is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80 percent of all SF ₆ produced worldwide. Significant leaks occur from aging equipment and during equipment maintenance and servicing. SF ₆ has an atmospheric life of 3,200 years. ⁴

Sources: ¹EPA 2011a, ²EPA 2011b, ³EPA 2010a, ⁴EPA 2010b, ⁵EFTC 2003

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Gases with high global warming potential,

such as HFCs, PFCs, and SF₆, are the most heat-absorbent. Methane traps over 21 times more heat per molecule than CO₂, and N₂O absorbs 310 times more heat per molecule than CO₂. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO₂e), which weighs each gas by its global warming potential (GWP). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted. **Table 3.4-2** shows the GWPs for different greenhouse gases for a 100-year time horizon.

TABLE 3.4-2
GLOBAL WARMING POTENTIAL FOR GREENHOUSE GASES

Greenhouse Gas	Global Warming Potential
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	21
Nitrous Oxide (N ₂ O)	310
Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs)	6,500
Sulfur Hexafluoride (SF ₆)	23,900

Source: California Climate Action Registry 2009

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California is a significant emitter of CO₂ in the world and produced 452 million gross metric tons of CO₂e in 2010 (CARB 2013). Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2010, accounting for 38.3 percent of total GHG emissions in the state (CARB 2013). This category was followed by the electric power sector (including both in-state and out-of-state sources) (20.7 percent) and the industrial sector (19.0 percent) (CARB 2013).

EFFECTS OF GLOBAL CLIMATE CHANGE

California can draw on substantial scientific research conducted by experts at various state universities and research institutions. With more than a decade of concerted research, scientists have established that the early signs of climate change are already evident in the state—as shown, for example, in increased average temperatures, changes in temperature extremes, reduced snowpack in the Sierra Nevada, sea level rise, and ecological shifts.

Many of these changes are accelerating—locally, across the country, and around the globe. As a result of emissions already released into the atmosphere, California will face intensifying climate changes in coming decades (CNRA 2009a). Generally, research indicates that California should expect overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures and accelerating sea-level rise. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing (CNRA 2009a).

Climate change temperature projections identified in the 2009 California Climate Adaptation Strategy suggest the following (CNRA 2009a):

- Average temperature increase is expected to be more pronounced in the summer than in the winter season.

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

- Inland areas are likely to experience more pronounced warming than coastal regions.
- Heat waves are expected to increase in frequency, with individual heat waves also showing a tendency toward becoming longer and extending over a larger area, thus more likely to encompass multiple population centers in California at the same time.
- As GHGs remain in the atmosphere for decades, temperature changes over the next 30 to 40 years are already largely determined by past emissions. By 2050, temperatures are projected to increase by an additional 1.8 to 5.4°F (an increase one to three times as large as that which occurred over the entire twentieth century).
- By 2100, the models project temperature increases between 3.6 and 9°F.

According to the 2009 California Climate Adaptation Strategy, the impacts of climate change in California have the potential to include, but are not limited to, the areas discussed in **Table 3.4-3**.

TABLE 3.4-3
POTENTIAL STATEWIDE IMPACTS FROM CLIMATE CHANGE

Potential Statewide Impact	Description
Public Health	Climate change is expected to lead to an increase in ambient (i.e., outdoor) average air temperature, with greater increases expected in summer than in winter months. Larger temperature increases are anticipated in inland communities as compared to the California coast. The potential health impacts from sustained and significantly higher than average temperatures include heat stroke, heat exhaustion, and the exacerbation of existing medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Numerous studies have indicated that there are generally more deaths during periods of sustained higher temperatures, and these are due to cardiovascular causes and other chronic diseases. The elderly, infants, and socially isolated people with pre-existing illnesses who lack access to air conditioning or cooling spaces are among the most at risk during heat waves.
Floods and Droughts	<p>The impacts of flooding can be significant. Results may include population displacement, severe psychosocial stress with resulting mental health impacts, exacerbation of pre-existing chronic conditions, and infectious disease. Additionally, impacts can range from a loss of personal belongings, and the emotional ramifications from such loss, to direct injury and/or mortality.</p> <p>Drinking water contamination outbreaks in the United States are associated with extreme precipitation events. Runoff from rainfall is also associated with coastal contamination that can lead to contamination of shellfish and contribute to food-borne illness. Floodwaters may contain household, industrial, and agricultural chemicals as well as sewage and animal waste. Flooding and heavy rainfall events can wash pathogens and chemicals from contaminated soils, farms, and streets into drinking water supplies. Flooding may also overload storm and wastewater systems, or flood septic systems, also leading to possible contamination of drinking water systems.</p> <p>Drought impacts develop more slowly over time. Risks to public health that Californians may face from drought include impacts on water supply and quality, food production (both agricultural and commercial fisheries), and risks of waterborne illness. As surface water supplies are reduced as a result of drought conditions, the amount of groundwater pumping is expected to increase to make up for the water shortfall. The increase in groundwater pumping has the potential to lower the water tables and cause land subsidence. Communities that utilize well water will be adversely affected by drops in water tables or through changes in water quality. Groundwater supplies have higher levels of total dissolved solids compared to surface waters. This introduces a set of effects for</p>

Potential Statewide Impact	Description
	consumers, such as repair and maintenance costs associated with mineral deposits in water heaters and other plumbing fixtures, and on public water system infrastructure designed for lower salinity surface water supplies. Drought may also lead to increased concentration of contaminants in drinking water supplies.
Water Resources	The state's water supply system already faces challenges to provide water for California's growing population. Climate change is expected to exacerbate these challenges through increased temperatures and possible changes in precipitation patterns. The trends of the last century—especially increases in hydrologic variability—will likely intensify in this century. The state can expect to experience more frequent and larger floods and deeper droughts. Rising sea level will threaten the Delta water conveyance system and increase salinity in near-coastal groundwater supplies. Planning for and adapting to these simultaneous changes, particularly their impacts on public safety and long-term water supply reliability, will be among the most significant challenges facing water and flood managers this century.
Forests and Landscapes	Global climate change has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, wildfire occurrence statewide could increase from 57 percent to 169 percent by 2085. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state.

Source: CNRA 2009a

3.4.2 REGULATORY FRAMEWORK

The adoption of recent legislation has provided a clear mandate that climate change must be included in an environmental review for a project subject to the California Environmental Quality Act (CEQA). Several GHG emission-related laws and regulations are provided below.

FEDERAL REGULATION AND THE CLEAN AIR ACT

In the past, the US Environmental Protection Agency (EPA) has not regulated greenhouse gases under the Clean Air Act (CAA) because it asserted that the act did not authorize the EPA to issue mandatory regulations to address global climate change and that such regulation would be unwise without an unequivocally established causal link between GHGs and the increase in global surface air temperatures. However, the US Supreme Court held that the EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.*, twelve states and cities, including California, together with several environmental organizations, sued to require the EPA to regulate GHGs as pollutants under the Clean Air Act (127 S. Ct. 1438 [2007]). The US Supreme Court held that the EPA was authorized by the Clean Air Act to regulate CO₂ emissions from new motor vehicles. The court did not mandate that the EPA enact regulations to reduce GHG emissions, but found that the only instances in which the EPA could avoid taking action were if it found that GHG emissions do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHG emissions contribute to climate change.

On December 7, 2009, the EPA issued an "endangerment finding" under the Clean Air Act, concluding that GHG emissions threaten the public health and welfare of current and future generations and that motor vehicles contribute to GHG pollution (EPA 2009). These findings provide the basis for adopting new national regulations to mandate GHG emissions reductions

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

under the federal Clean Air Act. The EPA's endangerment finding paves the way for federal regulation of GHG emissions.

It was expected that Congress would enact GHG legislation, primarily for a cap-and-trade system. However, proposals circulated in both the House of Representative and the Senate were controversial, and it may be some time before Congress adopts major climate change legislation. Under the Consolidated Appropriations Act of 2008 (HR 2764), Congress has established mandatory GHG reporting requirements for some emitters of greenhouse gases. In addition, on September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires annual reporting to the EPA of GHG emissions from large sources and suppliers of greenhouse gases, including facilities that emit 25,000 metric tons or more a year of GHGs.

The following discussion summarizes the EPA's recent regulatory activities with respect to various types of GHG sources.

EPA and National Highway Traffic Safety Administration Joint Rulemaking for Vehicle Standards

In response to the *Massachusetts v. EPA* ruling discussed above, the Bush Administration issued an Executive Order on May 14, 2007, directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008.

On October 10, 2008, the National Highway Traffic Safety Administration (NHTSA) released a final environmental impact statement analyzing proposed interim standards for passenger cars and light trucks in model years 2011 through 2015. The NHTSA issued a final rule for model year 2011 on March 30, 2009 (NHTSA 2009).

On May 7, 2010, the EPA and the NHTSA issued a final rule regulating fuel efficiency and GHG pollution from motor vehicles for cars and light-duty trucks for model years 2012–2016 (EPA 2010c). On May 21, 2010, President Obama issued a memorandum to the Secretaries of Transportation and Energy, and to the Administrators of the EPA and the NHTSA, calling for the establishment of additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and the NHTSA issued a Supplemental Notice of Intent announcing plans to propose stringent, coordinated federal greenhouse gas and fuel economy standards for model year 2017–2025 light-duty vehicles. The agencies proposed standards projected to achieve 163 grams per mile of CO₂ in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. California has announced its support of this national program. The final rule was adopted in October 2012, and the NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

Fuel Efficiency Standards for Heavy-Duty Engines and Vehicles

In addition to the regulations applicable to cars and light-duty trucks, on August 9, 2011, the EPA and the NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks, which apply to vehicles from model years 2014–2018. Both the EPA and the NHTSA have adopted standards for CO₂ emissions and fuel consumption, respectively, tailored to each of three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this program will reduce GHG emissions and fuel consumption for affected vehicles by 6 percent to 23 percent.

Energy Independence and Security Act

On December 19, 2007, the Energy Independence and Security Act of 2007 was signed into law. Among other key measures, the act would do the following, which would aid in the reduction of national GHG emissions, both mobile and non-mobile:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
- While superseded by the NHTSA and EPA actions described above, the act also set miles per gallon targets for cars and light trucks and directed the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

Additional provisions of the act address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green jobs.”

Voluntary Programs

The EPA administers a variety of voluntary programs and partnerships with GHG emitters in which the Environmental Protection Agency partners with industries that produce and utilize synthetic gases to reduce emissions of particularly potent GHG emissions. For example, the EPA's National Clean Diesel Campaign (NCDC) promotes diesel emission reduction strategies. The NCDC works to reduce the pollution emitted from diesel engines across the country through the implementation of varied control strategies by working with manufacturers, fleet operators, air quality professionals, environmental and community organizations, and state and local officials to reduce diesel emissions. NCDC activities include developing new emissions standards for locomotive and marine diesel engines, and promoting the reduction of emissions for existing diesel engines, including use of cleaner fuels, retrofitting and repairing existing fleets, and idling reduction, among others. The EPA also administers the State and Local Climate and Energy Program, which provides technical assistance, analytical tools, and outreach support to state, local, and tribal governments.

Other Applicable Regulations and Policies

In addition to the federal regulations and programs described above, there are still more policies and programs to address climate change. A database compiled by the International Energy Agency lists more than 300 policies and measures addressing climate change in the United States.

STATE REGULATION

California has adopted various administrative initiatives and also enacted a variety of legislation relating to climate change, much of which sets aggressive goals for GHG emissions reductions within the state. However, none of this legislation provides definitive direction regarding the treatment of climate change in the environmental review documents prepared under CEQA. In

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

particular, the amendments to the CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or thresholds of significance and do not specify greenhouse gas reduction mitigation measures. Instead, the CEQA amendments continue to rely on lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below. In addition, no state agency has promulgated binding regulations for analyzing GHG emissions, determining their significance, or mitigating any significant effects in CEQA documents. Thus, lead agencies exercise their discretion determining how to analyze greenhouse gases.

The discussion below provides a brief overview of California Air Resources Board (CARB) and Office of Planning and Research (OPR) documents and of the primary legislation relating to climate change that may affect the emissions associated with the proposed project. It begins with an overview of the primary regulatory acts that have driven GHG regulation and analysis in California.

Executive Order S-3-05 (Statewide GHG Targets)

California Executive Order S-03-05 (June 1, 2005) mandates a reduction of GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Although the 2020 target has been incorporated into legislation (AB 32), the 2050 target remains only a goal of the Executive Order.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

The California Global Warming Solutions Act of 2006 (AB 32) 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) was signed into law in September 2006 after considerable study and expert testimony before the legislature. The law instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. The act directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020 (1990 levels have been estimated to equate to 15 percent below 2005 emission levels). Based on CARB's calculation of 1990 baseline emissions levels, California must reduce GHG emissions by approximately 29 percent below "business-as-usual" predictions of year 2020 GHG emissions to achieve this goal.

The bill required CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. CARB accomplished the key milestones set forth in AB 32, including the following:

- June 30, 2007. Identification of discrete early action GHG emissions reduction measures. On June 21, 2007, CARB satisfied this requirement by approving three early action measures. These were later supplemented by adding six other discrete early action measures.
- January 1, 2008. Identification of the 1990 baseline GHG emissions level, approval of a statewide limit equivalent to that level, and adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.

- January 1, 2009. Adoption of a scoping plan for achieving GHG emission reductions. On December 11, 2008, CARB adopted the Climate Change Scoping Plan: A Framework for Change (Scoping Plan), discussed in more detail below.
- January 1, 2010. Adoption and enforcement of regulations to implement the “discrete” actions. Several early action measures have been adopted and became effective on January 1, 2010.
- January 1, 2011. Adoption of GHG emissions limits and reduction measures by regulation. On October 28, 2010, CARB released its proposed cap-and-trade regulations, which would cover sources of approximately 85 percent of California's GHG emissions (CARB 2010). CARB's board ordered CARB's executive director to prepare a final regulatory package for cap and trade on December 16, 2010.
- January 1, 2012. GHG emissions limits and reduction measures adopted in 2011 become enforceable.

AB 32 Scoping Plan

As noted above, on December 11, 2008, CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as “business as usual”). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations will occur through the end of year 2013. The key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, heavy-duty truck measures, and the Low Carbon Fuel Standard.
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation (CARB 2008).

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

In 2009, a coalition of special interest groups brought a challenge to the Scoping Plan alleging that it violated AB 32 and that the environmental review document (called a "Functional Equivalent Document") violated CEQA by failing to appropriately analyze alternatives to the proposed cap-and-trade program. On May 20, 2011, the San Francisco Superior Court entered a final judgment ordering that CARB take no further action with respect to cap-and-trade rulemaking until it complies with CEQA. While CARB disagrees with the trial court finding and appealed the decision on May 23, 2011, in order to remove any doubt about the matter and in keeping with CARB's interest in public participation and informed decision-making, CARB revisited the alternatives. The revised analysis includes the five alternatives included in the original environmental analysis: a "no project" alternative (that is, taking no action at all); a plan relying on a cap-and-trade program for the sectors included in a cap; a plan relying more on source-specific regulatory requirements with no cap-and-trade component; a plan relying on a carbon fee or tax; and a plan relying on a variety of proposed strategies and measures. The public hearing to consider approval of the AB 32 Scoping Plan Functional Equivalent Document and the AB 32 Scoping Plan was held on August 24, 2011. On this date, CARB re-approved the Scoping Plan.

In August 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relies on emissions projections updated in light of current economic forecasts which account for the economic downturn since 2008 as well as reduction measures already approved and put in place. This reduced the projected 2020 emissions from 596 million metric tons (MMT) CO₂e to 545 MMTCO₂e. The reduction in projected 2020 emissions means that the revised business-as-usual (BAU) reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now only 21 percent.

Assembly Bill 1493

Assembly Bill 1493 ("the Pavley Standard," or AB 1493) (Health and Safety Code Sections 42823 and 43018.5) required CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model years 2009–2016. The bill also required the California Climate Action Registry to develop and adopt protocols for the reporting and certification of GHG emissions reductions from mobile sources for use by CARB in granting emissions reduction credits. The bill authorizes CARB to grant emissions reduction credits for reductions in GHG emissions prior to the date of enforcement of regulations, using model year 2000 as the baseline for reduction.

In 2004, CARB applied to the EPA for a waiver under the federal Clean Air Act to authorize implementation of these regulations. The waiver request was formally denied by the EPA in December 2007 after California filed suit to prompt federal action. In January 2008, the California Attorney General filed a new lawsuit against the EPA for denying California's request for a waiver to regulate and limit GHG emissions from these vehicles. In January 2009, President Barack Obama issued a directive to the EPA to reconsider California's request for a waiver. On June 30, 2009, the EPA granted the waiver to California for its GHG emission standards for motor vehicles. As part of this waiver, the EPA specified the provision that CARB may not hold a manufacturer liable or responsible for any noncompliance caused by emission debits generated by a manufacturer for the 2009 model year. CARB has adopted a new approach to passenger vehicles—cars and light trucks—by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California. These standards will apply to all passenger and light-duty trucks used by the residents of Grass Valley.

Low Carbon Fuel Standard

Executive Order S-01-07 (January 18, 2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB. CARB identified the Low Carbon Fuel Standard (LCFS) as a discrete early action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009. In 2009, CARB approved for adoption of the LCFS regulation, which became fully effective in April 2010 and is codified at Title 17, California Code of Regulations, Sections 95480–95490. The LCFS will reduce greenhouse gas emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020. Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the “life cycle” of a transportation fuel.

On December 29, 2011, the US District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the LCFS. One of the district court’s rulings preliminarily enjoined CARB from enforcing the regulation. In January 2012, CARB appealed that decision to the Ninth Circuit Court of Appeals and then moved to stay the injunction pending resolution of the appeal. On April 23, 2012, the Ninth Circuit granted CARB’s motion for a stay of the injunction while it continues to consider CARB’s appeal of the lower court’s decision.

Clean Cars

In January 2012, CARB approved the Advanced Clean Cars Program, a new emissions-control program for model years 2017–2025. The program combines the control of smog, soot, and GHG emissions with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, the new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

Renewables Portfolio Standard (Senate Bill 1078, Senate Bill 107, and Senate Bill X1-2)

Established in 2002 under Senate Bill (SB) 1078, and accelerated in 2006 under SB 107 and again in 2011 under SBX1-2, California’s Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. The 33 percent standard is consistent with the RPS goal established in the Scoping Plan. As interim measures, the RPS requires 20 percent of retail sales to be sourced from renewable energy by 2013, and 25 percent by 2016. Initially, the RPS provisions applied to investor-owned utilities, community choice aggregators, and electric service providers. SBX1-2 added, for the first time, publicly owned utilities to the entities subject to the RPS. The expected growth in the RPS to meet the standards in effect in 2008 is not reflected in the BAU calculation in the AB 32 Scoping Plan. In other words, the Scoping Plan’s 2020 business as usual does not take credit for implementation of the RPS that occurred after its adoption.

Senate Bill 375

SB 375 (codified at Government Code and Public Resources Code¹), signed in September 2008, provides for a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 will be implemented over the next several years and includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. SB 375 also requires metropolitan planning organizations (MPOs) to incorporate a “sustainable communities

¹ Senate Bill 375 is codified at Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01 as well as Public Resources Code Sections 21061.3 and 21159.28 and Chapter 4.2.

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

strategy" in their regional transportation plans that will achieve GHG emissions reduction targets by reducing vehicle miles traveled from light-duty vehicles through the development of more compact, complete, and efficient communities.

SB 375 is similar to the Regional Blueprint Planning Program, established by the California Department of Transportation (Caltrans), which provides discretionary grants to fund regional transportation and land use plans voluntarily developed by MPOs working in cooperation with councils of governments. The Scoping Plan relies on the requirements of SB 375 to implement the carbon emissions reductions anticipated from land use decisions.

On September 23, 2010, CARB adopted regional targets for the reduction of greenhouse gases applying to the years 2020 and 2035 (CARB 2011a). The project area is located in an area that is not represented by a MPO due to the rural nature of the region and therefore is not in an area that received CARB-adopted regional targets for reduction of GHG emissions (CARB 2011b).

California Building Energy Efficiency Standards

Energy conservation standards for new residential and commercial buildings were originally adopted by the California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2008 (Title 24, Part 6 of the California Code of Regulations [CCR]). In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). Part 11 establishes voluntary standards on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. Some of these standards have become mandatory in the 2010 edition of the Part 11 code. Current mandatory standards include:

- Twenty (20) percent mandatory reduction in indoor water use, with voluntary goal standards for 30, 35, and 40 percent reductions
- Separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects
- Diversion of 50 percent of construction waste from landfills, increasing voluntarily to 65 and 75 percent for new homes and 80 percent for commercial projects
- Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies
- Low-pollutant-emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard

The California Energy Commission has opened a public process and rulemaking proceeding for the adoption of changes to the 2013 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code) and associated administrative regulations in Part 1 (collectively referred to here as the standards).

The proposed amended standards will be adopted in 2014. The 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent better for nonresidential construction. The standards, which take effect on January 1, 2014, will offer builders better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

LOCAL

Northern Sierra Air Quality Management District

The project is under the jurisdiction of the Northern Sierra Air Quality Management District (NSAQMD), which regulates air quality according to the standards established in the Clean Air Acts and amendments to those acts. The NSAQMD comprises three contiguous, mountainous, rural counties in northeastern California (Nevada, Sierra, and Plumas counties) and regulates air quality through its permitting authority and through air quality-related planning and review activities over most types of stationary emission sources.

The NSAQMD has not yet established significance thresholds for GHG emissions from project operations.

3.4.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Per Appendix G of the State CEQA Guidelines, the City considers impacts related to climate change significant if implementation of the proposed project would result in any of the following:

- 1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- 2) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Subsequent development allowed under the proposed project would result in the generation of GHG emissions associated with future construction activities, consisting primarily of emissions from equipment exhaust, as well as long-term operations, consisting primarily of new vehicular trips, stationary source emissions such as natural gas used for heating, and indirect source emissions such as electricity usage for lighting.

Addressing GHG generation impacts requires an agency to make a determination as to what constitutes a significant impact. The amendments to the CEQA Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine if a project's GHG emissions will have a "significant" impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" the project's GHG emissions (14 CCR Section 15064.4[a]).

In its Final Statement of Reasons for Regulatory Action accompanying the CEQA Amendments (FSOR), the California Natural Resources Agency (2009b) explains that quantification of GHG

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

emissions “is reasonably necessary to ensure an adequate analysis of GHG emissions using available data and tools” and that “quantification will, in many cases, assist in the determination of significance.” However, as explained in the FSOR, the revised Section 15064.4(b) assigns lead agencies the discretion to determine the methodology to quantify GHG emissions. The FSOR also notes that CEQA case law has long stated that “there is no iron-clad definition of ‘significance.’” Accordingly, lead agencies must use their best efforts to investigate and disclose all that they reasonably can concerning a project’s potential adverse impacts.”

Determining a threshold of significance for a project’s climate change impacts poses a special difficulty for lead agencies. Much of the science in this area is new and is evolving constantly. At the same time, neither the state nor local agencies are specialized in this area, and there are currently no local, regional, or state thresholds for determining whether a proposed project has a significant impact on climate change. The CEQA Amendments do not prescribe specific significance thresholds but instead leave considerable discretion to lead agencies to develop appropriate thresholds to apply to projects within their jurisdiction.

As noted earlier, AB 32 is a legal mandate requiring that statewide GHG emissions be reduced to 1990 levels by 2020. In adopting AB 32, the legislature determined the necessary GHG reductions for the state to make in order to sufficiently offset its contribution to the cumulative climate change problem to reach 1990 levels. AB 32 is the only legally mandated requirement for the reduction of greenhouse gases. As such, compliance with AB 32 is the adopted basis upon which the agency can base its significance threshold for evaluating the project’s GHG impacts.

As previously stated, significance thresholds for GHG emissions resulting from land use development projects have not been established in Grass Valley or Nevada County (as previously mentioned, the NSAQMD has not yet established significance thresholds for greenhouse gas emissions from project operations). In June 2010, the Bay Area Air Quality Management District (BAAQMD) published its GHG threshold. Utilization of the BAAQMD’s GHG threshold was considered reasonable and appropriate by NSAQMD staff (Longmire 2013). If the proposed project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact and the impact would be considered significant. If mitigation can be applied to lessen the emissions such that the project meets its share of emission reductions needed to address the cumulative impact, the project would be considered less than significant.

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, quantification and disclosure of construction-generated GHG emissions that would occur during construction is recommended.

The BAAQMD’s emissions threshold for operations is 4.6 metric tons of CO₂e per service population (residents plus employees) per year (BAAQMD 2011). The BAAQMD thresholds were chosen based on the substantial evidence that such thresholds represent quantitative and/or qualitative levels of GHG emissions, compliance with which means that the environmental impact of the GHG emissions will normally not be cumulatively considerable under CEQA (BAAQMD 2011). Compliance with such thresholds will be part of the solution to the cumulative GHG emissions problem, rather than hinder the State’s ability to meet its goals of reduced statewide GHG emissions under AB 32.

METHODOLOGY

The resultant GHG emissions of the proposed project were calculated using the California Emissions Estimator Model (CalEEMod), version 2013.2, computer program (see **Appendix 3.4-1**). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for the use of government agencies, land use planners, and environmental professionals. This model was developed in coordination with the South Coast Air Quality Management District (SCAQMD) and is the most current emissions model approved for use in California by various other air districts.

The California Natural Resources Agency CNRA has noted that impacts of GHG emissions should focus on the cumulative impact on climate change. The public notice states (CNRA 2009c):

While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable.

Thus, the CEQA Amendments continue to make clear that the significance of GHG emissions is most appropriately considered on a cumulative level.

PROJECT IMPACTS AND MITIGATION MEASURES

Generate Greenhouse Gas Emissions That May Have a Significant Impact on the Environment and AB 32 Compliance (Standards of Significance 1 and 2)

Impact 3.4.1 Implementation of the proposed project will result in greenhouse gas emissions that would further contribute to significant impacts on the environment. This is considered a **cumulatively considerable** impact.

GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. No single land use project could generate enough GHG emissions to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects contributes substantially to the phenomenon of global climate change and its associated environmental impacts and as such is addressed only as a cumulative impact.

Construction GHG Emissions

Subsequent development proposed under the proposed project would result in direct emissions of GHGs from construction.

Since the actual phasing of future development allowed under the proposed project is not known at this time, construction-related emissions were modeled assuming an equal distribution of development over the City General Plan period. For example, the proposed project conceptually allows for a future growth potential of 425,908 square feet of commercial-type land uses, 1,034,985 square feet of industrial-type land uses, 534 residential units, and 20.3 acres of government storage space. For the purposes of this analysis, the project nonresidential square footage and residential units are divided by seven (the number of years between the current

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

year (2014) and the year of the General Plan horizon (2021)) in order to roughly depict potential construction-related GHG emissions which may result in any given year over the span of the City General Plan. However, it is important to note that the proposed project does not include any policy provisions requiring that its growth potential be attained. Not all of the identified land will be available for development at any given time based on landowner willingness to sell or develop, site readiness, environmental constraints, market changes, and other factors. This impact discussion assumes full growth potential as identified in **Table 2.0-2** of Section 2.0, Project Description, under the proposed project in order to present the maximum amount of pollutant emissions possible.

The approximate quantity of annual GHG emissions generated by construction equipment utilized to build the development associated with the proposed project is depicted in **Table 3.4-4**.

TABLE 3.4-4
CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS – METRIC TONS PER YEAR

Construction	Carbon Dioxide (CO ₂)	Methane (CH ₄)	Nitrous Oxide (N ₂ O)	CO ₂ e
One Year of Construction	920	0.15	0.00	923
Seven Years of Construction Total	6,440	1.05	0.00	6,461

*Source: CalEEMod version 2013.2. Development assumptions for lands proposed for annexation include 124,146 square feet of corporate business park; 128,066 square feet of light industrial; and 576,103 square feet of general industrial on 120 acres. Development assumptions for lands that are not proposed for annexation include 301,762 square feet of central business, 330,816 square feet of light industrial, 73 single-family residential units, 461 two-family units, and 20.3 acres of government corporation yard on 299 acres. See **Appendix 3.4-1** for emission model outputs.*

As shown, project construction would result in the generation of approximately 6,440 metric tons of CO₂e over the course of seven years of construction. Once construction is complete, the generation of these GHG emissions would cease. Construction-related mitigation could include various measures such as an enforced limitation of off-road diesel equipment idling times below the state-mandated maximum of 5 minutes and/or an off-road construction equipment emissions reduction plan demonstrating that all off-road equipment (portable and mobile) meets or is cleaner than Tier 2 engine emission specifications. In addition, per Senate Bill 97, all future development projects under the proposed Southern Sphere of Influence Planning and Annexation project would be required to analyze and mitigate GHG emissions during development project review, pursuant to CEQA. Adherence to Senate Bill 97 would reduce construction-generated GHG emissions.

As previously stated, the BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, quantification and disclosure of construction-generated GHG emissions that would occur during construction is recommended. In order to provide a more conservative analysis, construction emissions are amortized for a “project lifetime” of 30 years. The amortized construction emissions identified in **Table 3.4-4** are added to the annual average operational emissions (see **Table 3.4-5**).

Operational GHG Emissions

As shown in **Table 3.4-5**, the unmitigated long-term operations of full realization of the proposed project would produce 32,355 metric tons of CO₂e annually.

TABLE 3.4-5
UNMITIGATED PROJECT GREENHOUSE GAS EMISSIONS – PROJECT OPERATION (METRIC TONS PER YEAR)

Emissions Source	Carbon Dioxide (CO ₂)	Methane (CH ₄)	Nitrous Oxide (N ₂ O)	CO ₂ e
Construction Amortized over 30 Years	214	0.03	0.00	215
Area Source (landscaping, hearth)	789	0.51	0.04	814
Energy	4,755	0.19	0.05	4,775
Mobile	24,683	0.85	0.00	24,701
Waste	402	24	0.00	901
Water	653	10	0.25	949
Total	31,496	36	0.34	32,355

Source: CalEEMod version 2013.2. Buildout assumptions include 124,146 square feet of corporate business park; 128,066 square feet of light industrial; 576,103 square feet of general industrial; 301,762 square feet of central business; 330,816 square feet of light industrial; 73 single-family residential units; 461 two-family units; and 20.3 acres of government corporation yard. Traffic generation is derived from data provided by Kimley-Horn and Associates. See **Appendix 3.4-1** for emission model outputs.

As noted in the Standards of Significance discussion above, the GHG emission threshold is 4.6 metric tons of CO₂e per service population (residents plus employees) per year. This threshold was developed to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation (AB 32) adopted to reduce statewide GHG emissions.

The California Department of Finance (2013) estimates an average of 1.99 persons per dwelling unit in Grass Valley. Therefore, the development of up to 534 potential residential units is anticipated to result in a population increase of 1,062 at buildout (534 units x 1.99 persons = 1,063). According to the Energy Information Administration (1995), there is an average of one employee per 1,750 square feet of industrial building space and one employee per 766 square feet of commercial building space. Applying these ratios to the industrial and commercial square footage growth potential in the Southern Sphere of Influence Planning and Annexation project area results in 1,147 potential employees (1,034,985 square feet of industrial-type building space ÷ 1,750 = 591 and 425,908 square feet of commercial-type building space ÷ 766 = 556. 591 + 556 = 1,147). Therefore, the project service population would be 2,210 (1,063 residents + 1,147 employees = 2,210).

As shown in **Table 3.4-6**, dividing the GHG emissions yields a metric ton per service population ratio of 14.6 for full realization of the proposed project.

TABLE 3.4-6
PROJECT BUILDOUT GHG EMISSIONS PER SERVICE POPULATION

Per Capita Emissions	Emissions	Jobs	Population	Service Population (SP)	MTCO ₂ e/SP/Year
Southern Sphere of Influence Planning and Annexation Buildout	32,355	1,147	1,063	2,210	14.6
Service Population Threshold					4.6
Threshold Surpassed?					Yes

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

The 14.6 ratio is over the significance threshold for operations of 4.6 metric tons of CO₂e per service population per year. Therefore, the following mitigation is required.

Mitigation Measures

MM 3.4.1

Subsequent development projects within the Southern Sphere of Influence Planning and Annexation project area shall submit to the City of Grass Valley and receive approval for a GHG Emissions Reduction Plan prior to issuance of building permits for the development project in question. The GHG Emissions Reduction Plan shall demonstrate adherence to the following measures or alternative measures equaling the same or greater emission reduction values.

- Indoor water conservation measures shall be incorporated, such as use of low-flow toilets, showers, and faucets (kitchen and bathroom), in each residential unit. (181 metric ton reduction)
- The proposed project shall be designed to exceed state energy efficiency standards by 15 percent (to Tier 1 Title 24 Standards) as directed by Appendix A5 of the 2010 California Green Building Standards (CBSC 2011). This measure helps to reduce emissions associated with energy consumption. (222 metric ton reduction)
- Low-water-use landscaping (i.e., drought-tolerant plants and drip irrigation) shall be installed. At least 75 percent of all landscaping plants shall be drought-tolerant as determined by a licensed landscape architect or contractor. (4 metric ton reduction)
- The installation of wood-burning fireplaces shall be prohibited in all new residential units. (427 metric ton reduction)

Timing/Implementation: *Implemented prior to and during construction activities*

Enforcement/Monitoring: *City of Grass Valley Planning Department*

GHG emissions estimated to result from mitigated long-term operations of the proposed project at buildout are shown in **Table 3.4-7**.

TABLE 3.4-7
MITIGATED PROJECT GREENHOUSE GAS EMISSIONS – PROJECT OPERATION (METRIC TONS PER YEAR)

Emissions Source	Carbon Dioxide (CO ₂)	Methane (CH ₄)	Nitrous Oxide (N ₂ O)	CO ₂ e
Construction Amortized over 30 Years	214	0.03	0.00	215
Area Source (landscaping, hearth)	385	0.01	0.00	387
Energy	4,534	0.18	0.04	4,553
Mobile	24,683	0.85	0.00	24,701
Waste	402	24	0.00	901
Water	529	8	0.2	766
Total	30,747	33	0.24	31,523

Source: CalEEMod version 2013.2. Buildout assumptions include 124,146 square feet of corporate business park; 128,066 square feet of light industrial; 576,103 square feet of general industrial; 301,762 square feet of central business, 330,816 square feet of light industrial; 73 single-family residential units; 461 two-family units; and 20.3 acres of government corporation yard. Traffic generation is derived from data provided by Kimley-Horn and Associates. See **Appendix 3.4-1** for emission model outputs.

As shown in **Table 3.4-7**, the mitigated long-term operations of the proposed project would produce 31,523 metric tons of CO₂e annually. Dividing 31,523 metric tons of CO₂e yields a metric ton per service population ratio of 14.2, which is more than the significance threshold. The majority of these emissions are a result of mobile sources, which are beyond the City's regulatory authority. The proposed project's contribution to cumulative GHG emissions is considered **cumulatively considerable** and a **significant and unavoidable** impact.

3.4 CLIMATE CHANGE AND GREENHOUSE GASES

REFERENCES

- BAAQMD (Bay Area Air Quality Management District). 2011. *California Environmental Quality Act Guidelines*.
- California Climate Action Registry. 2009. *California Climate Action Registry General Reporting Protocol Version 3.1*.
- CARB (California Air Resources Board). 2008. *Climate Change Scoping Plan Appendices* (Appendix F).
- . 2010. *Proposed Regulation to Implement the California Cap-and-Trade Program*.
- . 2011a. *Notice of Decision, Regional Greenhouse Gas Emissions Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375*.
<http://www.arb.ca.gov/cc/sb375/notice%20of%20decision.pdf>.
- . 2011b. *Executive Order No. G-11-024, Relating to Adoption of Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375*.
http://www.arb.ca.gov/cc/sb375/executive_order_g11024.pdf.
- . 2013. *California Greenhouse Gas Inventory for 2000–2010*. February 19, 2013.
<http://www.arb.ca.gov/cc/inventory/data/data.htm>.
- CBSC (California Building Standards Commission). 2011. *California Green Building Standards Code*.
- CNRA (California Natural Resources Agency). 2009a. *2009 California Climate Adaptation Strategy*.
- . 2009b. *Final Statement of Reasons for Regulatory Action, Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97*. http://ceres.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf.
- . 2009c. *Notice of Public Hearings and Notice of Proposed Amendment of Regulations Implementing the California Environmental Quality Act, 2009*.
http://ceres.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf
- EIA (Energy Information Administration). 1995. *1995 Commercial Buildings Energy Consumption Survey*. 1995
- EFCTC (European Fluorocarbons Technical Committee). 2003. *Fluorocarbons and Sulphur Hexafluoride: Perfluorocarbons (PFCs) Fact Sheet*.
- EPA (US Environmental Protection Agency). 2009. *Endangerment and Cause or Contribute Finding for Greenhouse Gases under the Clean Air Act*. Last revised December 18, 2009.
- . 2010a. *Nitrous Oxide*. <http://www.epa.gov/nitrousoxide/scientific.html>.
- . 2010b. *High Global Warming Potential Gases*. <http://epa.gov/highgwp/>.

———. 2010c. *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, Final Rule*.

———. 2011a. *Climate Change – Greenhouse Gas Emissions: Carbon Dioxide*. <http://www.epa.gov/climatechange/emissions/co2.html>.

———. 2011b. *Methane*. <http://www.epa.gov/methane/scientific.html>.

Kimley Horn. 2013. *Southern Sphere of Influence EIR*.

Longmire, Sam. 2013. Northern Sierra Air Management District. E-mail communications with PMC staff.

NHSTA (National Highway Safety Traffic Administration). 2009. *Average Fuel Economy Standards Passenger Cars and Light Trucks Model Year 2011, Final Rule*.

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

This section considers and evaluates the potential impacts of the proposed project on cultural and paleontological resources. Cultural resources include historic buildings and structures, historic districts, historic sites, prehistoric and historic archaeological sites, and other prehistoric and historic objects and artifacts. Paleontological resources include vertebrate, invertebrate, or plant fossils. While no cultural studies have been prepared specifically for this project, this Draft Environmental Impact Report (EIR) utilizes technical information and analyses from previous cultural studies, peer reviews, and archaeological surveys that have been done for previously proposed activities located within the project area. Those studies are cited in this section where appropriate.

3.5.1 EXISTING SETTING

PREHISTORY

Regional archaeological surveys that are useful for the prehistoric setting in the general project area were initiated in association with reservoir projects in the 1940's and 1950's (e.g., Auburn, French Meadows, and Sugar Pine Reservoirs) along the Middle Fork of the American River. These surveys identified numerous sites and recovered Martis Complex artifacts. These artifacts suggest that the Martis Complex either extended across the western Sierra Nevada to altitudes as low as 800 feet or extended across the Central Valley to elevations as high as 800 feet. One specific survey documenting similar use of the area is the stratified Spring Garden Ravine site, CA-PLA-101. This survey identified three strata at the site: Stratum C, the lower stratum of the site, is dated at 3,400 B.C. and consists of a "Martis-like" assemblage of large basalt and slate points, atlatl weights, bowl mortars, and millingsstones ; Stratum B, the intermediate stratum of the site, is dated at 1,000 B.C. and consists of a "Martis-like" assemblage; and the upper stratum of the site, Stratum A, is characterized by desert side-notched points and is probably associated with ancestral Nisenan (Ritter 1970). Ritter (1970: 532) believes that the Spring Garden Ravine site highlights the adaptation to the ecotone between the pine forest and oak-chaparral woodland (i.e., the Transition Zone) by Martis cultural groups beginning around 4,000 B.C. Ritter supported an earlier hypothesis that the Martis Complex reflects an adaptation to the ecology of the Transition Zone.

Technical changes through time included the replacement of the atlatl and spear by the bow and arrow around A.D. 600-800 and the intensive use of mortars and pestles, including bedrock milling features after A.D. 1400-1600. This reflected a growing reliance on the acorn as a staple food, probably due to population pressures. A marked decline in the use of more local basalts and slates for flaked tools came with an increase in the use of obsidian, a superior material but from non-local sources (City of Grass Valley 1998).

ETHNOGRAPHY

The project area lies within the ethnographic territory of the Nisenan, or Southern Maidu. The Washoe also exploited this area, but did not permanently occupy it. Consequently, both Nisenan and Washoe will be discussed, but the Nisenan will be highlighted. The Nisenan inhabited the drainages of the Yuba, Bear, and American Rivers, and also the lower reaches of the Feather River, extending from the east banks of the Sacramento River on the west to the mid to high elevations of the western flank of the Sierra Nevada. Washoe historically inhabited the region east of the crest of the Sierra Nevada into Carson Valley, extending from the Walker River in the south to Honey Lake in the north, with peripheral territory extending to the mid-elevations of the western slope of the north-central Sierra Nevada. The Nisenan villages were located at lower elevations where habitation was easier in the winter. The upper elevations were the scene of warm weather hunting and gathering, with the people moving about and utilizing small

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

campsites. As noted in the City General Plan Background Report (1998, p. 13-2), there are five major villages within a six-mile radius of Grass Valley.

Flaked and ground stone tools were common among the Nisenan and Washoe and included knives, arrow and spear points, club heads, arrow straighteners, scrapers, rough cobble and shaped pestles, bedrock mortars, grinding stones (metates), pipes, charms, and "short spears". In addition, obsidian was highly valued and imported by both groups. Nisenan informants stated that obsidian only came from a place to the north, outside of Nisenan territory. Both groups also made a variety of bone and wood tools. Wood was used for both simple and sinew-backed bows, arrow shafts and points, looped stirring sticks, flat-bladed mush paddles, pipes, and hide preparation tools. Cordage was made from plant material and was used to construct fishing nets and braided and twined tumplines. In addition, Nisenan and Washoe used baskets for a variety of tasks, including storage, cooking, serving and processing foods, burden baskets, traps, cradles, hats, cages, seed beaters, and winnowing trays. Basket manufacturing techniques included both twining and coiling, and baskets were decorated with a variety of designs and other materials. Other woven artifacts include tule matting and netting made of milkweed, sage fibers, or wild hemp.

The discovery of gold at Sutter's Mill in Coloma in 1848, however, caused a dramatic alteration of Native American cultural patterns in California. Once news spread of the discovery of gold, a flood of Euro-Americans began to enter the region, particularly gravitating to the area of the "Mother Lode" (e.g., Nevada, Placer, and El Dorado Counties). Initially, the Euro-American population grew slowly, but it soon exploded as the presence of large deposits of gold was confirmed. The population of California quickly swelled from an estimated 4,000 Euro-Americans in 1848 to 500,000 in 1850. This large influx of immigrants had a negative effect on Native American cultures and marks the beginning of a relatively rapid decline of both Native American populations and culture.

HISTORIC PERIOD

Grass Valley has a rich historical heritage, including the era that extended from the California gold rush of 1849 through the tumultuous mining period that followed. The last active gold mine in the area closed in 1956, ending 107 years of continuous production. Many valuable historic resources still remain as a reminder of the City's legacy (City of Grass Valley 1999, Historical Element).

The discovery of gold at Sutter's Mill in Coloma in 1848 caused a dramatic alteration of cultural and economic patterns in California. The latter half of the nineteenth century witnessed an ongoing and growing immigration of Anglo-Americans into the area who were attempting to "strike it rich" in the goldfields of the north-central Sierra Nevada. Early arrivals to the gold fields began prospecting in the more accessible placer deposits. Recovery of gold from these deposits required only simple tools and techniques (e.g., panning).

In the 1850s, as these relatively easily accessed gold deposits became scarce and more miners entered the area, gold extraction techniques became more complicated and intensive. For example, in addition to the basic gold pan, sluiceboxes, flumes, dams, and eventually hydraulic operations soon became standard facilities for placer mining. As gold deposits near the ground surface continued to dwindle, drift mining, which requires tunneling to reach gold deposits, became a widespread extraction technique. Finally, hard rock mining (e.g., the Empire Mine in Grass Valley), the use of explosives, and the use of stamp mills to extract gold from quartz were employed. Many of these mining techniques, particularly hydraulic mining, required the use of large quantities of water. Consequently, extensive water diversion systems including dams and

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

miles of ditches were constructed to supply the water necessary to “wash out” huge amounts of gravel. Eventually this activity polluted and/or clogged many waterways in the foothills and Central Valley, leading to the banning of hydraulic mining in 1884.

Gold mining also opened the region to new business enterprises and occupations since miners generated a need for a wide variety of supplies and services. Some of the most successful people in the region were not miners, but rather businessmen who supplied the miners. Consequently, new businesses and occupations, including logging, farming, dairying, and ranching, were established in the region and continue today. By the 1860s, agriculture, including the introduction of new crops, and logging dramatically affected and modified the landscape of the foothills of the Sierra Nevada. Both mining and agriculture placed water at a premium. Water companies were established to construct dams, reservoirs, and ditch systems to both satisfy and profit from the demand for water. In many areas across the foothills of the Sierra Nevada, these water conveyance systems are still in use as part of local water supply systems.

PALEONTOLOGICAL SETTING

Paleontological resources are the fossilized remains of plants and animals. The age and abundance of fossils depend on the location, topographic setting and particular geologic formation in which they are found. Fossils generally occur in the Sierra Nevada in rocks that are young in age (less than 50 million years). According to the University of California Museum of Paleontology (UCMP), the closest fossil sites to the proposed project area are a few miles to the east and north of Grass Valley.

KNOWN CULTURAL RESOURCES

Peter Jensen (1999) conducted cultural resources investigations for the former Village at SouthHill project site, which was located in a portion of the project area. These investigations identified foundations associated with the former Bear Creek Mill (1956–78) located in the central portion of the project area. The site was not recorded at that time since the features were less than 50 years old at the time. **Table 3.5-1** lists the known archaeological sites located within the project area, including the site identified in the 1999 Jensen investigations (VASH-1).

TABLE 3.5-1
KNOWN ARCHAEOLOGICAL SITES WITHIN THE PROJECT AREA

Site Number	Site Description	Site Type	Eligibility
VASH-1	Foundations and trash associated with the Bear Creek Mill	Historic	Not determined
Berriman 1	Bedrock mortars, lithic scatter, midden	Prehistoric	Potentially Significant
Berriman 2	Small ranch complex, eight buildings/sheds	Historic	Not Significant

Source: P. Jensen 1999, S. Jensen 2006, p. 15)

A peer review to the study and an intensive pedestrian survey were done in 2008 for the Village at SouthHill project. The peer review stated that any structures that were associated with the Bear River Mill were demolished in 1978, but that some remnants, such as pipes, timber, and foundations, still remain. The pedestrian study confirmed the presence of the foundations first observed by Peter Jensen (1999), and no other cultural resources were identified as a result. The peer review concluded that implementation and completion of the Village at SouthHill project would not likely affect any historical resources or unique archaeological resources.

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

Additional investigations were also prepared for the former Village at SouthHill project and included a records search conducted at the North Central Information Center (NCIC), a cursory pedestrian surface survey, a sacred lands search conducted by the Native American Heritage Commission (NAHC), and subsequent consultation with Native American contacts listed by the NAHC.

Archaeological investigations (i.e., prehistoric and historic research) for the State Route (SR) 49/Crestview Drive Intersection project were conducted in 2004 and 2005 (PMC 2005), and included archival research and pedestrian surface survey of the project area of potential effects (APE). This interchange was not constructed, but could be in the future. The site is in the center of the project area.

The record search conducted in April 2004 identified ten previous surveys either near or within the APE for the SR 49/Crestview Drive Intersection project (cf., Ferrier 1990; Lindstrom 1990; Leonhard 1992; Jensen, P., 1997, 1999, 2000; Leonhard 1997; Day 1998; Derr 1998; and Windmiller 1999). The record search did not identify any prehistoric or historical archaeological sites either within or adjacent to the project APE. Similarly, a sacred lands search requested and completed by the NAHC on April 18, 2004, did not identify any sensitive Native American cultural resources in the project area. All individuals and groups identified by the NAHC were informed of the project. The United Auburn Indian Community of the Auburn Rancheria responded on May 19, 2004, and requested that appropriate surveys be conducted for the project and that they continue to be informed about the project. (PMC 2005).

Sean Jensen (2006) completed an archaeological inventory survey of the 121-acre Berriman Ranch property, which accounts for most of the western side of the project area. This survey notes the previous survey on the property (1992) associated with a timber harvest plan. As summarized in **Table 3.5-1**, these investigations identified two cultural resources, one of which is potentially significant.

NAHC Consultation

As noted above, the archaeological surveys identified one potential sensitive Native American cultural resource in the project APE. Upon request by the City, the NAHC provided a list of Native American contacts for the project area. City staff initiated the consultation process with all tribes identified by the NAHC with traditional lands or cultural places located within the project boundaries. On July 10, 2013, staff met with representatives from the United Auburn Indian Community of the Auburn Rancheria and provided them with all relevant surveys. No additional comments or requirements were noted at this meeting. The City did not receive any comments from other Native American communities regarding the project.

KNOWN PALEONTOLOGICAL RESOURCES

Paleontology is the science dealing with past geological periods and fossil remains. Paleontological resources include fossil remains, as well as fossil localities and formations that have produced fossil material. Such locations and specimens are important non-renewable resources. The California Environmental Quality Act (CEQA) offers protection for these sensitive resources and requires that they be addressed during the EIR process.

A search of the UCMP collections database identified 430 previously recorded paleontological resources in Nevada County. These resources primarily consist of plants, but also include a small number of invertebrates. The database search did not identify any significant paleontological

resources within boundaries of the project and the geography and geology of the area suggest that it is not sensitive for paleontological resources.

3.5.2 REGULATORY FRAMEWORK

FEDERAL

National Historic Preservation Act

Federal regulations for cultural resources are governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966, and as amended. Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties and, if appropriate, afford the Advisory Council on Historic Preservation an opportunity to comment on such undertakings. The council's implementing regulations, "Protection of Historic Properties" can be found in 36 Code of Federal Regulations (CFR) Part 800. The goal of the Section 106 review process is to offer a measure of protection to sites, which are determined to be eligible for listing or listed in the National Register of Historic Places (NRHP). The criteria for determining NRHP eligibility are found in 36 CFR Part 60. Amendments to the NHPA (1986 and 1992) and subsequent revisions to the implementation regulations have strengthened the provisions for Native American consultation and participation in the Section 106 review process. While federal agencies must follow federal regulations, most projects by private developers and landowners do not require this level of compliance. Federal regulations come into play in the private sector if the proposed project requires a federal permit (e.g., Section 404 of the Clean Water Act Permit) or if it uses federal money.

STATE

California Environmental Quality Act

CEQA requires lead agencies to carefully consider the potential effects of a project on historical resources. State CEQA Guidelines Section 15064.5 defines a significant effect as one that may cause a substantial adverse change in the significance of an historical resource. A "substantial adverse change" means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, such that the significance of an historical resource is materially impaired.

The California Register of Historical Resources (CRHR) serves as the authoritative guide to resources that are considered significant under CEQA. However, simply because a resource is not currently listed in the CRHR does not mean that it is not a historical resource. A historical resource includes, but is not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (Public Resources Code Section 5020.1). Section 15064.5 of the State CEQA Guidelines specifies criteria for evaluating the importance of cultural resources. Native American concerns and the concerns of other interested persons and corporate entities, including but not limited to museums, historical commissions, associations and societies, shall be solicited as part of the process of a cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains (Health and Safety Code Section 7050.5, Public Resources Code Section 5097.94 et seq.).

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided that the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets any of the following criteria for listing on the CRHR (Public Resources Code Section 5024.1(c), 14 CCR 4852):

- 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.

California Public Resources Code Section 21083.2 also addresses the identification and protection of unique archaeological resources. A "unique archaeological resource," as defined in this section, is an archaeological artifact, object, or site about which it can be demonstrated that there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is associated with a scientifically recognized important prehistoric or historic person or event.

CEQA emphasizes avoidance of archaeological and historical resources as the preferred means of reducing potential significant effects. If avoidance is not feasible, the lead agency shall identify potentially feasible mitigation measures, following guidance in Section 21083.2, to mitigate significant adverse changes in the significance of an historical resource.

LOCAL

City of Grass Valley General Plan

The City of Grass Valley General Plan was adopted in 1999 and includes a Historical Element that contains goals, objectives, policies, actions, and strategies applicable to cultural resources. This element includes various policies that are intended to ensure future development does not adversely affect cultural or historical resources. Furthermore, the EIR certified for the City's General Plan included an analysis of cultural resources in the City's Planning Area. This includes a map showing areas that have low, moderate, and high cultural sensitivity. As it pertains to the project area, this map shows that the lands on the east side of State Route 49 are low sensitivity and the lands on west side have areas of low, moderate, and high sensitivity. The following policies of the General Plan would have a mitigating effect with respect to impacts on cultural and historical resources:

Policy 10-HP: Where historic and prehistoric cultural resources have been identified, the City shall require that development be designed to protect such resources from damage, destruction, or defacement.

Policy 11-HP: If previously undiscovered cultural resources or human remains are encountered during construction or excavation, the procedures outlined in Section 15064.5 of the CEQA Guidelines shall be followed.

A discussion of the project's consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

3.5.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the City of Grass Valley has determined that a project may have significant impacts on cultural or paleontological resources if it does any of the following:

- 1) Cause a substantial adverse change in the significance of an archeological resource or a historical resource pursuant to Section 15064.5, respectively.
- 2) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- 3) Disturb any human remains, including those interred outside of formal cemeteries.

METHODOLOGY

Comprehensive archaeological and historical investigations have not been completed for the entire project area. Some investigations have been prepared for previously-approved or planned projects located within the project area, and information from those investigations has been used in this analysis, where appropriate. Investigations have been conducted for the former Village and SouthHill projects, located east of SR 49 within the project area, the Berriman Ranch property, which makes up the majority of the western portion of the project area west of SR 49, and the SR 49/Crestview Drive Intersection project, located in the center of the project area.

Because this is a programmatic analysis and the project does not propose development, the available archaeological and historical investigations (i.e., record search, archival research, and pedestrian surface survey) done for previously proposed projects within and near the project area are adequate to identify typical prehistoric and historic resources that would likely be present in the project area. These investigations identified two potential cultural resources known to be within the current project APE. However, future development projects proposed within the project area would require that subsequent cultural resource investigations be prepared to document areas that have not yet been evaluated and whether any changes in conditions occur in areas that have had previous analyses completed.

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

PROJECT IMPACTS AND MITIGATION MEASURES

Undiscovered Prehistoric Resources, Historic Resources, and Human Remains (Standards of Significance 1 and 3)

Impact 3.5.1 Implementation of the proposed project could result in the potential disturbance of known and undiscovered cultural resources. This impact is considered **potentially significant**.

Previous archaeological and historical investigations done for portions of the project area identified one potential cultural resource in the project area, which would require mitigation to ensure their continued viability as cultural resources. Future development that would occur within the properties where cultural resource surveys have been completed would need to comply with any recommendations for dealing with cultural resources that would be affected by development on those properties. It should be noted that although studies have been done for those properties, there could be the potential to unearth previously unknown cultural resources during grading and earthwork activities. Due to the age of some of the reports, it is possible that conditions may have changed, so additional documentation may be warranted for future development on those properties.

In addition, since archaeological and historical investigations have not been prepared for all properties located within the project area, there is a possibility of unanticipated and accidental archaeological discoveries related to future development within the project area during ground-disturbing activities, if they occur in the future. Unanticipated and accidental archaeological discoveries during project implementation have the potential to affect significant archaeological resources. This is considered a **potentially significant** impact.

Mitigation Measures

MM 3.5.1a To the extent feasible, future development within the project area will avoid and preserve the cultural resource site Berriman #1 as well as prepare a site preservation plan as noted in the 2006 Archaeological Inventory Survey (Sean Jensen). If preservation "as is" cannot be ensured, then those specific attributes and qualities which renders site Berriman # significant per CEQA shall be determined through formal archaeological data collection work as specified in the 2006 survey.

Timing/Implementation: As a condition of project approval for any future development proposals within the Berriman Ranch property, and implemented during construction activities

Enforcement/Monitoring: City of Grass Valley Community Development Department

MM 3.5.1b When a proposal affects a previously undeveloped parcel in an area identified as having high or moderate cultural sensitivity in the General Plan, a cultural resource study shall be prepared as part of the CEQA analysis. If the proposal affects an area addressed in previous cultural studies, the City shall review the report(s) to confirm whether conditions documented in the previously prepared study have changed and if the recommendations (if any) required by the study are still applicable and appropriate for the future

proposed project. If the City determines that conditions have changed from the previous study, the City will require that an appropriate updated to the analysis or a new analysis be prepared.

Timing/Implementation: Study to be submitted concurrently with a specific development application and a condition of project approval for any future development proposals within the project area

Enforcement/Monitoring: City of Grass Valley Community Development Department

MM 3.5.1c

If, during the course of construction of future projects within the project area, cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) are discovered, work shall be halted immediately within 50 feet of the discovery, and the City of Grass Valley Community Development Department shall be notified. A qualified archaeologist (that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology) shall be retained to determine the significance of the discovery. Based on the significance of the discovery, the professional archaeologist shall present options to the City and project applicant for protecting the resources.

The City and the project applicant shall consider mitigation recommendations presented by a qualified archaeologist (as described) for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and the project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The project applicant shall be required to implement any mitigation necessary for the protection of cultural resources.

Timing/Implementation: As a condition of project approval for any future development proposals within the project area, and implemented during construction activities

Enforcement/Monitoring: City of Grass Valley Community Development Department

MM 3.5.1d

The Native American community will be notified of any unanticipated and accidental discoveries of prehistoric or historic Native American cultural resources and will monitor activities associated with determining the significance of any discoveries as agreed to by the City of Grass Valley in consultation with the Native American community.

Timing/Implementation: As a condition of project approval for any future development proposals within the project area, and implemented during construction activities

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

Enforcement/Monitoring: City of Grass Valley Community Development Department

MM 3.5.1e If human remains are discovered, all work shall be halted immediately within 50 feet of the discovery, the City of Grass Valley Community Development Department shall be notified, and the Nevada County Coroner must be notified, according to Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.

Timing/Implementation: As a condition of project approval for any future development proposals within the project area, and implemented during construction activities

Enforcement/Monitoring: City of Grass Valley Community Development Department

Implementation of **MM 3.5.1a** would ensure that impacts on the identified significant cultural resources located within the Berriman property west of SR 49 would not be adversely affected by future development that may occur. Mitigation measure **MM 3.5.1b** would ensure that cultural resource studies are prepared for developments in areas that have not had previous studies prepared and previously prepared cultural studies remain accurate. Mitigation measures **MM 3.5.1c**, **MM 3.5.1d**, and **MM 3.5.1e** would reduce potential impacts on undiscovered resources to **less than significant**.

Paleontological Resources (Standard of Significance 2)

Impact 3.5.2 Future development in the project area could result in the potential damage or destruction of undiscovered paleontological resources. This impact is considered **potentially significant**.

A search of the University of California Museum of Paleontology collections database for the proposed project area did not identify any evidence of paleontological resources. Pedestrian surface survey of portions of the project area did not identify any paleontological resources. In addition, the geography and geological age of the area suggest that it is not sensitive for paleontological resources. Regardless, there is a potential to uncover previously unknown paleontological resources during future development that may occur following implementation of the project. This is considered a **potentially significant** impact.

Mitigation Measures

MM 3.5.2 Should any potentially unique paleontological resources (fossils) be encountered during future development activities, work shall be halted immediately within 50 feet of the discovery, the City of Grass Valley Community Development Department shall be immediately notified, and a qualified paleontologist shall be retained to determine the significance of the discovery.

The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and the project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The project applicant shall be required to implement any mitigation necessary for the protection of paleontological resources.

Timing/Implementation: As a condition of project approval for any future development proposals within the project area, and implemented during construction activities

Enforcement/Monitoring: City of Grass Valley Community Development Department

Implementation of mitigation measure **MM 3.5.2** will reduce impacts on currently undiscovered paleontological resources to **less than significant**.

3.5.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative setting associated with the proposed project includes the growth anticipated in the Grass Valley General Plan and any other approved, proposed, planned, and other reasonably foreseeable projects or development not already accounted for in the General Plan. Developments and planned land uses, including the proposed project, would cumulatively contribute to known and unknown cultural resources and paleontological resources in Nevada County. The Setting subsection provides an overview of cultural resources and the history of the region.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Undiscovered Prehistoric Resources, Historic Resources, and Human Remains (Standards of Significance 1 and 3)

Impact 3.5.3 Future development in the project area could result in the potential disturbance of undiscovered cultural resources. This impact is considered **potentially significant**.

Although no proposals for development have been identified within the project area, it is likely that some undeveloped portions of the project area may develop at some point in the future. In addition, other development activities could occur elsewhere within the City's SOI. Subsequent land use activities associated with potential development within the project area and other parts of the City would include grading and construction activities and new urban land uses, which could result in the potential disturbance of undiscovered cultural resources. Additional development in the project area is already permitted by Nevada County and would be expected to occur in the future, whether or not the annexation area or remainder of the project area is annexed into the City. The annexation of the annexation area into the City limits has been envisioned in the City's General Plan and the Sphere of Influence Plan. Any future development or proposed projects within the project area would be required to undergo

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

environmental review and archaeological and cultural assessment. In addition, implementation of standard mitigation measures, such as **MM 3.5.1a** through **MM 3.5.1e** and City General Plan policies would reduce the project area's contribution to cumulative impacts to prehistoric and historic resources and human remains to a level that is considered **less than significant**.

Mitigation Measures

No additional mitigation required.

Paleontological Resources (Standard of Significance 2)

Impact 3.5.4 Future development in the project area could result in the potential damage or destruction of undiscovered paleontological resources. This impact is considered **potentially significant**.

It is likely that the undeveloped land within the project area would develop in the future. Additional development would already be permitted by Nevada County and is expected to occur in the future, whether or not the area is annexed into the City. Subsequent land use activities associated with potential development could include increased construction and urban land uses and could thus result in the potential disturbance of undiscovered cultural resources. The annexation of the annexation area into the City limits has been envisioned in the City's General Plan and the Sphere of Influence Plan. Any future development or proposed projects within the project area would have to undergo environmental review and paleontological assessment. In addition, implementation of standard mitigation measures, such as **MM 3.5.2**, would reduce the annexation area's contribution to cumulative impacts to paleontological resources to a level that is considered **less than significant**.

Mitigation Measures

Implementation of **MM 3.5.2** will reduce cumulative impacts on paleontological resources to **less than significant**.

REFERENCES

- City of Grass Valley. 1999. *City of Grass Valley 2020 General Plan*.
- _____. 1998. *Background Report City of Grass Valley General Plan*.
- Day, Hollis W. 1998. *Archaeological Addendum for the North Star Timber Harvest Plan*. Report on file, Northeast Information Center, California State University, Sacramento.
- Derr, Eleanor H. 1998. *Grass Valley General Plan Update, Nevada County: Cultural Resources Evaluation and Sensitivity Study*. Report on file, Northeast Information Center, California State University, Sacramento.
- Ferrier, Douglas C. 1990. *North Star Property Archaeological Resources*. Report on file, Northeast Information Center, California State University, Sacramento.
- Jensen, Peter M. 1997. *Archaeological Survey, 5.7-Acre Subdivision of APN 22-280-07, South of Grass Valley, Nevada County, California*. Report on file, Northeast Information Center, California State University, Sacramento.
- _____. 1999. *Archaeological Inventory Survey of the Bear River Mill Site Development Project, Approximately 135 Acres South of Grass Valley, Nevada County, California*. Report on file, Northeast Information Center, California State University, Sacramento.
- _____. 2000. *Archaeological Survey, Jiannino Property, c. 11.6 Acres*. Report on file, Northeast Information Center, California State University Sacramento, California.
- Jensen, Sean Michael. 2006. *Archaeological Inventory Survey, Berriman Ranch Development Project, c. 121 acres, Nevada County, California*. Report on file, Northeast Information Center, California State University, Sacramento.
- Leonhard, Scott. 1992. *Archaeological Survey Report for the Berriman THP*. Report on file at Northeast Information Center, California State University, Sacramento.
- _____. 1997. *Archaeological Site Record for the Mary Anne Mine (CA-Nev-961-H)*. Report on file at Northeast Information Center, California State University, Sacramento.
- Lindstrom, Susan G. 1990a. *A Cultural Resource Evaluation of the Carriage House Residential Development Grass Valley, California Nevada County*. Report on file, Northeast Information Center, California State University, Sacramento.
- _____. 1990b. *Archaeological Site Record for the Carriage House Ditch System (P-29-1456-H)*. Report on file, Northeast Information Center, California State University, Sacramento.
- _____. 1990c. *Archaeological Site Record for the Holt Sawmill (P-29-1457-H)*. Report on file, Northeast Information Center, California State University, Sacramento.
- Pacific Municipal Consultants (PMC). 2005. *Archaeological Survey Report for the SR49/Crestview Drive Intersection Project*. Prepared for Caltrans, District 3. July 2005.

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

Ritter, Eric W. The Archaeology of 4-Pla-101, the Spring Garden Ravine Site. In *Archaeological Investigations in the Auburn Reservoir Area, Phase II-III*, edited by Eric W. Ritter, pp 270-538. Ms. on file, National Park Service San Francisco.

Windmiller, Ric. 1999. *Cultural Resources Inventory, North Star Property, Nevada, County, California*. Report on file, Northeast Information Center, California State University, Sacramento.

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

This section describes the geology, soils, and mineral characteristics of the project area and surrounding area and provides an analysis of the proposed project's potential to expose people and development to geologic hazards and unstable soils and result in soil erosion as well as the loss of significant mineral resources. This section is based primarily on information obtained from the *City of Grass Valley 2020 General Plan Background Report* (1998), the *Soil Survey of Nevada County Area, California* (NRCS 1975), the *Preliminary Geologic Hazards Report for the Village and Southhill* (Holdrege & Kull 2008), a Geotechnical Report prepared for APN 29-350-12 (Sierra Geotechnical 2008), and the *Preliminary Geotechnical Engineering Report for Berriman Ranch* (Holdrege & Kull 2006).

3.6.1 EXISTING SETTING

GEOLOGY AND TOPOGRAPHY

Geologic Conditions

The project site is located in the Sierra Nevada Foothills, on the western side of the Sierra Nevada geomorphic province. The Sierra Nevada province is an elongated, northwest-trending structural block that is tilted upward to form a steep scarp above the adjacent Basin and Range province to the east. The western slope of the Sierra Nevada dips gently westward and extends beneath sediment of the Great Valley province. Continual uplift and erosion of the Sierra Nevada contributes to sediment in the Great Valley.

The western foothills of the Sierra Nevada consist of a complex assemblage of igneous and metamorphic rocks. The regional structure of the foothills is characterized by the north-northwest-trending Foothills Fault System, a feature formed during the Mesozoic era (between 65 million and 230 million years before present [MYBP]) in a compressional tectonic environment. Normal faulting occurred in the region during the Late Cenozoic (last 9 million years), resulting in normal faulting which occurred coincident with some segments of the older faults near the project site.

According to the City's General Plan Background Report (1998), the western portion of the project area is underlain by massive diabase, while the eastern portion is underlain by quartz diorite, tonalite, trondhjemite, and quartz monzonite.

Topography

The topography of California is generally made up of eleven geomorphic provinces. The project area lies on the western slope of the Sierra Nevada geomorphic province, which is dominated by a westerly-tilted fault block extending 400 miles in a northwesterly direction from the Mojave Desert in the south to the Cascade Range in the north. The extensive uplift of the block on its eastern border created much steeper relief on the eastern side of the range compared to the western side. Consequently, drainages on the eastern flank tend to be steeper and narrower than those on the western flank.

Project area elevations range from approximately 2,200 to 2,700 feet above mean sea level. The area generally slopes toward the west. Topographic maps and aerial photos of the area indicate that a portion of its topography has been significantly altered by cuts and fills and earthen impoundments due to the operation of prior facilities. For example, much of the project site east of State Route (SR) 49 has been previously graded, predominantly associated with historic lumber milling operations. In addition, some development has occurred including

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

manufacturing, commercial and residential uses in the northeastern portion of the project area. Land west of SR 49 remains largely undeveloped aside from scattered large-lot residential uses.

Geologic Hazards

Seismicity

By definition in the Alquist-Priolo Act, a fault is potentially active if it has shown evidence of surface displacement during Quaternary time (the last 1.6 million years). There are several active or potentially active faults in the region surrounding the project site, including the Cleveland Hill Fault (28 miles northwest), Dunnigan Hills Fault (54 miles southwest), an unnamed fault located near Emigrant Gap (13 miles east), and another regional fault (unnamed) near Stampede Reservoir (50 miles northeast). Several known active faults, including the Green Valley Fault, the Hayward Fault, and the San Andreas Fault, lie approximately 100 to 130 miles to the southwest of the project site.

The Foothills Fault System, located between Oroville and Folsom, is technically considered to be a potentially active system due to the relatively recent Spenceville and Oroville earthquakes. However, recent studies along the Bear Mountain fault segment of the system near Auburn indicate that the seismic hazard related to the system is very low. Due to these recent measurements, the lack of recent movement along the majority of the system, and the lack of tectonic plate movement in the fault system, it is unlikely (although not improbable) that a large magnitude earthquake would occur in this fault system.

The Wolf Creek Fault Zone is located within 1 mile west of the site; however, this fault zone is considered to be inactive by the California Geological Survey since it has not experienced any relative movement in the past two million years.

Although ground movement can be felt in the Grass Valley area from earthquakes at intermediate distances (i.e., the Truckee earthquake of 1968) and from distant earthquakes (i.e., the Winters-Vacaville 1892 event), the project site is in a region of low seismicity and a low rate of recurrence (Holdrege & Kull 1999). According to the City General Plan EIR (1999), Grass Valley is not within an Alquist-Priolo zone as defined in Division of Mines and Geology Special Report 42 and is rated as a low-intensity earthquake zone. A low-intensity zone is defined by the US Geological Survey (USGS) as an area that is likely to experience an earthquake measuring 5.0–5.9 in magnitude on the Richter Scale and a maximum intensity of VI or VII on the Modified Mercalli scale (see **Table 3.6-1**).

TABLE 3.6-1
MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

Richter Magnitude	Modified Mercalli Scale	Effects of Intensity
0.1–0.9	I	Earthquake shaking not felt
1.0–2.9	II	Shaking felt by those at rest.
3.0–3.9	III	Felt by most people indoors, some can estimate duration of shaking.
4.0–4.5	IV	Felt by most people indoors. Hanging objects rattle, wooden walls and frames creak.
4.6–4.9	V	Felt by everyone indoors, many can estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle and glasses clink. Doors open, close and swing.

Richter Magnitude	Modified Mercalli Scale	Effects of Intensity
5.0–5.5	VI	Felt by all who estimate duration of shaking. Sleepers awoken, liquids spill, objects are displaced, and weak materials crack.
5.6–6.4	VII	People frightened and walls unsteady. Pictures and books thrown, dishes and glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.5–6.9	VIII	Difficult to stand. Waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, and elevated tanks twist and fall.
7.0–7.4	IX	General fright as people are thrown down, hard to drive. Trees broken, damage to foundations and frames. Reservoirs damaged, underground pipes broken.
7.5–7.9	X	General panic. Ground cracks, masonry and frame buildings destroyed. Bridges destroyed, railroads bent slightly. Dams, dikes and embankments damaged.
8.0–8.4	XI	Large landslides, water thrown, general destruction of buildings. Pipelines destroyed, railroads bent.
8.5+	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

Source: CGS 1994

Slope Instability and Subsidence

The stability, or instability, of a slope is greatly dependent on factors such as gradient, available water content, existing vegetation, and stresses (natural and anthropomorphic) affecting the slope. According to the City General Plan EIR, unstable soils and geologic conditions have historically resulted from vegetation removal associated with wildfires, timber harvesting, mining, and grading as part of road building and site development. In general, the project area slopes toward the west, particularly in the western portion where there is a steep slope. Topographic maps and aerial photos indicate that portions of the project area's topography have been significantly altered during past lumber mill operations, including cuts and fills to create earthen impoundments.

Land subsidence is the loss of surface elevation due to removal of subsurface support. Although mineral and gas extraction can and do result in subsidence, it is more common for subsidence to occur as a result of groundwater extraction in excess of groundwater recharge. According to the City General Plan EIR, if improper grading or cut and fill occurs, or if development is attempted on extremely steep slopes, subsidence or other unstable soil conditions could occur.

Volcanic Hazards

Volcanoes in the western conterminous United States are concentrated mainly along the Cascade Range in Northern California. Hazards associated with these volcanoes include lava flows, pyroclastic flows (flows of rock fragments and ash mixed with gas), ash, and mudflows.

The nearest volcano to the project site is Lassen Peak, approximately 92 miles to the north. Lassen Peak, with an elevation of 10,457 feet, last erupted during the years 1914–1917. Because Grass Valley is located at such a distance south of the volcano, it was not significantly affected by the eruptions. Since 1917, activity at Lassen Park has been limited to occasional emissions of steam from vents in the sides of the mountain. The local area lacks evidence of recent volcanic activity. Likewise, any evidence of nearby geothermal activity is absent.

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

SOILS

The Natural Resource Conservation Service's (NRCS) Web Soil Survey identifies nine soil types in the study area. Each soil type is described below (NRCS 2013). See **Figure 3.6-1**.

Ao – Alluvial land, clayey. This is a moderately well drained soil that occurs in drainageways and floodplains between 300 and 4,000 feet amsl. The capacity of the most limiting layer to transmit water is low (0.00 to 0.06 inches per hour [in/hr]). This soil type is derived from alluvium derived from mixed metabasic and/or granitic rocks.

Ct – Cut and fill land. This soil type is associated with disturbed lands in the study area.

HnE – Hoda sandy loam, 15 to 50 percent slopes. This is a well-drained soil that occurs on the backslopes of mountains between 2,000 and 3,500 feet amsl. The depth to the restrictive feature is estimated to be more than 80 inches. This soil type is derived from weathered granodiorite.

HrC – Horseshoe gravelly loam, 9 to 15 percent slopes. This is a well-drained soil that occurs on the summits of stream terraces between 1,500 and 4,000 feet amsl. The depth to the restrictive feature (strongly contrasting textural stratification) is estimated to be 48 to 60 inches. This soil type is derived from stratified sandy and gravelly alluvium.

MrC – Musick sandy loam, 5 to 15 percent slopes. This is a well-drained soil that occurs on the backslopes of hills between 2,000 and 3,500 feet amsl. The depth to the restrictive feature (paralithic bedrock) is estimated to be 40 to 100 inches. This soil type is derived from weathered granodiorite.

MrE – Musick sandy loam, 15 to 50 percent slopes. This is a well-drained soil that occurs on the backslopes of hills between 2,000 and 3,500 feet amsl. The depth to the restrictive feature (paralithic bedrock) is estimated to be 40 to 100 inches. This soil type is derived from weathered granodiorite.

MsE – Musick-Rock outcrop complex, 5 to 50 percent slopes. This is a well-drained soil that occurs on the backslopes of mountains and hills between 2,000 and 3,500 feet amsl. The depth to the restrictive feature (paralithic bedrock) is estimated to be 40 to 100 inches. This soil type is derived from weathered granodiorite and is interspersed with granitic rock outcrops.

Pr – Placer diggings. This soil type is associated with disturbed lands in the study area.

SIB – Sites loam, 2 to 9 percent slopes. This is a well-drained soil that occurs on the backslopes of hills between 2,000 and 4,000 feet amsl. The depth to the restrictive feature (paralithic bedrock) is estimated to be 40 to 80 inches. This soil type is derived from metabasic residuum weathered from metasedimentary rock.

SID – Sites loam, 15 to 30 percent slopes. This is a well-drained soil that occurs on the backslopes of hills between 2,000 and 4,000 feet amsl. The depth to the restrictive feature (paralithic bedrock) is estimated to be 40 to 80 inches. This soil type is derived from metabasic residuum weathered from metasedimentary rock.

SmE – Sites very stony loam, 15 to 50 percent slopes. This is a well-drained soil that occurs on the backslopes of hills between 2,000 and 4,000 feet amsl. The depth to the restrictive feature (paralithic bedrock) is estimated to be 40 to 80 inches. This soil type is derived from metabasic residuum weathered from metasedimentary rock.

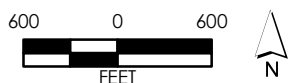
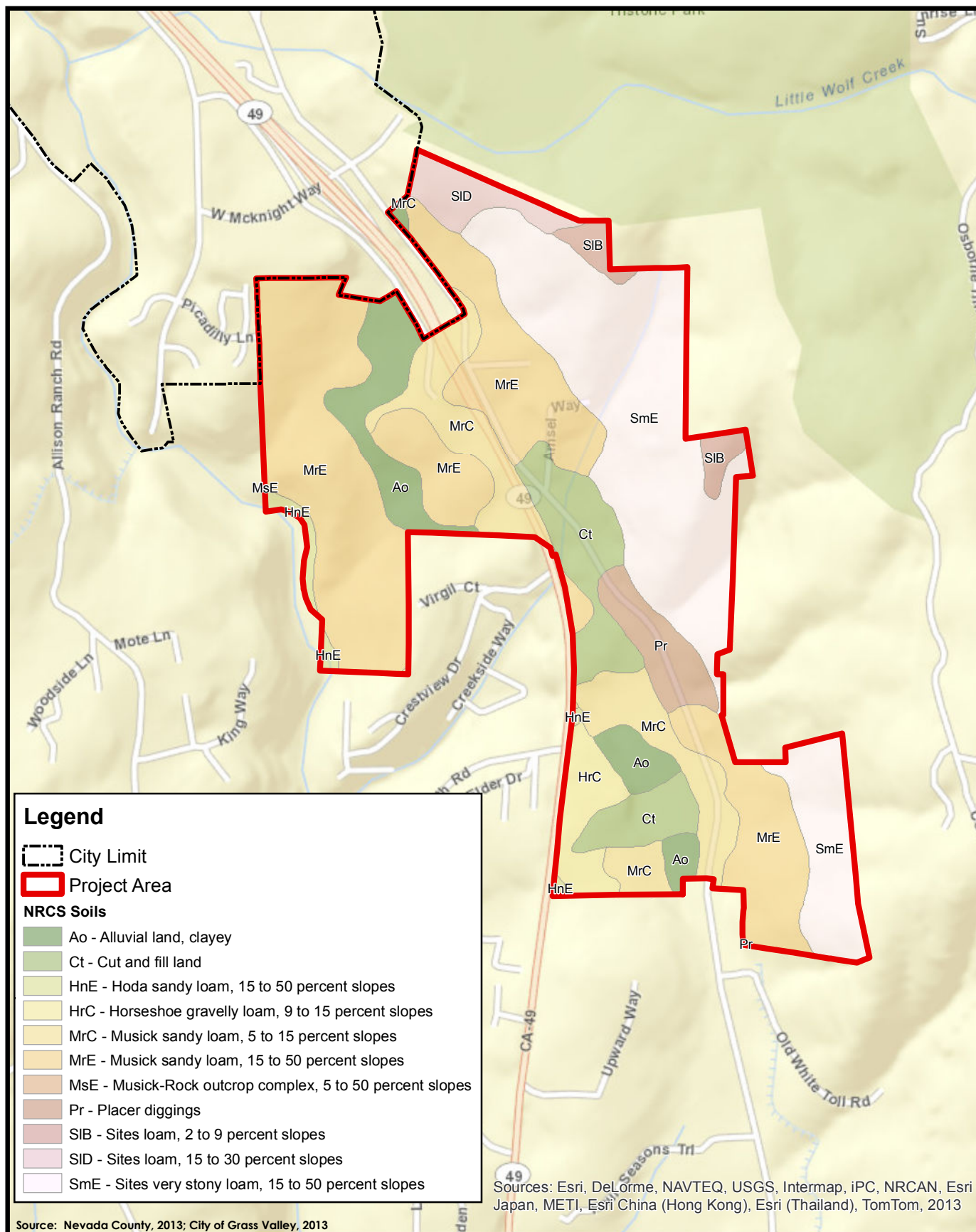


Figure 3.6-1
NRCS Soils

MINERAL RESOURCES

The project area is located in the Grass Valley Mining District (Holdrege & Kull 2008, p. 14). This district was an area of intensive gold mining activity dating back to 1849 when placer gold deposits were discovered in the sediments along Wolf Creek and nearby drainages. Mineral resources, particularly gold, have played a major role in the history of Nevada County and Grass Valley. Metals produced in the Grass Valley area since 1850 include lode gold, chromite, crushed stone, and placer gold (City of Grass Valley 1998). Portions of the project area were mined under several claims in the 1800s and early 1900s. Initially, the project area was hard rock mined from the mid 1800s to the early 1900s, mainly east of La Barr Meadows Road. The Galena and Bullion mines were the main mines at the project site (Carlton Engineering 2005, p. ix). In the mid 1900s, a portion of the project area was used for the production of lumber and wood products west of La Barr Meadows Road. Currently, there are no known active mining claims on the project site.

The California State Surface Mining and Reclamation Act (SMARA) of 1975 identifies five categories for use in classifying the state's lands. The project site is located in an area designated as being within a Mineral Resource Zone 2b (MRZ-2b), indicating that the area contains significant mineral deposits. According to the General Plan Mineral Management Element (1999), the area identified as the Grass Valley South Area, which encompasses the project area, sits atop a series of cavity-filling quartz-carbonate-ankerite veins containing free gold and lesser amounts of lead, copper, zinc, and tungsten. Although many veins have been mined (some workings extend to about 11,000 feet deep), significant amounts of gold are likely to exist at yet deeper levels (City of Grass Valley 1999, Mineral Management Element, p. 4). There are no current gold mining operations in the project area or the immediately surrounding parcels. The Mineral Management Element (Map B) does not identify any of the project area as being within a designated area targeted for mining conservation.

3.6.2 REGULATORY FRAMEWORK

STATE

Alquist-Priolo Earthquake Faulting Zone Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (prior to January 1, 1994, called the Alquist-Priolo Special Studies Zones Act – CCR, Title 14, Section 3600) sets forth the policies and criteria of the State Mining and Geology Board that governs the exercise of governments' responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The policies and criteria are limited to potential hazards resulting from surface faulting or fault creep within Earthquake Fault Zones delineated on maps officially issued by the State Geologist. Working definitions include:

Fault – A fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side.

Fault Zone – A zone of related faults, which commonly are braided and sub parallel, but may be branching and divergent. A fault zone has a significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles.

Sufficiently Active Fault – A fault that has evidence of Holocene surface displacement along one or more of its segments or branches (last 11,000 years).

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

Well-Defined Fault – A fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The geologist should be able to locate the fault in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

“Sufficiently active” and “well defined” are the two criteria used by the State to determine if a fault should be zoned under the act.

Seismic Hazards Mapping Act

This act, passed in 1990, addresses earthquake hazards from non-surface fault ruptures, which may include liquefaction and seismically induced landslides. Areas in California that have the potential for such hazards are included in the mapping program established in this act.

National Pollutant Discharge Elimination System Permit

The State Water Resources Control Board (SWRCB) administers regulations and permitting for the US Environmental Protection Agency (55 CFR 47990) for pollution generated from stormwater under the National Pollutant Discharge Elimination System (NPDES). There are nine Regional Water Quality Control Boards (RWQCBs) that implement the SWRCB's jurisdiction and require that an operator of any construction activities with ground disturbances of 1.0 acre or more obtain a General Permit through the NPDES Stormwater Program. The General Permit requires that the implementations of best management practices (BMPs) be employed to reduce sedimentation into surface waters and control erosion. The preparation of a stormwater pollution protection plan (SWPPP) addresses control of water pollution that includes the effects of sediments in the water during construction activities. These elements are further explained in Section 3.8, Hydrology and Water Quality.

California Building Code

The California Code of Regulations, Title 24, provides minimum standards for building design and safety for the state. The California Building Code (CBC) applies to construction in the state and is based on the International Building Code, which is used throughout the country.

The state earthquake protection laws (California Health and Safety Code Section 19100 et seq.) require structures to be designed to resist the forces of strong winds and earthquakes. Specific safety and design requirements are set forth in the CBC.

The California Building Code now includes a new procedure for calculating structural design for earthquake hazards. This is based on the U.S. Geological Survey maps located in the CBC that show contours of the ground acceleration values applied to the entire United States. Calculating the seismic design force is now based on these mapped accelerations (Ss: Short Period Spectral Response Acceleration). The Ss value is used to define the seismic design force required for each project site. Grass Valley falls between the 50 and 60 acceleration contours (Figure 16135.5(3), 2010 CBC).

LOCAL

City of Grass Valley General Plan

Issues pertaining to geology and soils are addressed in the Safety Element of the City of Grass Valley General Plan (1999), while issues pertaining to mineral resources are addressed in the

Mineral Management Element. Since the project area is not within an area designated for mining conservation, the policies of the Mineral Management Element do not apply. The following General Plan policy helps to provide mitigation for potential geology and soil impacts.

Policy 4-SP: Based on location or probable need, require development plans in mined areas to include in-depth assessments of potential safety, including mining-related excavations, and health hazards and accompanying mitigation measures.

A discussion of the project's consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

City of Grass Valley Development Code

Chapter 17.10 of the City's Development Code is intended to carry out the policies of the General Plan by regulating land uses and structures. Specifically for the purposes of this section, the Development Code provides requirements aimed at maintaining public health and safety through zoning and building practices. Chapter 17.42 provides regulations for mining within the City. Chapter 17.54 of the Development Code provides guidelines for hillside and ridgeline development. Article 6 of the Development Code provide site development regulations, which ensure that construction projects within the City follow regulations for grading, erosion, and sediment control. Proper implementation of these regulations mitigates potential impacts associated with slope instability.

3.6.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The City of Grass Valley has determined that a project may have significant impacts on geology, soils, or mineral resources if it does any of the following:

- 1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving:
 - a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
 - b. Strong seismic ground shaking.
 - c. Seismic-related ground failure, including liquefaction.
 - d. Landslides.
- 2) Result in substantial soil erosion or the loss of topsoil.

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

- 3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, collapse or be located on expansive soil, as defined in the California Building Code, creating substantial risks to life or property.
- 4) Be located on expansive soil, as defined in the California Building Code (1994), creating substantial risks to life or property.
- 5) 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.
- 6) 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.
- 7) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

As described in Section 2.0, Project Description, of this DEIR, annexation of any portion of the project area would require connection to the City's wastewater system and abandonment of existing individual septic systems. No new septic systems would be constructed in the project area as a result of the proposed project. Therefore, the project would have no impact related to standard of significance 5, and this issue will not be addressed further in the DEIR.

METHODOLOGY

The following impact analysis is based on review of the City of Grass Valley General Plan EIR, the Soil Survey of Nevada County, and geotechnical studies prepared for previously proposed development projects on the project area, including the *Preliminary Geotechnical and Geological Hazards Report for Bear River Mill Site, Nevada County, CA* (Holdrege & Kull 1999), (see **Appendix 3.6-1**), the updated *Preliminary Geologic Hazards Report for the Village at SouthHill* (Holdrege & Kull 2008) (see **Appendix 3.6-2**), the *Preliminary Geotechnical Engineering Report for Berriman Ranch* (Holdrege & Kull 2006) (see **Appendix 3.6-3**), and the *Geotechnical Report for APN 29-350-12* (Sierra Geotechnical 2008) (see **Appendix 3.6-4**), as well as various other geologic publications and maps available from the California Geological Survey that are relevant to the project area and surrounding region. Additional information was acquired from any future project applicant and local, state, and federal agencies. A detailed list of sources for information utilized during preparation of this analysis is included in the reference section, located at the end of this section of the DEIR.

PROJECT IMPACTS AND MITIGATION MEASURES

Seismic Hazards (Standard of Significance 1)

Impact 3.6.1 Future development of the project area could expose structures and people to substantial adverse effects involving the rupture of a known earthquake fault, strong seismic ground shaking, and seismic-related ground failure, including liquefaction. This impact is considered **less than significant**.

As described previously, although there are several active and potentially active faults in the region surrounding the project area, it is within an area of low seismicity, with a low rate of recurrence, and is not within an Alquist-Priolo zone as defined in Division of Mines and Geology

Special Report 42. In addition, all future development in the project area (including structures, roadways, and infrastructure) would be required to comply with the CBC seismic design force standards for the Grass Valley area. Compliance with these standards would ensure that structures are designed and constructed to withstand expected seismic activity and associated potential hazards, including strong seismic ground shaking and seismic-induced ground failure (i.e., liquefaction, lateral spreading, landslide, subsidence, and collapse), thereby minimizing risk to the public and property.

Further, individual development projects would be required, per Development Code Section 17.60.040, to prepare and submit to the City a site-specific soil/geotechnical report as part of the grading permit application process. Such reports would identify site-specific geologic hazards such as liquefaction potential and would include site design and construction recommendations to mitigate for such hazards. Finally, individual development projects in the project area would also be subject to further project-level CEQA analysis, which would ensure that all feasible mitigation would be implemented to reduce seismic hazard impacts.

Based on the low seismic potential of the area, the dense bedrock below the surface, and compliance with existing City regulations, the exposure of structures and people to seismic-related hazards is considered a **less than significant** impact.

Mitigation Measures

None required.

Unstable and Expansive Soils (Standards of Significance 3 and 4)

Impact 3.6.2 Future development of the project area could result in structures and/or infrastructure being located on unstable geologic units or soils, or on soils that could become unstable as a result of the project, creating substantial risk to life or property. This impact would be **less than significant**.

Subsidence

Ground subsidence not associated with seismic activity usually occurs as a result of excessive groundwater extraction. While the Grass Valley area contains many individual wells, groundwater supplies from fractured rock sources are highly variable in terms of water quantity and water quality and are an uncertain source for large-scale residential development (DWR 2003: 159). Excessive groundwater pumping is not present in the project area. Furthermore, the Nevada Irrigation District, which would provide water service to future development in the project area, does not utilize groundwater. Therefore, implementation of the proposed project would not contribute to groundwater extraction that could result in subsidence elsewhere. There would be no impact related to ground subsidence.

Slope Instability/Landslide

The project area slopes generally westward with elevations ranging from approximately 2,200 to 2,700 feet above mean sea level. There are steep slopes present in portions of the project area that could be unstable or become unstable during site development. In addition, cut or fill slopes created during site development could become unstable if not properly engineered.

Per Municipal Code Chapter 17.54, Hillside and Ridgeline Development, no development is permitted where slopes exceed 30 percent. This chapter also provides specific requirements and

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

guidelines for building sites with a slope of 20 percent or greater that encourage the retention of natural topographic features and the use of appropriate grading practices for hillside areas. In addition, Municipal Code Section 17.62.040 provides specific standards for the design and construction of excavations and fills to ensure slope stability and preserve natural contours. Furthermore, all future development on the project site would be required to comply with applicable building codes (UBC and CBC) and commonly accepted engineering practices. Compliance with these existing state and local regulations would ensure that future development is engineered and constructed to prevent slope failure. This impact would be less than significant.

Expansive Soils

As described previously, the majority of the project area is underlain by soils of the Hoda-Chaix-Musick association, which exhibit low to moderate shrink/swell potential. However, individual parcels within the project area could contain soils that exhibit high shrink/swell characteristics when subjected to moisture variation. Structure foundations, roadways, and utilities constructed in the project area could be damaged by differential settlement due to expansion and contraction. As described under Impact 3.6.1, Municipal Code Section 17.60.040 will require future development projects on the project site to prepare and submit to the City site-specific soil/geotechnical reports as part of the grading permit application process. Such reports would identify the expansive potential of site soils and provide site design and construction recommendations to mitigate for associated hazard, if necessary. Compliance with the requirements of this Municipal Code section would minimize potential hazards associated with expansive soils. This impact would be less than significant.

Mitigation Measures

None required.

Geotechnical Hazards Related to Past Mining Activity (Standard of Significance 3)

Impact 3.6.3 Future development of the project area could result in structures and/or infrastructure being located on soils that are unstable due to past mining activity. This impact is considered **less than significant**.

The project area and surrounding parcels have been subject to extensive mining operations. Historic Bullion Consolidated Mining Company holdings are located in the southern portion of the annexation area. The Bullion Shaft is located across present-day La Barr Meadows Road in the southeastern portion of the project area. Mining maps indicate that the shaft dips to the east away from the area. Relic foundations for the shaft headworks can be observed on both sides of La Barr Meadow Road. According to a 2008 preliminary geologic hazards report prepared for the previously proposed Village at SouthHill project, shallow mine workings and former processing operations extended onto the project site and mine waste was deposited on the site as a result of past mining activities. Additional unknown mining shafts could be located in other portions of the project area as well, which could have resulted in areas of unstable soils.

As previously described, future development projects on the project site would be required to prepare and submit to the City site-specific soil/geotechnical reports as part of the grading permit application process (Municipal Code Section 17.60.040). Such reports would identify site-specific soil and geologic hazards such as ground instability due to past mining activities and would provide specific recommendations to ensure the site is stabilized for construction. Such measures would likely include the physical closure of shallow mining excavations. In addition,

General Plan Policy 4-SP requires development plans in mined areas to include in-depth assessments of potential safety, including mining-related excavations and accompanying mitigation measures.

Compliance with the requirements of Section 17.60.040 and General Plan Policy 4-SP would ensure that mining shafts and other mining features that could undermine the stability of the project area are identified and appropriate measures implemented to mitigate associated hazards prior to development. This impact would be **less than significant**.

Mitigation Measures

None required.

Soil Erosion (Standard of Significance 2)

Impact 3.6.4 Construction activities associated with future development of the project site could result in soil erosion or the loss of topsoil. This impact is considered **potentially significant**.

Future development of the project area would involve earth-moving activities, which may increase the potential for soil erosion and soil instability through the removal of vegetation and the exposure of soil to the forces of wind and water. The potential for soil erosion and instability would be compounded by the presence of steep slopes on portions of the project area. As described previously, project area soils are generally well-drained with slow to moderate permeability rates, indicating that project area soils are susceptible to erosion.

Municipal Code Chapter 17.62, Grading, Erosion, and Sediment Control Standards, contains standards for the proper conduct of grading operations and site development activities to minimize soil erosion by preventing and controlling fugitive dust, ensuring proper engineering and construction of drainage improvements, excavations, and fills, restricting grading activities during the rainy season, minimizing the removal of vegetation, and requiring revegetation and slope surface stabilization.

Future development on the project area would also be subject to the requirements of the Clean Water Act, which include filing a Notice of Intent under the state's National Pollutant Discharge Elimination System (NPDES) General Construction Permit. The NPDES establishes erosion control methods that would be implemented and monitored during construction activities to minimize erosion and sedimentation. Project proponents would be required to prepare and submit for approval a stormwater pollution prevention plan (SWPPP) to the State Water Resources Control Board. These plans would address erosion potential during construction and would contain best management practices (BMPs) to reduce soil erosion associated and water quality degradation.

Compliance with the existing state and local regulations described above would minimize soil erosion in the project area as a result of potential future development. This impact would be **less than significant**.

Mitigation Measures

None required.

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

Mineral Resources (Standards of Significance 6 and 7)

Impact 3.6.5 Future development of the project area could potentially preclude access to significant mineral resources and/or result in the establishment of land uses that may be incompatible with future mining activities. This impact is considered **less than significant**.

All areas in Grass Valley and the General Plan Planning Area, which include the project area, have been classified by the California Geological Survey as being within a Mineral Resource Zone (MRZ-2b), which is a zone containing potentially significant mining deposits. Free gold and lesser amounts of lead, copper, zinc, and tungsten are known to exist within the project area.

As described under Impact 3.6.3, known mine shafts are located on and adjacent to the project area immediately east of La Barr Meadows Road. In addition, the old Diamond Tunnel, which was associated with hard rock gold mining, crosses beneath SR 49 near the center of the project area. Further, absent the preparation of a mineral resource report for the project area, it is not known how many existing mining shafts within the project area might contain significant mineral deposits.

However, General Plan Mineral Management Element Action 15 and Chapter 17.42 of the City's Development Code allow subsurface mining in all land use designations throughout the City, subject to obtaining a use permit from the Planning Commission. In addition, the Mineral Management Element allows surface access to subsurface mining in compatible General Plan designations. Therefore, the inclusion of additional land in the City's Sphere of Influence and annexation of land to the City limits would not directly result in the loss of access to any mineral resources. Furthermore, the Mineral Management Element (Map B) does not identify any of the project area as being within a designated area targeted for mining conservation. This impact would be **less than significant**.

Mitigation Measures

None required.

3.6.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

Geotechnical impacts tend to be site-specific rather than cumulative in nature. For example, seismic events may damage or destroy a building on the project site, but the construction of a development project on one site would not cause any adjacent parcels to become more susceptible to seismic events, nor can a project affect local geology in such a manner as to increase risks regionally. Impacts regarding surficial deposits, namely erosion and sediment deposition, however, can be cumulative in nature within a watershed. See Section 3.8, Hydrology and Water Quality, of this Draft EIR for a discussion of cumulative water quality impacts from soil erosion.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Geology and Soil Impacts (Standards of Significance 1, 2, 3, and 4)

Impact 3.6.6 The annexation of land to the City of Grass Valley will not likely expose structures and people to substantial adverse effects involving the rupture of a know fault, strong seismic ground shaking, seismic-related ground failure (including liquefaction), or landslides. This impact is considered **less than cumulatively considerable**.

As noted under Impact 3.6.1, there are no known active faults in the immediate vicinity of the project area, and the potential for strong ground shaking and associated hazards is minimal. Additionally, any future development in the project area and throughout the City would be subject to CBC seismic design force standards as mandated in the City's General Plan Safety Element (Implementation Action 11-SI) as well as further project-level CEQA review.

As noted under Impact 3.6.2, subsidence is not an issue in the project area or in other areas of the City, as groundwater resources are limited to localized rock fractures and excessive pumping does not occur. Further, slope instability is regulated through the designation of areas with steep slopes as open Space, the restrictions of Municipal Code Chapter 17.54, and the design and construction standards of Municipal Code Section 17.62.040. Finally, although portions of the project area and the City could contain expansive soils, all future development projects would be required to prepare site-specific soil/geotechnical reports as part of the City's grading permit application process, which would identify areas of expansive soils and provide measures necessary to stabilize soils prior to construction.

As noted under Impact 3.6.3, soils on the project site may be susceptible to erosion, and construction activities would expose soils to the erosive forces of wind and water. However, future development projects in the project area and throughout the City would be subject to the standards of Municipal Code Chapter 17.62 and the state's NPDES General Construction Permit, which would require the implementation of proper grading operations and best management practices to minimize soil erosion and sedimentation.

Therefore, the proposed project would not contribute to any cumulative impacts related to geologic or soil impacts. This impact would be **less than cumulatively considerable**.

Mitigation Measures

None required.

Cumulative Mineral Resource Impacts (Standards of Significance 6 and 7)

Impact 3.6.7 Annexation of land to the City of Grass Valley could potentially preclude access to significant mineral resources on the site and/or result in the establishment of land uses that may be incompatible with future mining activities in the project area. This impact is considered **less than cumulatively considerable**.

As noted under Impact 3.6.5, all areas in Grass Valley and the General Plan Planning Area are classified as being within an MRZ-2b zone, which are areas containing potentially significant mining deposits. There are no ongoing mining operations in the project area, but there are in other portions of the City, including at the Empire Mine east of the project area. However,

3.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

General Plan Mineral Management Element Action 15 and the City's Mining and Reclamation Ordinance allow for subsurface mining in all land use designations throughout the City, subject to obtaining a use permit from the Planning Commission. Therefore, inclusion of land within the City's Sphere of Influence and annexation of land into the City limits would not necessarily result in the loss of access to mineral resources. Finally, the Mineral Management Element (Map B) does not identify any of the project area as being within a designated area targeted for mining conservation. Therefore, this impact would be **less than cumulatively considerable**.

Mitigation Measures

None required.

REFERENCES

- California Department of Water Resources (DWR). *California's Groundwater Update*. Bulletin No. 118. Sacramento: Resources Agency. <http://www.groundwater.water.ca.gov/bulletin118/update2003/index.cfm>.
- California State Legislature. 1997. Amendment, Alquist-Priolo Earthquake Fault Zoning Act, California Public Resources Code.
- CGS (California Geological Survey, Division of Mines and Geology). 1994. Fault Activity Map of California.
- Carlton Engineering. 2005. *Final Removal Action Work Plan, Bear River Mill Site, Grass Valley, California*. Prepared for Bear River Development Company. September 2005.
- City of Grass Valley. 1998. *City of Grass Valley 2020 General Plan Background Report*.
- . 1999. Draft Environmental Impact Report, City of Grass Valley General Plan Update.
- . 1999. *City of Grass Valley 2020 General Plan*.
- Holdrege & Kull. 1999. *Preliminary Geotechnical and Geologic Hazards Report for Bear River Mill Site, Nevada County, CA*.
- . 2006. *Preliminary Geotechnical Engineering Report for Berriman Ranch, APN 22-140-03 and 22-160-03, Nevada County, California*.
- . 2007. *Summary of Soil Characterization Sampling at Berriman Ranch Property*.
- . 2008. *Preliminary Geologic Hazards Report for the Village at Southhill, Nevada County, CA*.
- NRCS (United States Department of Agriculture, Natural Resources Conservation Service). 1975. *Soil Survey of Nevada County Area, California*.
- . 2008. Web Soil Survey. Accessed August 6, 2013. <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- Sierra Geotechnical. 2008. *Geotechnical Report for 11759 La Barr Meadows Road APN 29-350-12 Nevada County, California*.

3.7 HAZARDS AND HAZARDOUS MATERIALS

3.7 HAZARDS AND HAZARDOUS MATERIALS

This section addresses a variety of potential impacts of the proposed project related to hazardous materials, airport operations, and emergency response. This section is based on numerous technical studies and investigations conducted for portions of the project area prepared for previously proposed development projects. A full list of these studies and other sources is provided at the end of this section.

See Section 3.6, Geology, Soils, and Mineral Resources, for a discussion of seismic and geologic hazards including hazards related to historic mining activity. See Section 3.8, Hydrology and Water Quality, for a discussion of flooding hazards. See Section 3.11, Public Services, for a discussion of wildland fire hazards.

3.7.1 EXISTING SETTING

HAZARDOUS SUBSTANCES DEFINED

The term hazardous substance refers to both hazardous materials and hazardous wastes. A material is defined as hazardous if it appears on a Substances Control List (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. The California Department of Toxic Substances Control (DTSC) defines hazardous waste, as found in California Health and Safety Code Section 25141(b), as follows:

Its quantity, concentration, or physical, chemical, or infectious characteristics: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; (2) pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed.

Hazardous materials include liquids, solids, and gases that, by themselves or when placed in contact with other materials, can result in contamination of soil or water, poisonous vapors, fires, or explosions. An inadvertent release of hazardous materials can enter the environment via air, soil transport, or surface runoff. When improperly stored or disposed, hazardous materials can contaminate soil and groundwater or surface water and pose a general health hazard to the population via vapors, fumes, water, or explosions. Hazardous materials are used and created by industry every day and are commonly found in household items such as insecticides, motor oil, and cleaning fluids.

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.

3.7 HAZARDS AND HAZARDOUS MATERIALS

Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are a group of chlorinated, aromatic hydrocarbons that are toxic to the liver and are linked to cancer. PCBs were manufactured in the United States from 1929 to 1979 for use in electrical products. Principal uses were oil-insulated transformers, capacitors, and fluorescent light ballasts. The use of PCBs in transformers and ballasts was banned after July 1, 1979, but it is not always clear as to the production date and/or content of the oil in those products that have been withdrawn from use.

HAZARDOUS MATERIALS RELEASE SITES

A search of known hazardous materials release sites was conducted for the project area using the DTSC's Envirostor database and the State Water Resource Control Board's (SWRCB) Geotracker database. The DTSC and the SWRCB identified a total of 17 known sites of hazardous materials usage, storage, or contamination, 7 of which are located in the project area and 10 located in the immediate vicinity (see **Figure 3.7-1**). These sites, including location and current status, are summarized in **Table 3.7-1**.

TABLE 3.7-1
KNOWN HAZARDOUS MATERIAL RELEASE SITES IN THE VICINITY OF THE PROJECT AREA

Site No.	Facility Name	Location	Case Type ¹	Potential Media Affected	Potential Contaminant(s) of Concern	Status ²
Within Project Area						
1	Rare Earth Landscape Materials (previously part of the Bear River Saw Mill)	11780 La Barr Meadows Road (APN 22-160-04)	Voluntary Cleanup	Soil	Arsenic	Active as of 6/21/12
2	Bear River Saw Mill	La Barr Meadows Road, 0.5 miles south of Grass Valley (APN 22-160-33)	Voluntary Cleanup	Soil	Arsenic, Lead, TPH-Motor Oil	Inactive – Action Required as of 9/4/08
3	Nevada County Facilities Management (previously part of the Bear River Saw Mill)	12627 State Route 49 (APNs 22-331-05, -06, -07, -09, -12)	Voluntary Cleanup	Soil	Arsenic	Active as of 6/21/12
4	La Barr Meadows Road Property	11759 La Barr Meadows Road (APN 09-620-12)	Voluntary Cleanup	Sediments, Soil	Arsenic, Lead	Inactive – Action Required as of 10/31/08

3.7 HAZARDS AND HAZARDOUS MATERIALS

Site No.	Facility Name	Location	Case Type ¹	Potential Media Affected	Potential Contaminant(s) of Concern	Status ²
Within Project Area						
5	Sierra Pacific Industries – Bear River Saw Mill	12270 La Barr Meadows Road	Cleanup Program Site	None Specified	Dioxins, Polynuclear Aromatic Hydrocarbons	Completed – Case Closed as of 10/6/04
6	Hansen Brothers Enterprises	11727 La Barr Meadows Road	LUST Cleanup Site	Aquifer Used for Drinking Water Supply	Gasoline	Completed – Case Closed as of 11/12/02
7	Industrial Asphalt	11825 La Barr Meadows Road	LUST Cleanup Site	Soil	Diesel	Completed – Case Closed as of 1/5/01
Immediately Surrounding Project Area						
8	Osborne Hill Road Property	Osborne Hill Road near intersection of Hwy 174 (east of project area)	Voluntary Cleanup	Soil	Arsenic, Lead, Mercury and Compounds	Inactive – Action Required as of 1/11/11
9	Allison Ranch Road Street Sweeper Waste	Allison Ranch Road (west of project area)	Cleanup Program Site	None Specified	None Specified	Completed – Case Closed as of 4/12/05
10	Fred Anderson Chevron #9-0453	107 McKnight Way E (northwest of project area)	LUST Cleanup Site	Aquifer Used for Drinking Water Supply	Diesel	Completed – Case Closed as of 1/31/01
11	PG&E	788 Taylorville Road (northwest of project area)	LUST Cleanup Site	Aquifer Used for Drinking Water Supply	Gasoline	Completed – Case Closed as of 1/12/10
12	TOSCO Refining Co Bulk Plant #0248 Grass Valley	720 South Auburn Street (northwest of project area)	Cleanup Program Site	Groundwater Not Used for Drinking Water	Benzene, Diisopropyl Ether, Diesel, Ethanol, Ethyl-Tert-Butyl Ether, Gasoline, Lead, MTBE/TBA/Other Fuel Oxygenates, Terbutylazine, Tert-Amyl-Methyl Ether, Toluene, Xylene	Open – Verification Monitoring as of 10/10/01
13	Kutchar Property	717 Auburn Street S (northwest of project area)	LUST Cleanup Site	Aquifer Used for Drinking Water	Gasoline	Completed – Case Closed as of 1/30/97

3.7 HAZARDS AND HAZARDOUS MATERIALS

Site No.	Facility Name	Location	Case Type ¹	Potential Media Affected	Potential Contaminant(s) of Concern	Status ²
Within Project Area						
14	Unocal #0248	720 Auburn Street S (northwest of project area)	LUST Cleanup Site	Aquifer Used for Drinking Water	Heating Oil/Fuel Oil	Completed – Case Closed as of 8/7/01
15	Grass Valley Waste Treatment Plant	556 Freeman Lane (northwest of project area)	Voluntary Cleanup	Soil	Contaminated Soil, Mercury and Compounds	Certified/Operation and Maintenance as of 1/31/96
16	North Star Property (aka North Star Mine)	Bounded by Allison Ranch Road on east and Old Auburn Road on west (northwest of project area)	Voluntary Cleanup	Soil	Arsenic	Inactive – Action Required as of 9/10/08
17	Wastewater Treatment Plant	556-B Freeman Lane (northwest of project area)	LUST Cleanup Site	Soil	Diesel	Completed – Case Closed as of 5/2/01

Source: DTSC 2013; SWRCB 2013

1 – Case Type Definitions per DTSC and SWRCB:

Voluntary Cleanup: Identifies sites with either confirmed or unconfirmed releases, and the project proponents have requested that the DTSC oversee evaluation, investigation, and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

LUST Cleanup Site: Identifies sites where an unauthorized release from an underground petroleum storage tank has occurred.

2 – Status Definitions per DTSC and SWRCB:

Active: Identifies that an investigation and/or remediation is currently in progress and that the DTSC is actively involved, either in a lead or support capacity.

Inactive – Action Required: Identifies non-active sites where, through a Preliminary Endangerment Assessment (PEA) or other evaluation, the DTSC has determined that a removal or remedial action or further extensive investigation is required.

Completed – Case Closed: A closure letter or other formal closure decision document has been issued for the site.

Open – Verification Monitoring: Remediation phases are essentially complete and a monitoring/sampling program is occurring to confirm successful completion of cleanup at the site (e.g., no "active" remediation is considered necessary or no additional "active" remediation is anticipated as needed. Active remediation system(s) has/have been shut-off and the potential for a rebound in contaminant concentrations is under evaluation).

Certified – Operation and Maintenance: Identifies sites that have certified cleanups in place but require ongoing Operation and Maintenance (O&M) activities. The Certified O&M status designation means that all planned activities necessary to address the contamination problems have been implemented. However, some of these remedial activities (such as pumping and treating contaminated groundwater) must be continued for many years before complete cleanup will be achieved. Prior to the Certified O&M designation, all institutional controls (e.g., land use restrictions) that are necessary to protect public health must be in place.

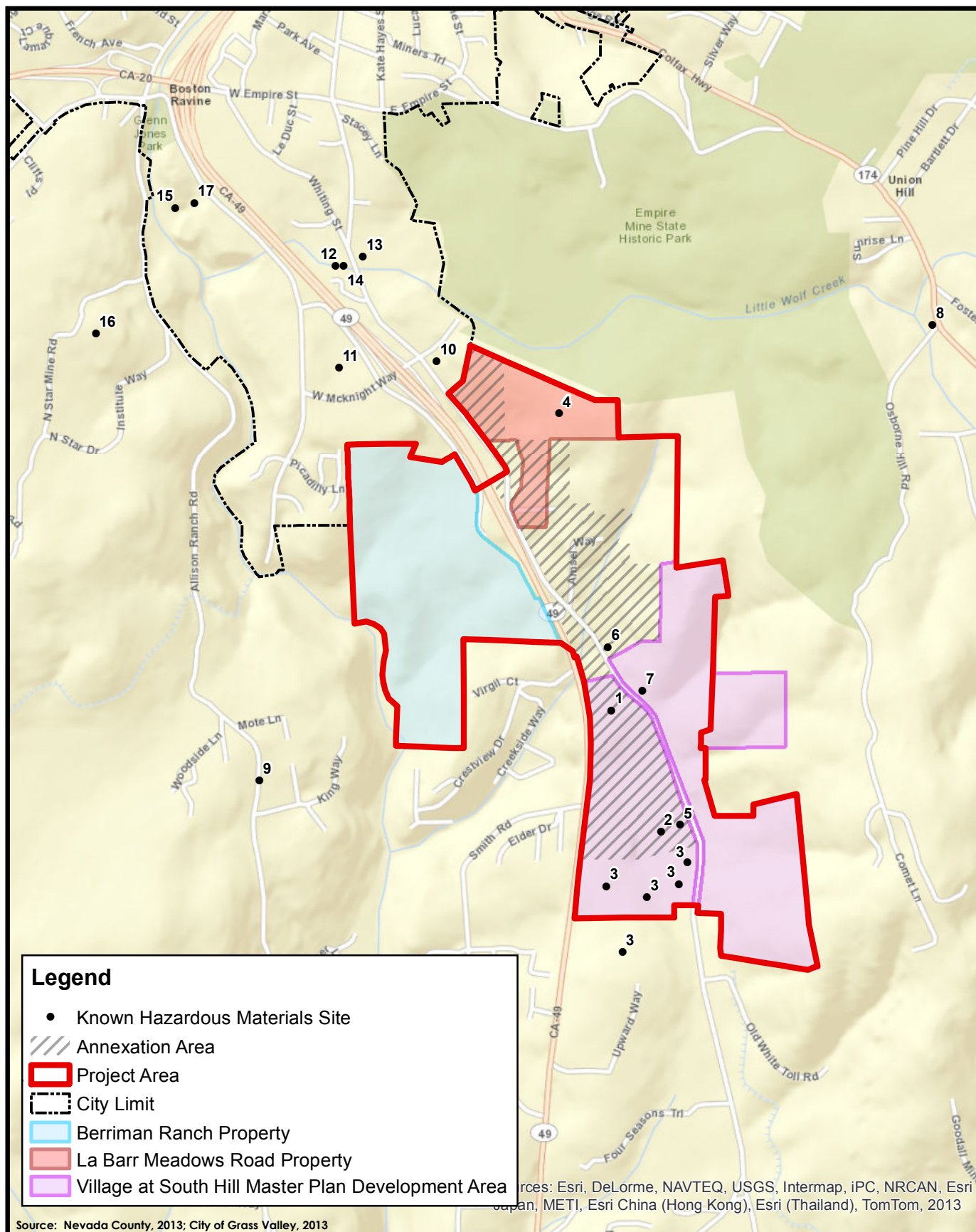


Figure 3.7-1
Known Hazardous Materials Sites

PAST DEVELOPMENT PROPOSALS

Various development projects have been proposed within the project area, some have been approved but not constructed and others have not been approved. One such project, the former Village at SouthHill Master Plan Development, was proposed in the southern portion of the project area west of La Barr Meadows Road (APNs: 22-250-12, 22-282-02, 22-282-03, 22-282-04, 22-282-05, 22-14-30, 22-200-36, 22-200-37, 22-230-52, 22-230-53, 22-160-04, 22-160-05, 22-160-06, 22-130-10, and 22-292-01) and includes portions of the former Bear River Mill site (see **Figure 3.7-1**). The Bear River Mill site was a lumber mill that operated between approximately 1956 and 1978 and is a known hazardous materials release site, as defined by the DTSC (see **Table 3.7-1**).

Currently the former SouthHill site is predominantly vacant. Soon after the mill was vacated in 1978, the facility structures were disassembled and removed from the site. Presently only concrete foundations and earthen impoundments remain. Debris is present in the vicinity of the historic mill operations and rock fill and stockpiles are located in the central portion of the site. The rock may have originated from nearby historic gold mining activities or from another offsite source. Waste rock originating from hard rock mining activities may pose a regulatory health concern because of possible elevated levels of heavy metals such as arsenic, mercury, or lead.

A Phase I Environmental Site Assessment (ESA) was conducted in 1999 for the former SouthHill project. The Phase I ESA also identified the site as being listed on multiple hazardous materials release databases, including the Solid Waste Information System (SWIS) and Cal-Sites. Previous environmental investigations have been conducted at the site since 1988. Lead regulatory agency oversight was deferred from the SWRCB and the DTSC to the Nevada County Division of Environmental Health. Historically recognized environmental conditions at the site include the following:

- The SouthHill area is listed as being on the SWIS and Cal-Sites databases. Previous environmental investigations have been conducted for the area since 1988. Lead regulatory agency oversight was deferred from the Central Valley Regional Water Quality Control Board (CVRWQCB) and the Department of Toxic Substances Control to the Nevada County Division of Environmental Health. Historically recognized environmental conditions in the SouthHill area include the following:
 - Soil and concrete containing PCP at concentrations exceeding the California Department of Health Services–approved cleanup criteria of 3 milligrams per kilogram (mg/kg, or parts per million, ppm) were present in the Bear River Saw Mill area. These materials have been excavated and disposed off-site at a Class I landfill.
 - Hydrocarbons in the diesel range were detected in shallow soils within a limited area at the shop area and the tepee burner area. The maximum level of diesel detected was 320 mg/kg at a depth of 3 feet near the shop. Hydrocarbons in the diesel range were not detected in groundwater in the Bear River Saw Mill sub-area.
 - Hydrocarbons in the diesel range were discovered in soils, down to groundwater depth, in the vicinity of the former aboveground fuel tank area. The highest concentration of hydrocarbons in the diesel range was detected in a near surface sample at a concentration of 880 mg/kg.
 - Hydrocarbons in the diesel range were detected in shallow groundwater in the immediate vicinity of the former diesel tank location. The results of quarterly groundwater monitoring performed thus far have also shown that low but detectable

3.7 HAZARDS AND HAZARDOUS MATERIALS

levels of hydrocarbons in the diesel range have been identified in groundwater at a monitoring well (MW-5) located 100 feet down-gradient of the former tank location. However, analytical procedure errors may have reported false positives in the past.

- Hydrocarbons in the diesel range were detected in fill area 1 fill material at concentrations up to 390 mg/kg. The black, oily sheen reported present on seep water emanating from fill area 1 was most likely due to the presence of tannins and lignins in the water. Material at fill area 1 was removed from the site in 1993.
- Hydrocarbons in the diesel and motor oil ranges were detected in fill material in fill area 2. Concentrations of hydrocarbons in the diesel range have varied from 50 mg/kg to 420 mg/kg. Motor oil (tentatively identified) was detected at concentrations ranging from 340 mg/kg to 690 mg/kg.
- PCP and TCP were detected at low levels (below cleanup criteria level) in near surface sediments in pond 3. These chemicals were not detected in sediments collected from below the 0.5-foot depth.
- The CVRWQCB still considers the diesel groundwater contamination in the former aboveground fuel tank area an open issue. The CVRWQCB requires the current owner to comply with periodic groundwater monitoring and reporting. Early groundwater monitoring events reported false positives due to incorrect analytical procedures. However, the four groundwater monitoring events, conducted after the analytical procedures were modified to account for biogenic compounds, which can cause false positive detection of petroleum products, indicate diesel concentrations below the laboratory detection limits.
- Site reconnaissance discovered three empty regulated substance containers and several illicitly dumped solid waste piles including several tires, construction rubble, and one used automotive battery.
- There are currently nine groundwater monitoring wells located in the vicinity of the former diesel fuel and gasoline storage tanks of the Bear River Saw Mill. Pending the end of their useful life, these groundwater monitoring wells will have to be properly decommissioned by a licensed well driller (see **Figure 3.7-1**).
- Two older pole-mounted electricity transformers were observed in the SouthHill area. Both were within the string of utility poles running along the east side of La Barr Meadows Road. Neither transformer carried the newer, blue "ORM-D" sticker indicating they had been certified "No PCBs." Pacific Gas and Electric (PG&E) does not maintain a comprehensive list of PCB status in transformers, unless they have been recently tested and confirmed to be uncontaminated by PCBs. Therefore, the two PG&E pole-mounted transformers should be assumed to contain PCBs until proven otherwise.
- The SouthHill area is located in a historic gold mining area. Former mine adits (glory holes) may have been located in the area in the past. These mine adits may have been backfilled or obscured by vegetation. Additionally, stockpiles of apparent mine waste rock are located in the area. Waste rock originating from hard rock mining activities may pose a regulatory health concern because of possible elevated levels of heavy metals such as arsenic, mercury, or lead. However, no obvious staining associated with mineralization of these minerals or stressed vegetation was apparent.

A Removal Action Work Plan was prepared for the SouthHill Area as well as the area of the project area east of La Barr Meadows Road in 2005 to address the remediation of what is predominantly mine waste rock from historical mining activities in the area. A No Further Action Required letter was issued for the site by the Central Valley Regional Water Quality Control Board on October 6, 2004.

LA BARR MEADOWS ROAD PROPERTY

The La Barr Meadows Road property, which makes up the northern portion of the project area east of State Route (SR) 49, was previously the site of hard rock gold mining and currently contains mine waste stockpiles, former mine works, and a solid waste disposal area. Soil sampling completed in the area detected arsenic and lead at concentrations of potential concern. A Removal Action Work Plan (RAW) was prepared in 2007 that provided recommended procedures for remediation of the site, which generally include excavation of contaminated soils for off-site disposal. The RAW and a Notice of Exemption from CEQA were circulated for public review and comment in 2008 (SCH No. 2008098087).

BERRIMAN RANCH PROPERTY

The Berriman Ranch property, which makes up the portion of the project area west of SR 49, was previously used primarily as a residence, dairy, and orchard in the first half of the twentieth century. The property was also the site of the Horseshoe Mine claim in the late nineteenth century, which included a 350-foot-deep vertical mine shaft and a hoisting and pumping plant. The site is currently developed with one residence, a barn, and associated outbuildings.

A Phase I ESA was prepared for the property in 2007, identifying several recognized environmental conditions (REC), including placer and hard rock mining excavations and associated stockpiles of spoils, the potential use of pesticides in the area of the former orchard and pastures, and a layer of white surface soil over a large portion of the site. According to the property owner, the white soil layer originated from previous irrigation using water from Little Wolf Creek, which contained sediment and/or mill tailings from the workings of the Empire Mine. Soil sampling and testing indicate that elevated metals concentrations are present in the soil.

NATURALLY OCCURRING HAZARDOUS MATERIALS

Ultramafic Rock

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 earth's surface. 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, which often contains 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.

3.7 HAZARDS AND HAZARDOUS MATERIALS

The potential occurrence and distribution of naturally occurring asbestos fibers in Nevada County is documented by the California Department of Conservation, Division of Mines and Geology (DOC). According to the DOC *General Location Guide for Ultramafic Rocks in California* (2000), the project area is not located near any areas that are likely to contain ultramafic rock.

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. A site-specific investigation would be needed to accurately determine if bedrock or soil contains asbestos fibers. According to the City of Grass Valley General Plan Environmental Impact Report (1999), exposure to asbestos in soils is an issue of growing concern. Many foothill communities are studying this problem to determine how serious the potential health risk is and what can be done to reduce any potential risk resulting from developing on serpentine soils. At this time, the significance of this potential problem and any appropriate mitigation measures is inconclusive.

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 United States Environmental Protection Agency (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 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 potential is Zone 1. According to the EPA Map of Radon Zones (2008), Nevada County is in Zone 2, which indicates a level between 2 and 4 pCi/L and is considered a moderate potential for radon.

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

3.7.2 REGULATORY FRAMEWORK

FEDERAL

Environmental Protection Agency

The United States Environmental Protection Agency (EPA) provides leadership in the nation's environmental science, research, education and assessment efforts. The EPA works closely with other federal agencies, state and local governments, and Native American tribes to develop and enforce regulations under existing environmental laws. The EPA is responsible for researching and setting national standards for a variety of environmental programs, and it delegates to states and tribes the responsibility for issuing permits and for the monitoring and enforcement of compliance.

Other Federal Agencies

Other federal agencies that regulate hazardous materials include the Occupational Safety and Health Administration (OSHA), the Department of Transportation (DOT), and the National Institute of Health (NIH). The following federal laws and guidelines pertain to hazardous materials.

- Clean Water Act
- Clean Air Act
- Occupational Safety and Health Act
- Federal Insecticide, Fungicide, and Rodenticide Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Guidelines for Carcinogens and Biohazards
- Superfund Amendments and Reauthorization Act Title III
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Toxic Substances Control Act

STATE

California Environmental Protection Agency

At the state level, the California Environmental Protection Agency (CalEPA) is the “umbrella” agency under which a number of the state’s environmental agencies operate. These subordinate agencies include the California Air Resources Board, the Department of Pesticide Regulation, the Department of Toxic Substances Control, the California Department of Resources Recycling and Recovery (CalRecycle), the Office of Environmental Health Hazard Assessment, and the State Water Resources Control Board. CalEPA establishes rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

3.7 HAZARDS AND HAZARDOUS MATERIALS

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

Table 3.7-2 lists federal and state regulatory agencies that oversee hazardous materials handling as well as the statutes and regulations that these agencies administer.

**TABLE 3.7-2
SUMMARY OF HAZARDOUS MATERIALS REGULATORY AUTHORITY**

Regulatory Agency	Authority
Federal Agencies	
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 Clean Water 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 and Regional Water Quality Control Board	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	Hazardous Materials Release Response Plans/Inventory Law
Department of Food and Agriculture	Food and Agriculture Code
State Fire Marshal	Uniform Fire Code, CR Title 19

LOCAL

City of Grass Valley General Plan

The City of Grass Valley's General Plan includes a Safety Element that establishes goals and policies regarding geologic hazards, flood hazards, fire hazards, emergency access and

evacuation routes, airports, naturally occurring asbestos, and exposure to hazardous materials. The Safety Element does not identify any sources of especially hazardous or unusual toxic wastes in the City. The State of California, Nevada County, and the City of Grass Valley have established regulations regarding the handling, storage, transportation, use, and disposal of toxic or hazardous materials to reduce any potential hazardous or human health-related impacts.

A discussion of the project's consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

City of Grass Valley Development Code

Chapter 17.44 of the Grass Valley Development Code provides standards for home occupation. Specifically, Section 17.44.100 prohibits the storage of explosive, flammable, or hazardous materials in home-based businesses beyond those normally associated with a residential use. Commercial storage of any explosives, flammable or hazardous materials are regulated and monitored by the Fire Department. Additionally, the Development Code, Table 2-10, requires use permits for most uses that typically utilize hazardous materials. Proper implementation of these requirements would mitigate potential impacts associated with the storage of hazardous materials within areas currently developed or proposed for development.

3.7.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

For the purposes of this Draft EIR, the following criteria were used in determining whether the proposed project would result in a significant impact as a result of hazards and hazardous materials. An impact would be considered significant based on the following thresholds of significance identified by the City of Grass Valley and consistent with Appendix G of the State CEQA Guidelines:

- 1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 2) 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.
- 3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- 4) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

3.7 HAZARDS AND HAZARDOUS MATERIALS

- 5) For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or a public use airport, result in a safety hazard for people residing or working in the project area.
- 6) For a project located within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.
- 7) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.
- 8) 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.

There are no schools within one-quarter mile of the project area. Therefore, standard of significance 3 will not be addressed further in this section of the DEIR.

The risk to people or structures from wildland fire is addressed in Section 3.11, Public Services. In addition, the project area is not located within 2 miles of a public or private airport. Therefore, standards of significance 5, 6, and 8 will not be addressed further in this section of the DEIR.

METHODOLOGY

The following impact analysis was based on numerous technical studies and investigations conducted for portions of the project area prepared for previously proposed development projects. A full list of these studies and other sources is provided at the end of this section. In addition, the analysis was based on a review of applicable City of Grass Valley General Plan policies, the City of Grass Valley Municipal Code, and the Uniform Building Code.

PROJECT IMPACTS AND MITIGATION MEASURES

Transport, Handling, Use, and Disposal of Hazardous Materials (Standards of Significance 1 and 2)

Impact 3.7.1 Future development that could occur as a result of implementation of the proposed project would include the transport, handling, use, and disposal of hazardous materials that could result in adverse environmental impacts. This impact would **less than significant**.

Construction

The proposed project does not include any development; however, the project would annex a portion of the project area into the City's boundaries and would establish land use designations for the entire project area that would allow future development to occur. The construction and operation of such development would involve limited transport, handling, use, and disposal of hazardous materials. Construction and site preparation would likely involve the use of gasoline, diesel, oils, asphalt, concrete, paint, and similar materials routinely used in construction activities. The use and handling of these hazardous materials would occur in accordance with applicable federal, state, and local laws, including CalOSHA and SWRCB requirements. Additionally, future development projects would be required to prepare a SWPPP that would include standard best management practices for the handling of fuels and oils including measures to minimize the

potential for spills. Therefore, impacts related to the use of hazardous materials during future construction activities on the project area would be **less than significant**.

Operation

The proposed land use designations for the project area include Manufacturing/Industrial (M-I), Business Park, Commercial, Public, Urban Estate Density, Urban Low Density, Urban Medium Density, and Open Space. The M-I designation would allow for a full range of manufacturing/processing, automotive services, warehousing/distribution, and wholesale-retail outlet uses. The Business Park designation would allow for a range of light industrial and commercial land uses. The Commercial designation would allow for all types of retail commercial and commercial service establishments. The proposed residential designations would allow for residential uses at various densities as well as related uses. The Public designation would allow for various noncommercial facilities and services under public sector ownership/control to meet public needs. These may include administrative facilities, public parks, natural areas, community centers, fire stations, schools and school properties, hospitals, and public senior or child-care facilities.

The operation of many of these uses, including industrial, manufacturing, automotive, commercial service, and hospitals and senior care facilities, could involve the transport, handling, use, and disposal of significant amounts of hazardous materials and/or medical wastes. The handling of these substances would be in compliance with all applicable federal, state and local regulations. If quantities exceed established minimums, individual businesses would be required to prepare an inventory of all hazardous substances on-site, a Hazardous Materials Business Plan (HMBP) outlining plans to ensure the safe storage and use of applicable materials, and an emergency contingency plan and site map to ensure proper response in case of a hazardous material release. The Nevada County Department of Environmental Health is the Certified Unified Program Agency (CUPA) for all cities and unincorporated areas of Nevada County and would provide regulatory oversight of all hazardous material use in the project area. Furthermore, the M-I and Business Park land use designations were developed to cluster uses that may use hazardous materials to provide buffers from surrounding uses to minimize public exposure.

The remaining uses, including retail, residential, public facilities, and open space, could involve the transport, handling, use, and disposal of small amounts of routinely used household hazardous materials such as gasoline, propane, oils, paints, solvents, and pesticides. The handling of these substances would be in compliance with all applicable federal, state, and local regulations and according to product labeling. Section 17.44.100 of the City's Development Code prohibits the storage of explosive, flammable, or hazardous materials in home-based businesses beyond those normally associated with a residential use.

Impacts related to the use of hazardous materials during operation of future uses would be **less than significant**.

Mitigation Measures

None required.

Known Hazardous Materials Release Sites (Standard of Significance 4)

Impact 3.7.2 Future development that could result following implementation of the proposed project could create significant hazards to the public or the

3.7 HAZARDS AND HAZARDOUS MATERIALS

environment due to being located on multiple known hazardous materials release sites. This impact would be **less than significant**.

As described previously, a total of 17 known hazardous materials release sites were identified within the project area or in its immediate vicinity. Of the seven sites identified within the project area, remediation has been completed on three and the cases are now closed. Four of the sites are portions of the Bear River Saw Mill site that are now under different ownership and are therefore listed separately. The remaining La Barr Meadows Road property is "inactive," indicating that removal or remedial action is required but has not yet occurred.

Of the ten sites identified near the project area, six have been remediated and the cases are closed; one has been remediated and is being monitored to ensure the remediation was successful, and one has ongoing remedial activities but all other planned activities necessary to address the contamination problems have been implemented. The two remaining sites are "inactive." However, contamination at these sites was limited to the soil and, given their locations and nature of contamination, would not be expected to impact the project area (Kennedy/Jenks 1999).

Bear River Saw Mill

The Bear River Saw Mill site has been thoroughly evaluated and monitored since the saw mill closed in 1978. Numerous reports have been prepared and the SRWCB has overseen water quality monitoring on-site.

The RAW reports that over 30 environmental documents have been generated for site investigations, monitoring, and localized remedial activities of the Bear River Saw Mill site. In summary, the environmental investigations identified and focused their testing on the following locations and chemicals:

- Wood treating chemicals: primarily pentachlorophenol (PCP) at the Bear River Mill area
- Fuels and fuel constituents: primarily diesel from a fuel spill at the Bear River Mill area
- Metals: Arsenic, mercury, lead, and others in native soil, surface water and ground water, and mining waste rock

Wood-Treating Chemicals

Environmental investigations and localized remediation activities have been ongoing on the property since the 1980s, mainly at the former lumber and wood products facilities. These activities include a site investigation in the late 1980s, which found pentachlorophenol (PCP) in exceedance of allowed state PCP levels as a result of the dip tank area of the Bear River Mill in the green chain area. The Department of Health Services approved cleanup in the dip tank area of the concrete and soil under the dip tank, resulting in no PCP detected below 2 feet below ground surface. The area was re-sampled during the testing for the RAW in 2005 at three locations, and no PCP or other semi-volatile compounds were detected at concentrations above their reporting limit in any of the three 3-foot samples. As a result of these cleanup and testing activities, it is determined that there is **no impact** to the soil as a result of the lumber mill activities within the project area.

Fuels

Groundwater monitoring wells were installed in the late 1980s during previous investigations to assess groundwater contamination from diesel fuel spillage at the Bear River Mill site. Based on the investigation results, the RWQCB directed initiation of a monitoring program for fuel contamination. Monitoring of the wells continued into the early 2000s. In December 2001, based on no detection of fuel contamination in the groundwater since 1999, Sierra Pacific Industries requested closure of the monitoring program. The RWQCB issued a "No Further Action" letter upon certification of the destroyed monitoring wells. As a result of these groundwater monitoring activities, it is determined that there is **no impact** to contamination of groundwater at the project area.

Metals

A Removal Action Work Plan was prepared by Carlton Engineering in 2005 to address the remediation of waste, predominantly mine waste rock from historical mining activities at the Bear River Mill site as a component of a 2003 Voluntary Cleanup Agreement (VCA) between Bear River Development Company (the property owner at the time) and the DTSC. The Voluntary Cleanup Agreement Remedial Investigation scope of work focused on:

- Confirming cleanup of wood-treating chemicals;
- Closure of the groundwater monitoring program for the diesel fuel spill
- Characterization of the Bear River Mill area waste piles
- Determining metals concentrations and the extent of mining waste rock
- Determining background metals concentrations in native soil and surface and groundwater

Extensive study of the Bear River Mill site has identified the mine waste rock, suspected mine tailings, and waste piles at the Bear River Mill site as the media of concern with regard to hazardous materials (see **Figure 3.7-1**). The estimated volume of the media of concern is 11,400 cubic yards located in four areas at the project area (Galena Mine, Bullion Mine, the Valley Veneer Plant, and Bear River Mill areas). The chemicals of concern for the Bear River Mill site were determined to be arsenic, lead, and total petroleum hydrocarbons. The human exposure pathways identified for the possible future development within this portion of the project area are ingestion, dermal adsorption, and inhalation. Based on knowledge of the affected media, chemicals of concern, and potential exposure pathways, the following goals were developed.

- Reduction/prevention of direct human contact with media of concern
- Reduction/prevention of media of concern potential impact on surface and groundwater

As part of the 2003 VCA, a Removal Action Work Plan was prepared for remediation of mine waste rock from historic mining activities at the project area. It was determined that if the media of concern were placed under an asphalt cap, such as a parking lot or road, the exposure pathway would be reduced and risk to human health would then be at an acceptable level. In consultation with the Central Valley Regional Water Quality Control Board, the DTSC has determined that capping the media of concern is not a threat to groundwater, as the media as

3.7 HAZARDS AND HAZARDOUS MATERIALS

a whole has a low acid-generating potential. However, periodic groundwater monitoring will be required to verify that arsenic is not leaching from the media of concern and contaminating groundwater. The details of this site cleanup are further detailed in the Final Removal Action Work Plan prepared by Carlton Engineering in 2005 (**Appendix 3.7-1**).

Due to the known hazards still present in the soil on the Bear River Mill site, including arsenic, lead, and petroleum hydrocarbons, future remedial activities are needed to ensure that human health is not negatively affected if this portion of the project area is proposed for development in the future. According to the DTSC, the final Removal Action Work Plan approval letter was sent on September, 28 2005. Final remedy will be to remove piles of mine waste rock and consolidate them under an asphalt cap on-site. Implementation of the Voluntary Cleanup Plan is contingent on approval and construction of future development projects on this portion of the project site. The following items will need to occur in conjunction with grading of the Bear River Mill site:

- Cleanup and inspections of the site
- File a Completion Report with the DTSC
- Survey the hazardous waste cleanup area and record deed restriction accordingly
- Prepare and obtain approval from the DTSC for the Operations and Maintenance Plan, which will identify requirements for mandatory inspections and water quality monitoring
- Enter into a Final Agreement with the DTSC for the cleanup efforts
- Obtain "Certification" of the site from the DTSC
- Subject to 5-year reviews

As a result of these pending actions on the Bear River Mills site, impacts associated with hazardous materials at this location within the project area are considered **potentially significant**.

La Barr Meadows Road Property

As described previously, the La Barr Meadows Road property was the site of hard rock gold mining. Site investigations found mine waste stockpiles, former mine works, and a solid waste disposal area on the property. A Preliminary Endangerment Assessment summarized previous investigations and soil sample laboratory results and concluded that the contaminants of concern on the property are arsenic and lead. A RAW was prepared for the property in 2007 that provided recommended procedures for remediation of the site, which generally include excavation of contaminated soils for off-site disposal. Remediation has not been completed to date, and the property remains a listed hazardous materials release site. Therefore, this impact would be **potentially significant**.

Berriman Ranch Property

Although the Berriman Ranch property does not contain any known hazardous materials release site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, the Phase I ESA completed for the property in 2007 identified several recognized environmental conditions, including placer and hard rock mining excavations and

associated stockpiles of spoils, potential pesticide use, and metal (arsenic, lead, and mercury) contamination of surface soils. The Phase I ESA provided recommended measures to mitigate these RECs, which must be implemented prior to development on this portion of the project area. Therefore, this impact would be **potentially significant**.

Polychlorinated Biphenyl (PCBs)

Existing development within the project area is served by PG&E for electrical service. As indicated by the Phase I ESA prepared for the former SouthHill project, there are older pole-mounted electricity transformers within the project area that can be assumed to have PCB-containing transformers. The removal of any transformers as part of future site development would be handled by PG&E in accordance with existing federal regulations for the handling and disposal of PCBs. Should an accidental release of PCBs occur, emergency response and cleanup would also be the responsibility of PG&E and would be conducted in accordance with all applicable regulations. Therefore, impacts associated with PCB hazards within the project area would be **less than significant**.

Mitigation Measures

MM 3.7.2a Prior to issuance of any grading plans or improvement permits for construction of roads, structures, or infrastructure on the Bear River Mill Site portion of the project area (APNs 22-160-04, -05, -06, -07, -09, -12, and -33), a certification of cleanup shall be obtained.

Timing/Implementation: Prior to approval of building permits

Enforcement/Monitoring: City of Grass Valley Community Development Department; California Department of Toxic Substances Control

MM 3.7.2b Prior to issuance of any grading permit or improvement permits for construction of roads, structures, or infrastructure on the La Barr Meadows Road property portion of the project area (APNs 09-620-10 and -12, 22-150-23 and -30, and 29-290-09), a certification of cleanup shall be obtained.

Timing/Implementation: Prior to approval of building permits

Enforcement/Monitoring: City of Grass Valley Community Development Department; California Department of Toxic Substances Control

MM 3.7.2c All recommendations contained in the Phase I Environmental Site Assessment prepared for the Berriman Ranch property (APNs 22-140-03 and 22-160-03) dated August 7, 2007, shall be implemented prior to issuance of grading permits or improvement permits for construction of roads, structures, or infrastructure in this portion of the project area.

Timing/Implementation: Prior to approval of building permits

Enforcement/Monitoring: City of Grass Valley Community Development Department

3.7 HAZARDS AND HAZARDOUS MATERIALS

Implementation of mitigation measures **MM 3.7.2a** through **MM 3.7.2c** would prevent release of hazardous materials on-site, so as to not pose a safety hazard. With these measures and compliance with other applicable hazardous material regulations, potential release of hazardous materials impacts would be **less than significant**.

Interfere with Emergency Plans (Standard of Significance 7)

Impact 3.7.3 Implementation of the proposed project would not interfere with any adopted emergency response or evacuation plans. This impact would be **less than significant**.

Nevada County prepared an Emergency Operations Plan (EOP) in 2011. The purpose of the EOP is to delineate responsibilities of first responders (fire protection and law enforcement) and other response support organizations for basic natural disasters and man-made emergency incidents in Nevada County. The EOP includes additional plans for specific incidents, including a mass evacuation.

There are no emergency response facilities such as fire or police stations or hospitals located within or adjacent to the project area. However, the site does lie along SR 49, a major highway that is designated as an evacuation route. Construction of future uses on the project site, which could include roadway improvements along SR 49 and/or connecting roadways, could result in temporary slowing of traffic or closure of traffic lanes. Once operational, development of the project area would not interfere with emergency response or evacuation plans.

Should construction activities require temporary closure of all or part of SR 49 or other roadways, alternative routes would, as standard practice, be established for both regular traffic and emergency response vehicles. In addition, the EOP mass evacuation plan directs the Sheriff's Department and fire districts to facilitate movement of traffic along highways and surface streets in support of the California Highway Patrol. The plan includes establishing traffic control points and identifying bottlenecks and road failures, such as construction sites, as well as maintaining county roads to provide additional evacuation routes. Although the construction activities associated with future development of the project area could result in temporary slowing of traffic, it is unlikely that this would interfere substantially with emergency response or evacuation plans. Further, Nevada County's EOP includes plans to handle traffic bottlenecks or blockages during a mass evacuation. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

3.7.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

Hazardous material, human health, and safety impacts as described in CEQA Appendix G are generally site-specific and not cumulative by nature, as impacts generally vary by land use, site characteristics, and site history.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Transport, Handling, Use, and Disposal of Hazardous Materials

Impact 3.7.4 Future development that could result from implementation of the proposed project would contribute to a cumulative increase in the transport, handling, use, and disposal of hazardous materials in the region that could result in adverse environmental impacts. This impact would be **less than cumulatively considerable**.

As discussed in Impact 3.7.1, hazardous materials will be transported to/from the project area and will be used and generated in the project area in association with both existing and potential future uses. Future development of industrial, manufacturing, automotive service, and other commercial uses would contribute to the cumulative use, transport, generation, and need for disposal of hazardous materials in Nevada County. However, all handling of hazardous materials on the project site and throughout the county would be in compliance with all federal, state, and local regulations as well as with individual Hazardous Materials Business Plans, as applicable. The Nevada County Department of Environmental Health, as the CUPA, provides regulatory oversight of all hazardous material use in the county as well as emergency response to accidental releases.

Although the proposed project would contribute to the cumulative transport, handling, use, and disposal of hazardous materials in the county, existing regulations and Nevada County oversight would ensure that this impact would be **less than cumulatively considerable**.

Mitigation Measures

None required.

Known Hazardous Materials Release Sites

Impact 3.7.5 Implementation of the proposed project would contribute to development on lands that are known hazardous materials release sites or which may contain hazardous materials. This impact would be **less than cumulatively considerable**.

As identified in **Table 3.7.1** and discussed in Impact 3.7.2, there are seven known hazardous materials release sites on the project site and ten such sites immediately surrounding the project area. Therefore, future development of the project area would result in the development of lands that are known hazardous materials release sites and could contribute to public exposure to such materials. However, three of the sites identified in the project area have been remediated, and the cases are now closed. The remaining sites include the La Barr Meadows Road property and portions of the Bear River Saw Mill site. Implementation of mitigation measures **MM 3.7.2a** and **MM 3.7.2b** would require implementation of all necessary remediation

3.7 HAZARDS AND HAZARDOUS MATERIALS

activities on these sites prior to development. In addition, mitigation measure **MM 3.7.2c** would require implementation of the Phase I ESA recommendations for the Berriman Ranch property to address all identified recognized environmental conditions prior to development. Further, of the ten sites identified near the project site, eight have been remediated and the remaining would not be expected to impact the project area. Therefore, the proposed project's contribution to this impact would be **less than cumulatively considerable**.

Mitigation Measures

None required.

REFERENCES

- Carlton Engineering, Inc. 2003. *Draft Remedial Investigation Work Plan, Bear River Mill site, Grass Valley, CA.*
- . 2005. *Final Removal Action Work Plan, Bear River Mill Site, Grass Valley, CA.*
- City of Grass Valley. 1999. *Draft Environmental Impact Report, City of Grass Valley General Plan Update.* August 199
- County of Nevada. 2011. *Nevada County and Nevada Operational Area Emergency Operations Plan (EOP).*
- DOC (California Department of Conservation). 2000. *General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos.* Accessed September 19, 2008. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf.
- DTSC (Department of Toxic Substances Control). 2013. *EnviroStor Database, Hazardous Waste and Substances Site List.* Accessed September 24, 2013. <http://www.envirostor.dtsc.ca.gov/public/>.
- EPA (United States Environmental Protection Agency). 2008. *Map of Radon Zones.* Accessed September 19, 2008. <http://www.epa.gov/radon/zonemap/california.htm>.
- FEMA (Federal Emergency Management Agency). 2008. *Flood Map Panels 0602100608D and 0602100616D.* Accessed September 19, 2008. <http://msc.fema.gov/webapp/wcs/stores/servlet/CategoryDisplay?catalogId=10001&storeId=10001&categoryId=12001&langId=-1&userType=G&type=1&dfirmCatId=12009>.
- Holdrege & Kull. 1999. *Preliminary Geotechnical and Geological Hazards Report for Bear River Mill Site, Nevada County, CA.*
- . 2000. *Amendment to Preliminary Geotechnical and Geological Hazards Report for Bear River Mill Site, Nevada County, CA.*
- . 2005. *Preliminary Geotechnical Engineering Report for Crestview Drive/State Route 49 Intersection, Nevada County, CA.*
- . 2005. *Preliminary Endangerment Assessment of La Barr Meadows Property.*
- . 2007. *Phase I Environmental Site Assessment of Berriman Ranch Property.*
- . 2008. *Preliminary Geologic Hazards Report for the Village at South Hill.*
- Kennedy/Jenks Consultants. 1999. *Phase I Environmental Site Assessment Former Bear River Sawmill and Valley Veneer Facility, Grass Valley, California.*
- Office of Planning and Research, State Clearinghouse. 2005. *Notice of Exemption for the Bear River Mill Site Removal Action Workplan.* http://envirostordev.eointeractive.com/regulators/deliverable_documents/5101026237/NOE%20signed%209.28.05.pdf.

3.7 HAZARDS AND HAZARDOUS MATERIALS

State Water Resources Control Board. 2013. GeoTracker. Accessed September 24, 2013.
<http://www.geotracker.swrcb.ca.gov>.

3.8HYDROLOGY AND WATER QUALITY

This section discusses and analyzes surface hydrology and water quality characteristics associated with the proposed project. The availability of water supplies necessary to serve the project is discussed in Section 3.12, Public Utilities. Information provided in this section is based on various plans and technical studies that have been prepared for portions of the project area and are cited as appropriate throughout this section. Copies of these studies may be reviewed at the City Community Development Department. Additionally, information from the City of Grass Valley General Plan Conservation/Open Space Element and other public documents was referenced.

3.8.1 EXISTING SETTING

REGIONAL HYDROLOGY

Grass Valley is situated in the central/western portion of Nevada County, at the point where the western Sierra Nevada foothills separate the low-lying Sacramento Valley from the Sierra Nevada range. The geography of the region is characterized by rolling forested hills incised by steep canyons, and the climate is characterized by cool, wet winters with warm, dry summers.

According to California Department of Water Resources (2005) *Final California Water Plan Update*, the state is subdivided into ten hydrologic regions. The project area is located in the east-central portion of the Sacramento River Hydrologic Region. Geographically, the Sacramento River Hydrologic Region extends south from the Modoc Plateau and the Klamath River watershed near the Oregon border to the Sacramento-San Joaquin River Delta an area of approximately 17.4 million acres (27,200 square miles).

Major reservoirs in the region not only provide water supply but also are the source of recreation, power generation, and other environmental and flood control benefits. In addition, the region has a network of creeks and rivers that convey water for use throughout the region and also provide nesting and rearing ground for major fish and wildlife species.

SURFACE WATER RESOURCES

Wolf Creek, a tributary to the Bear River, runs through Grass Valley in a northeast to southwest direction, where it has undergone considerable channelization and augmentation. Prior to entering and upon leaving the City, the creek remains in its natural course. Wolf Creek abuts the southwestern portion of the project area and is located approximately 2,200 feet west of State Route (SR) 49. Wolf Creek flows south approximately 14 miles to the Bear River, which flows into the Feather River, a major tributary to the Sacramento River.

Project Area Features

The project area is crossed by two minor drainages with surface drainage in an east to west direction toward Wolf Creek. Two ponds, created by earthen dams, exist on the east side of SR 49. According to a wetland delineation prepared by Foothill Associates (2001) for the Bear River Mill site, two intermittent drainage ditches have been excavated along La Barr Meadows Road. These drainage ditches likely function to collect runoff. There are two additional intermittent drainages located near the western boundary of the project area, in the vicinity of the two ponds described below. Additional information on the wetland features present in the project area specific to their suitability for habitat can be found in Section 3.3, Biological Resources, of this DEIR.

3.8 HYDROLOGY AND WATER QUALITY

There are several areas of saturated surface soil, standing water, and wetland vegetation within the project area. Evidence of seasonal ponding and poor drainage is common in the central portion of the project area at the former Bear River Mill site (Holdrege & Kull 2008, p. 10) and in the northwest section of the Berriman Ranch property on the western side of SR 49 (Holdrege & Kull 2006, Figure 1). Surface water drains to two human-made ponds in the interior of the Bear River Mill property (Carlton Engineering 2005, p. 3). Three ponds were originally constructed for the mill operations west of La Barr Meadows Road, but only two of these ponds remain and are located in the west-central portion of the Bear River Mill site. The earth dam for the larger pond had apparently experienced a significant amount of seepage. The dam had been breached at least once, as evidenced by erosion over the top of the dam.

GROUNDWATER RESOURCES

Groundwater development in the fractured rocks of the foothills of the Sierra Nevada is fraught with uncertainty. Groundwater supplies from fractured rock sources are highly variable in terms of water quantity and water quality and are an uncertain source for large-scale residential development (DWR 2003, p. 159).

Some locations in the Grass Valley area may have significant localized groundwater aquifers. Groundwater resources are highly variable with respect to quantity, depth, dependability, and quality. Due to the highly fractured characteristics of regional geology, as well as soil depth and percolation, inconsistent and extremely variable groundwater conditions persist. Per the California Department of Water Resources (2003) Bulletin No 118, titled "California's Groundwater," the subject site does not contain a principal aquifer and is not contained within the boundaries of a defined groundwater basin. The proposed project will be served by the Nevada Irrigation District and will not utilize groundwater.

Geologic hazards investigations performed in the project area identified seepage and/or shallow groundwater in the alluvial areas of the project area. Seepage was commonly observed along the upper surface of the clay and clayey silt. As described above, evidence of seasonal soil saturation is common. Seepage and standing water was observed at the ground surface in and near several marsh areas. Past geologic hazards investigations did not encounter groundwater or seepage at higher elevations.

In many cases, groundwater is controlled by bedrock fractures, which result in groundwater depths and conditions that are virtually unpredictable without performing an extensive hydrogeologic investigation. In other cases, groundwater may lie in perched zones above a resistant rock type or impermeable soil. According to a previous study for the former Bear River Mill site, groundwater was first encountered by drilling at approximately 15 to 25 feet below ground surface and then generally stabilized in well casings to depths 3 to 10 feet higher than that first encountered. This suggests that the shallow water-bearing zone is partially confined by the overlying lower permeability clays and silts in this portion of the project area. Overall, the groundwater gradient in the entire project area has been reported as generally following site topography.

WATER QUALITY

Surface water quality in the Sacramento River watershed, which includes the project area, is generally good. Nonetheless, turbidity, pesticides, and heavy metals affect fisheries and drinking water supplies. Common pollutants in the Sacramento River watershed include unsuitable water temperature, toxic heavy metals (such as mercury, copper, zinc, and cadmium from acid mine

drainage), pesticides, and fertilizer. Section 303(d) of the federal Clean Water Act (CWA) requires states to identify the waters of the State that do not meet the CWA's national goal of "fishable, swimmable" waters and to develop "total maximum daily loads" (TMDLs) for such waters, with oversight of the US Environmental Protection Agency (EPA). A TMDL is a quantifiable assessment of potential water quality issues, contributing sources, and load reductions or control actions needed to restore or protect bodies of water.

According to the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) *2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments*, two creeks in the vicinity of the project site do not meet the CWA's national goal of fishable, swimmable waters: French Ravine and Wolf Creek. French Ravine, which drains into Wolf Creek approximately 2 miles north of the project area, has been identified as containing unusually high amounts of bacteria. Wolf Creek is also listed due to high concentrations of fecal coliform. A TMDL report for the bacteria in French Ravine and the fecal coliform in Wolf Creek has not yet been completed by the Central Valley RWQCB.

CLIMATE AND PRECIPITATION

Precipitation in the foothills region is dependent on both climate and topography. Regional climate in the winter months is dominated by westerly, on-shore flows of moist marine air from the Pacific Ocean. In the summer months, relatively stable high-pressure cells are found over the area. Because of the area's low elevations, mild, wet winters and long, hot summers characterize the local climate. Most of the annual precipitation is received in the winter months and falls as rain. The average annual precipitation for Grass Valley is approximately 53 inches.

FLOODING

According to the National Flood Insurance Program (NFIP), administered by the Federal Emergency Management Agency (FEMA), none of the project area lies within a 100-year floodplain. Grass Valley was mapped by FEMA in 2010 (FEMA Flood Insurance Rate Map Community Panel No. 06057CIND0A; 2010a). The project area was also mapped by FEMA in 2010 (FEMA Flood Insurance Rate Map, Community Panel No. 06057C0633E; 2010b). FEMA has mapped the project area as Zone X, which is listed as areas determined to be outside the 0.2 percent annual chance floodplain (see **Figure 3.8-1**).

DAM FAILURE

Dam failure inundation is the flooding that results from full or partial collapse of a dam. There are several potential causes for such an event, including strong seismic activity. Aside from the potential for direct structural impacts as a result of severe earthquakes, seismic activity may also produce powerful waves within impounded bodies of water, referred to as "seiches," that have the potential to breach dams. Landslides flowing into a reservoir may also be a source of potential dam failure or overtopping.

The Nevada Irrigation District (NID) Scotts Flat Dam forms Scotts Flat Reservoir upstream of the City. According to the City of Grass Valley General Plan EIR (1999a), mapping prepared by the NID illustrates the area projected to be inundated should the dam suddenly fail. Grass Valley and the Grass Valley Planning Area are identified as being outside the inundation area of the Scotts Flat Dam (City of Grass Valley 1999b).

3.8 HYDROLOGY AND WATER QUALITY

Two ponds with earthen dams exist on the former Bear River Mill site. The smaller, southern pond is approximately 0.1 acre in size and is retained by an earth dam along its northern and eastern boundaries. The earthen dam is approximately 225 feet long and approximately 12 feet wide at its crest. The downslope height of the dam is approximately 25 to 30 feet. The outlet structure consists of a 24-inch-diameter corrugated metal pipe whose outfall was directed toward a defunct water conveyance structure that apparently transported water to the adjacent pond.

The larger, northern pond is approximately 0.5 acre in size and is retained by an earth dam along its western boundary. The earth dam is approximately 300 feet long and approximately 10 feet wide at its crest. The downslope height of the dam is approximately 25 to 30 feet. The outlet structure for the larger pond consisted of a 30-inch-diameter corrugated metal pipe located near the northern end of the dam. The outlet structure discharges to an eroded, partially rock-lined, earth swale that drains to the southwest. The earth dam appears to have experienced a significant amount of seepage. The dam has been breached at least once, as evidenced by erosion over the top of the dam (Holdredge & Kull 1999).

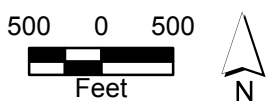
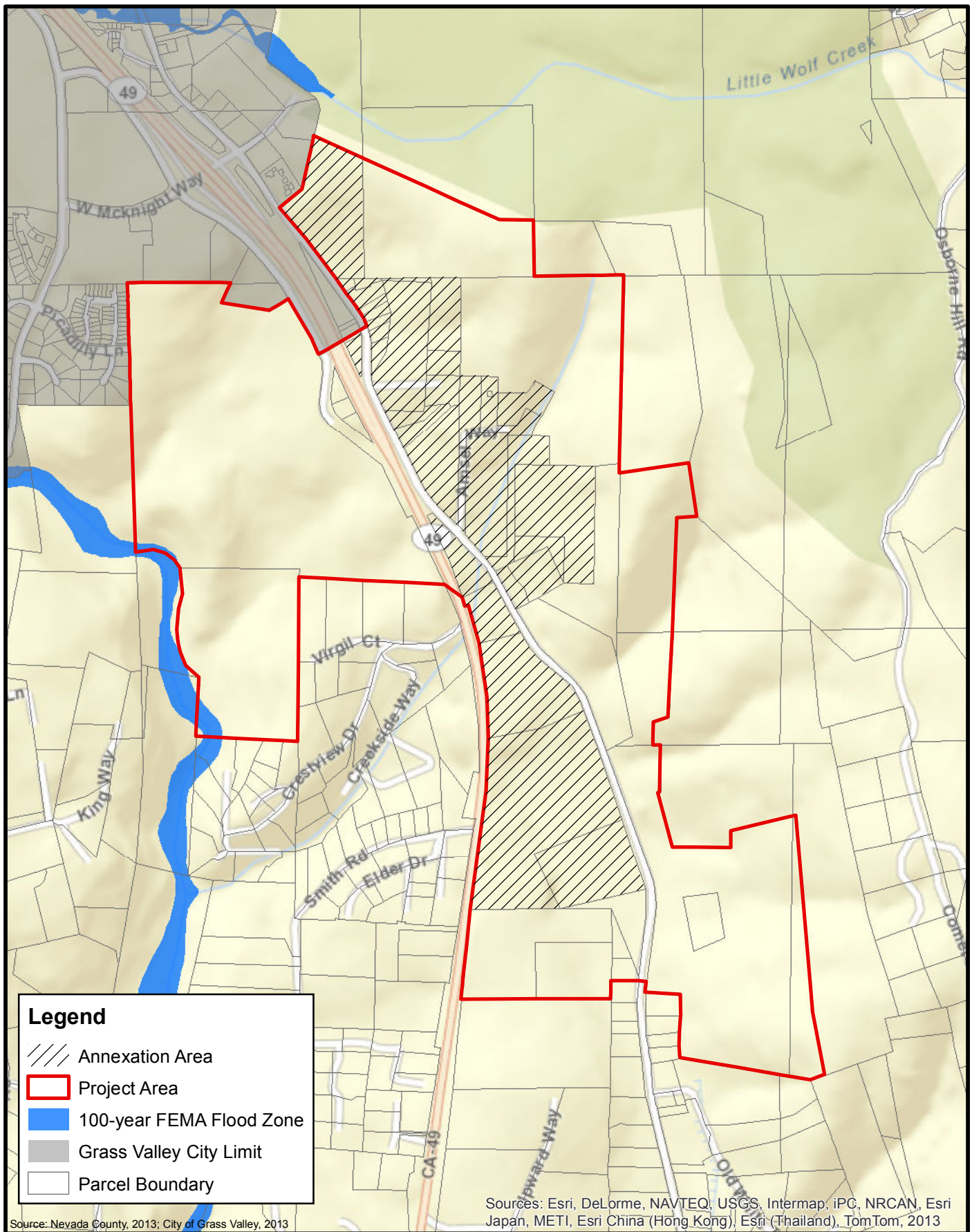


Figure 3.8-1
FEMA Flood Zone

3.8.2 REGULATORY FRAMEWORK

FEDERAL

Clean Water Act

The Clean Water Act (CWA) regulates the water quality of all discharges into waters of the United States, including wetlands and perennial and intermittent stream channels. Section 401, Title 33, Section 1341 of the CWA sets forth water quality certification requirements for “any applicant applying for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters.” Section 404, Title 33, Section 1344 of the CWA, in part, authorizes the US Army Corps of Engineers to:

- Set requirements and standards pertaining to such discharges: subparagraph (e);
- Issue permits “for the discharge of dredged or fill material into the navigable waters at specified disposal sites”: subparagraph (a);
- Specify the disposal sites for such permits: subparagraph (b);
- Deny or restrict the use of specified disposal sites if “the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies and fishery areas”: subparagraph (c);
- Specify type of and conditions for non-prohibited discharges: subparagraph (f);
- Provide for individual state or interstate compact administration of general permit programs: subparagraphs (g), (h), and (j);
- Withdraw approval of such state or interstate permit programs: subparagraph (i);
- Ensure public availability of permits and permit applications: subparagraph (o);
- Exempt certain federal or state projects from regulation under this Section: subparagraph (r); and,
- Determine conditions and penalties for violation of permit conditions or limitations.
- Section 401 certification is required prior to final issuance of Section 404 permits from the US Army Corps of Engineers.

The California State Water Resources Control Board and Regional Water Quality Control Boards (RWQCBs) enforce State of California statutes that are equivalent to or more stringent than the federal statutes. (See the RWQCB discussion below.)

National Pollutant Discharge Elimination System

As authorized by the CWA, the National Pollutant Discharge Elimination System (NPDES) Permit Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. It is the responsibility of the local water boards, which are discussed

3.8 HYDROLOGY AND WATER QUALITY

in more detail below, to preserve and enhance the quality of the state's waters through the development of water quality control plans and the issuance of waste discharge requirements. Waste discharge requirements for discharges to surface waters also serve as NPDES permits. The NPDES program is discussed in more detail below.

Total Maximum Daily Loads

Under CWA Section 303(d) and California's Porter-Cologne Water Quality Control Act of 1969 (discussed below), the State of California is required to establish beneficial uses of state waters and to adopt water quality standards to protect those beneficial uses. Section 303(d) establishes the total maximum daily load (TMDL) process to assist in guiding the application of state water quality standards, requiring the states to identify waters whose water quality is "impaired" (affected by the presence of pollutants or contaminants) and to establish a TMDL or the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects on the beneficial use identified. The establishment of TMDLs is generally a stakeholder-driven process that involves investigation of sources and their loading (pollution input), estimation of load allocations, and identification of an implementation plan and schedule. Where stakeholder processes are not effective, total maximum daily loads can be established by the RWQCBs or the EPA.

Federal Emergency Management Agency

The City of Grass Valley is a participant in the National Flood Insurance Program (NFIP), a federal program administered by the Federal Emergency Management Agency (FEMA). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted, as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year, also referred to as the 100-year storm event. The City is occasionally audited by the California Department of Water Resources (DWR) to ensure the proper implementation of FEMA floodplain management regulations.

STATE

Porter-Cologne Water Quality Control Act

Surface water and groundwater quality are protected in California via the Porter-Cologne Water Quality Control Act and associated regulations. The State of California administers most CWA programs through the Porter-Cologne Act, as well as numerous state regulatory programs. The Porter-Cologne Act enables formation of a State Water Resources Control Board and its Regional Water Quality Control Boards to implement the regulatory programs of the law. These include both the surface water discharge programs of the CWA and the programs and controls associated with discharge of waste to land (known as the Chapter 15 program) that may impact groundwater or surface water quality.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) is composed of nine Regional Water Quality Control Boards that are responsible for preserving California's water quality. The RWQCBs issue waste discharge permits, take enforcement action against violators, and monitor water quality.

The SWRCB and the Regional Water Quality Control Boards jointly administer most of the federal clean water laws. However, the SWRCB retains oversight responsibility and, like the EPA, may intervene if it determines the proposed project is not in compliance with SWRCB regulations.

Central Valley Regional Water Quality Control Board

Grass Valley is located within the boundaries of the Central Valley Regional Water Quality Control Board (Central Valley RWQCB), which is the agency responsible for establishing water quality standards and objectives to protect the beneficial uses of surface water and groundwater within the project area. RWQCBs are responsible for protecting surface water and groundwater from both point and non-point sources of pollution. Water quality objectives for the area have been established by the RWQCB and are listed in its Basin Plan. The Central Valley RWQCB's (2011) Water Quality Control Plan (Basin Plan) covers all the drainage basin areas for the Sacramento and San Joaquin rivers. This plan describes beneficial uses to be protected in these waterways, water quality objectives to protect those uses, and implementation measures to make sure those objectives are achieved.

The Central Valley RWQCB also 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. This RWQCB is responsible for issuing Water Quality Certifications, pursuant to Section 401 of the Clean Water Act. Under certain conditions, waivers of the Water Quality Certification may also be granted. The Central Valley RWQCB provides planning, monitoring, and enforcement techniques for surface and groundwater quality in the Central Valley region, including the project area. The Basin Plan provides more detailed information for specific waterways in the region in terms of establishing monitoring techniques to control pollutant levels within the waterways.

Self-monitoring by municipalities and water companies is required to ensure water quality standards are being met. Data from monitoring is compiled into reports and filed with the RWQCB. The RWQCB also maintains stormwater quality as it relates to construction activities through a National Pollutant Discharge Elimination System permitting process. As of July 1, 2013, the City of Grass Valley waste discharge requirements (WDRs) are regulated by the Phase II Small Municipal Separate Storm Sewer System (MS4) permit (State Water Resources Control Board Water Quality Order NO. 2013-0001-DWQ).

The Central Valley RWQCB issues permits for activities that could cause impacts to surface water and groundwater in the vicinity of any project site during construction and operation activities. Construction activities that result in the disturbance of more than 1 acre would be required to submit a Notice of Intent and stormwater pollution prevention plan (SWPPP) to the State Water Resources Control Board for coverage under the NPDES State General Construction Permit.

California Department of Fish and Wildlife

Under Section 1602 of Fish and Game Code, the California Department of Fish and Wildlife (CDFW) must be notified of any project that substantially changes the bed, channel, or bank of any stream, including streams with periodic flows. Any permanent or temporary channel crossings for roads, utilities, or other purposes are subject to a Streambed Alteration Agreement with the CDFW. Streambed Alteration Agreements typically come with conditions designed to avoid any adverse effects by a project on stream courses, habitat, and water quality.

3.8 HYDROLOGY AND WATER QUALITY

LOCAL

City of Grass Valley General Plan

California Environmental Quality Act (CEQA) Guidelines Section 15125(d) requires review of a project's consistency with applicable general plan policies. While this Draft EIR analyzes the project's consistency with the City of Grass Valley General Plan pursuant to CEQA Section 15125(d), the determination of the project's consistency with this General Plan rests with the City of Grass Valley City Council.

The City of Grass Valley General Plan Conservation/Open Space Element includes specific goals, objectives, and policies regarding water resources and flooding. The element notes the presence and importance of the hydrologic features in the Grass Valley area, including stream corridors, floodplains, riparian areas, wetlands, and canals. The element includes various policies that are intended to provide a balance between development and the natural environment. Furthermore, the City's Community Design Element focuses on protecting the built environment in addition to the City's natural environment. The following policies of the General Plan would have a mitigating effect with respect to potential impacts to hydrology and water quality:

Objective 2-COCO: Multi-purpose open space lands, accommodating the needs and requirements of open space/conservation, habitat, recreation and aesthetics.

Policy 3-COSP: Encourage clustering, density averaging, and other techniques in larger-scale new development, as means of preserving open space and natural systems.

Policy 4-COSP: Establish standards for inclusion and management of permanent open space in new developments.

Policy 5-COSP: Carefully regulate development on steep slopes.

Policy 6-COSP: Prevent excessive alteration of the natural topography.

Policy 11-COSP: Return to open space, areas within which flooding poses a clear danger to life and property.

Policy 21-COSP: Continue to implement water quality improvement plans, including storm water separation and sewage treatment plant expansion.

Page 5-15 of the Grass Valley General Plan includes an Open Space Opportunity Overlay map. This map identifies important open space corridors and trail opportunities in the City. As it pertains to this project, the map shows an open space corridor along Wolf Creek. The proposed project plans to prezone this area as open space, thereby protecting this water resource, consistent with the General Plan.

A discussion of the project's consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

City of Grass Valley Improvement Standards

The City of Grass Valley Improvement Standards further address and implement the City's storm drainage requirements. This section defines the City's acceptable drainage analysis and design criteria for new development. This section provides specific standards pertaining to development in the floodplain, ensuring on-site detention for 10-, 25-, and 100-year storm events for new development so that runoff rates will not exceed undeveloped site conditions, , requiring oil/water separators for developments, and outlining specific standards for storm drainage systems. This document was developed with the intention of having a mitigating effect on water resources per the City's Stormwater Management Program and Storm Drainage Master Plan

City of Grass Valley Development Code

Article 5 (Resource Management) Chapter 17.50 (Creek and Riparian Resource Protection) of the Grass Valley Development Code specifies standards to protect watercourses and riparian areas from the effects associated with development. The standards in these chapters are intended to have a mitigating effect on the City's water resources. Chapter 17.50 applies to any development adjacent to or crossed by any creek shown as a blue line on any current US Geological Survey (USGS) 7.5-minute topographic quadrangle map, as well as three specific watercourses (Magenta Ravine, Peabody Creek, and Slide Ravine). Wolf Creek is the only watercourse in the project area subject to this chapter. The USGS map shows Critter Creek, a blue line stream, running through a portion of the project area on the east side of SR 49; however, this stream is no longer evident in that it is likely under the developed lands of HBE operations and Kilroy's auto dismantling yard. Chapter 17.50 requires a site-specific streambed analysis to identify the precise boundary/top of bank of a watercourse and establishes the following development standards:

- For any development in the City, each proposed structure shall be set back from the watercourse: 30 feet in a lot with an average depth of less than 155 feet, 40 feet in a lot with an average depth between 156 and 175 feet, 60 feet in a lot with an average depth between 176 and 225 feet, and 100 feet in a lot with an average depth of more than 226 feet.
- No developed feature, other than a path or trail, may be constructed within a watercourse setback.
- No natural features located within a watercourse setback may be altered, with the exception of work that is authorized for flood control purposes by permits issued by the California State Department of Fish and Game [now the California Department of Fish and Wildlife], and/or all other applicable local, state, and federal agencies having authority over the creek or as otherwise provided by the chapter.
- Aboveground drainage improvements shall be designed to be unobtrusive and fit in with the natural environment through use of native plant materials or other natural and neutral materials.
- If watercourse bank stabilization is necessary, rehabilitation with an emphasis on maintaining the natural character of the watercourse and riparian area is preferred over other more intrusive techniques (concrete channels and other mechanical stabilization, etc.), if feasible.

3.8 HYDROLOGY AND WATER QUALITY

- Proposed subdivisions and other development shall provide public access to watercourses.
- Open space areas within watercourse setbacks shall include planting for riparian enhancement with native shrubs and trees.
- Open space areas outside of watercourse setbacks may include paths and trails, lighting, benches, play and exercise equipment, and trash receptacles, where appropriate.
- Article 6 (Site Development Regulations) Chapters 17.60 (Grading Permit Requirements and Procedures) and 17.62 (Grading, Erosion and Sediment Control Standards) of the Grass Valley Development Code establish standards for grading, including filling and excavation activities. The provisions set forth in these chapters apply to all excavation, fill, or other grading activities occurring in the City. Specifically, these sections require a grading permit from the City's Engineering Division for any excavation or fill; dredging activities involving wetlands or riparian areas; earthwork, paving, surfacing, or other construction that alters an existing drainage pattern of surface water leaving a site; and any other grading activity that causes substantial erosion. In addition to requiring a grading permit for certain activities, these chapters also establish standards for the proper conduct of grading operations, as well as site development activities not involving grading permits. Requirements and standards in these chapters include the following:
 - Approval of a Dust Prevention and Control Plan by the City Engineer. The plan must demonstrate that the discharge of dust from the construction site would not occur, or can be controlled to an acceptable level, depending on the particular site conditions and circumstances. It must also comply with the NPDES Stormwater Regulations as adopted by the City.
 - Drainage improvements for site runoff, including runoff from all roadways and other impervious surfaces, shall be engineered to minimize erosion.
 - Best management practices for construction shall be implemented to reduce erosion and sediment (minimal grading during the rainy season, slope surface stabilization, use of plastic covering and erosion control devices, prohibition on washing construction vehicles, etc.).
 - Excavations and fills should be limited to minimum amount necessary and shall be designed to maximize retention of natural land forms and features with final contours blended with adjacent natural terrain to achieve a consistent grade and natural appearance.
 - Grading shall be designed and grading operations shall be conducted to minimize the removal or disturbance of native vegetation to the maximum extent feasible.
 - Where natural vegetation has been removed through grading in areas that are not to be occupied by structures, the areas shall be replanted in compliance with an approved revegetation plan and the Grading Ordinance to prevent erosion after construction is completed.

- Grading, dredging, or diking shall not alter any intermittent or perennial stream, or natural body of water, except as permitted through approval of a grading permit in compliance with the Grading Ordinance, any planning permits required by the City's Development Code, and any necessary permits from the California Department of Fish and Game [now the California Department of Fish and Wildlife], US Army Corps of Engineers, and Regional Water Quality Control Board.
- Specific setbacks from property lines for cut and fill slopes.
- Design and construction of drainage systems and facilities in compliance with the City's Stormwater Management Plan, the City Improvement Standards, and all other applicable City drainage requirements.
- Proposed grading projects shall include design provisions to retain off-site natural drainage patterns, and limit the quantities and velocities of peak runoff to predevelopment levels.
- Grading or structures are not permitted in an area determined by the City Engineer to be subject to flood hazard by reason of inundation, overflow, high velocity, or erosion with some exceptions.

3.8.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the City of Grass Valley has determined that a project may have significant impacts on hydrology and water quality if it does any of the following:

- 1) Impact surface water or groundwater quality or violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality.
- 2) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river in a manner resulting in substantial erosion, siltation, or an increase in the rate or amount of surface runoff that would result in flooding on- or off-site.
- 3) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage system or provide substantial additional sources of polluted runoff.
- 4) 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 or place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- 5) Expose people or property to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam or result in inundation by seiche, tsunami, or mudflow.

3.8 HYDROLOGY AND WATER QUALITY

Water supply impacts and impacts to the City's wastewater treatment plant and system are addressed in Section 3.12, Public Utilities.

METHODOLOGY

The hydrology and water quality analyses are based on a review of published information and reports regarding regional hydrology, climate, and geology; consultation with agency representatives; and review of technical studies that have been done for previously proposed projects within the project area, but were not developed. Those studies are cited as appropriate. Some information has also been derived from a preliminary Wastewater Feasibility Analysis prepared by SCO Planning and Engineering (2012) for the entire project area.

PROJECT IMPACTS AND MITIGATION MEASURES

Water Quality Impacts (Standard of Significance 1)

Impact 3.8.1 Future development in the project area could impact surface water quality and may violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality through construction activities and long-term development, operation, and occupation of the project area. This impact is considered **less than significant**.

Construction Water Quality Impacts

No development is proposed as part of this project. However, construction activities related to future development and construction of planned uses within the project area could, if not designed properly, impact water quality. Grading and vegetation removal necessary for construction may increase soil erosion rates in the project area. The preliminary geotechnical studies completed for portions of the project area noted that some soils in the area are moderately susceptible to soil erosion. This could increase downstream sedimentation and surface water quality impacts.

Furthermore, the removal of vegetation during future construction could expose site soils to rainsplash, sheetflow, and gully erosion prior to successful revegetation. The cleared, exposed surfaces and soil stockpiles created during construction could create sedimentation in downstream waters. Fuels, lubricants, and other toxic materials used during construction could potentially enter surface waters.

As discussed in subsection 3.8.2 above, the City's General Plan, Development Code, and Improvement Standards include policies, standards, and guidelines that are intended to avoid impacts to water resources. Additionally, the City implements the state and federal water quality requirements to ensure construction activities comply with current standards to prevent construction-related impacts on water resources. The City verifies compliance through the tentative map and development review process and through subsequent environmental review of specific projects.

The Construction Stormwater General Permit adopted by the State Water Resources Control Board requires a project applicant and/or contractor to develop and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must specify best management practices (BMPs) designed to prevent construction pollutants (including sediment, fuels, and lubricants) from entering waterways in the project vicinity. The permit also requires elimination or reduction of

non-stormwater discharges to receiving waters and inspection of all best management practices. As a condition of approval for all grading plans, the City requires the SWPPP to be submitted to the City for acceptance, to file a Notice of Intent with the State Water Resources Control Board, and to comply with all provisions of the Clean Water Act. City Improvement Standards also require developers to keep adjoining public streets free and clean of project dirt, mud, materials, and debris during the construction period.

Although it is not known at this time exactly what type of development, if any, will occur within the project area, future development, once the property is annexed, will be subject to all City standards, guidelines, and review requirements. The City's General Plan, Development Code, and Improvement Standards, along with State of California regulations, all of which are designed to reduce impacts on water quality, would ensure that future construction activities comply with the those standards. Compliance will be verified through the City's Tentative Map and/or Development Review processes, which may include subsequent environmental review. Therefore, the goals, objectives, and policies of the City's General Plan, along with the City's Development Code and Improvement Standards, will ensure the project will have a **less than significant** impact on water quality.

Operational Water Quality Impacts

Future development could degrade long-term water quality due to the deposition of pollutants generated by motor vehicle uses on roadways, parking lot areas, and other surfaces, and during maintenance and operation of landscape areas. Concerning wastewater from future potential development, the City's wastewater treatment plant waste discharge requirements, as set by the RWQCB, will apply once the project area is annexed to the City and served by City sewer. For discussion of the City's ability to serve the project area under the current RWQCB waste discharge permit, see Section 3.12, Public Utilities.

Development of urban uses within the project area could result in a substantial alteration of the existing site conditions and would introduce urban pollutant sources. Urban runoff typically consists of oils, grease, fuel, antifreeze, byproducts of combustion (such as lead, cadmium, nickel, and other metals), and other household pollutants. Precipitation, especially during the early portion of the wet season, displaces these pollutants into the stormwater runoff, resulting in high pollutant concentrations in the initial wet weather runoff. This initial runoff with peak pollutant levels can be referred to as the "first flush" of storm events. It is estimated that during the rainy season, the first flush of heavy metals and hydrocarbons occurs during the first 5 inches of seasonal rainfall.

The amount and intensity of runoff generated by the project will likely be greater than that under existing conditions due to increases in impervious surfaces and conversion of vacant lands to urban use. There will be a corresponding increase in urban runoff pollutants and first flush roadway contaminants such as heavy metals, oil, and grease, as well as an increase in nutrients (i.e., fertilizers) and other chemicals from landscaped areas. These constituents could result in water quality impacts to on- and off-site drainage flows. These pollutants have the potential to degrade water quality. Wolf Creek is the main receiving water of stormwater discharges from the City (City of Grass Valley 2003, p. 1-3). The project area drains via two drainages to Wolf Creek.

Following annexation, portions of the project area proposed for future development would be subject to the requirements of the City's General Permit for the Discharge of Stormwater from the City's MS4 permit under the NPDES Stormwater Program, enforced by the Central Valley RWQCB. This permit requires that discharges of pollutants from areas of new development be

3.8 HYDROLOGY AND WATER QUALITY

reduced to the maximum extent practicable. Compliance with this standard requires that control measures be incorporated into the design of new development to reduce pollution discharges in site runoff over the life of the project through the implementation of treatment control BMPs.

Treatment control best management practices involve physical treatment of runoff, usually through structural means. Although a variety of treatment control measures can be utilized for stormwater quality, the effectiveness of these controls is highly dependent on local conditions such as climate, hydrology, soils, groundwater conditions, and the extent of urbanization. Treatment controls for stormwater include biofiltration systems, vegetated swales, and oil/water separators. The RWQCB is responsible for administering NPDES permit requirements, such as the use of construction and operational best management practices to ensure that projects are in compliance with water quality standards as set forth in the Clean Water Act.

The City currently requires the following stormwater system management practices to be implemented for new development in the City:

- Biofiltration through the use of vegetation.
- Permanent erosion control features at discharge points and drainage courses.
- On-site detention via ponds, vegetative swales, underground culverts.
- Treatment of runoff for all projects via oil/water separators.

Future development within the project area could have the potential to impact water quality as a result of increased runoff and the introduction of urban pollutants if not properly controlled. However, because the City requires any future development that would occur within the project area to fully implement all federal, state, and City regulations and policies cited above, this would ensure that any potential impacts on water quality would be **less than significant**.

Mitigation Measures

None required.

Groundwater (Standard of Significance 1)

Impact 3.8.2 Future development in the project area may impact groundwater quality and violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality through construction activities and long-term development, operation, and occupation of the project area. This impact is considered **potentially significant**.

In general, groundwater in the Sierra Foothill region lies at various depths below ground surface, depending on the hydrogeologic conditions. A geologic investigation done for the former Bear River Mill site in the central portion of the project area found seepage and/or shallow groundwater at depths of 2 to 8 feet below ground surface in the alluvial areas of that site. Higher-elevation areas did not encounter this, but the investigation determined that isolated areas of seepage or saturated near-surface soil could be encountered during excavation activities. Another geologic investigation done for the Berriman Ranch property located in the western portion of the project area also identified saturated soil and concluded that seepage would likely be encountered during any future grading operations.

Should detention ponds be used for specific development projects they would likely be excavated several feet below existing grade. It is possible that seasonal groundwater would be exposed and will interact with pollutants associated with urban runoff that would be captured in these detention ponds. Pollutants collected in the detention ponds, when operational, are likely to become attached to the surface soil particles and are not likely to travel deep into subsurface soil and water layers. Several technical studies have been conducted regarding water quality control feature impacts on groundwater (DWR 2005, p. 21-5). These studies have identified that water quality control features such as detention and infiltration ponds have been successful in controlling water quality and avoiding groundwater quality impacts (metals and organic compounds associated with stormwater are typically held in the first few feet of the soil of the basins).

While similar geologic studies have not been prepared to cover the entire project area, the findings of the two studies described above indicate that future ground-disturbing activities which could happen as a part of future development projects within the project area have the potential to encounter areas of shallow groundwater.

The City would require that additional site-specific studies be prepared for future development proposals on other portions of the project area to determine the potential for adverse impacts on groundwater quality. This would help to ensure that construction activities do not result in impacts on groundwater quality. However, due to the likely need for future detention basins and the possibility of urban runoff in those future basins encountering shallow groundwater that may be present within the project area, this impact would be **potentially significant**.

Mitigation Measures

MM 3.8.2 As part of the final design of specific future development projects, soil borings shall be taken at representative locations within the future project footprint to analyze the subsurface soils that are present and the elevation of the subsurface water table. If these soil borings identify shallow groundwater within 2 feet of the proposed bottom elevation of underground utilities, detention ponds, and/or structure foundations, a liner and/or best available water quality control features (i.e., leachate management system) shall be incorporated into the design of proposed underground utilities, detention ponds, and foundations, subject to City drainage standards and approval.

Timing/Implementation: Prior to approval of improvement plans

Enforcement/Monitoring: City of Grass Valley Department of Public Works and Community Development Department;
Regional Water Quality Control Board

Implementation of mitigation measure **MM 3.8.2** will reduce impacts to groundwater quality associated with future development proposals within the project area by not allowing the potential contamination of groundwater by underground utilities, urban runoff pollutants that would be captured in the detention ponds, or the construction of structural foundations, and would mitigate the impact to a level that is **less than significant**.

Drainage Patterns, Surface Runoff, and Localized Flooding (Standard of Significance 2)

Impact 3.8.3 Future development in the project area may alter the existing drainage patterns of the project area, resulting in substantial erosion, siltation, or an increase in the rate or amount of surface runoff that would result in flooding on- or off-site. This impact is considered to be **less than significant**.

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 of a site is defined as stormwater runoff.

The infiltration and runoff process is altered when a site is developed with urban uses. Houses, buildings, roads, and parking lots introduce impervious surfaces that generally absorb less water than a natural undeveloped landscape. As impervious surfaces are added to the ground conditions and surface drainage becomes more efficient, the natural infiltration of water and the capabilities of soil storage are reduced. As a result, the volume and rate of stormwater runoff increases. The increased volumes and rates of stormwater runoff may result in increased downstream flows if not properly mitigated.

Though no development is proposed as part of this project, construction and operation of future uses in the project area could affect existing drainage patterns, runoff rates, and flooding. Future development of portions of the project area would result in the addition of new impervious surfaces that, if not designed properly, could impact drainage conditions both on- and off-site.

Based on the existing drainage patterns and the City's Improvement Standards pertaining to drainage, runoff from specific development would be treated and detained on-site through the implementation of detention systems, oil/water separators, and other filtration techniques. One type of detention system is a detention basin which can ensure runoff does not exceed the City Improvement Standards noted above and therefore not increase existing runoff rates and cause off-site flooding. Stormwater leaving the detention systems would be collected in either a public or private system, then inevitably flow into Wolf Creek.

Although it is not known at this time what type of development, if any, will occur within the project area, future development, once the property is annexed, will be subject to all City standards, guidelines, and review requirements. As noted in this section, the City's General Plan, Development Code, and Improvement Standards, along with State of California regulations, will ensure that drainage issues associated with future development comply with those standards. Compliance will be verified through the City's Tentative Map and/or Development Review processes, which may include subsequent environmental review. Compliance with those standards would ensure that future development within the project area would have a **less than significant** impact on water resources.

Mitigation Measures

None required.

Stormwater Drainage Capacity (Standard of Significance 3)

Impact 3.8.4 Future development in the project area may create or contribute runoff water that would exceed the capacity of an existing or planned stormwater drainage system. This impact is considered to be **less than significant**.

As discussed in Impact 3.8.1, the project may contribute additional stormwater to waterways during construction and operation of future development within the project area through earthmoving activities and the conversion of currently vacant or underdeveloped lands to urban use. Currently, the project area is drained by two drainages that drain to Wolf Creek at the western edge of the project area and by two other drainages that drain to the two existing detention ponds located on the former Bear River Mill site in the central portion of the project area.

The City requires the preparation of drainage plans to provide stormwater management for all development proposals. City standards also require that development projects fully implement the recommendations made by the drainage plans to ensure that post-construction stormwater rates and intensities do not exceed predevelopment levels. With implementation of City Improvement Standards that require drainage plans be prepared to ensure that stormwater rates do not exceed pre-project levels, this impact is considered to be **less than significant**.

Mitigation Measures

None required.

Flood Hazards (Standard of Significance 4)

Impact 3.8.5 Most of the project area is not located in 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, nor would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows. The project will result in a **less than significant** impact associated with flood hazards.

Most of the project area is not located within the 100-year FEMA flood zone, as shown in **Figure 3.8-1**, although two small areas on the westernmost edge of the project area are mapped within the 100-Year FEMA Flood Zone. However, the proposed General Plan Amendment and prezone of the project area propose to designate those areas and the surrounding lands as Open Space, which would permanently prohibit development within the 100-year flood zone. Therefore, this impact is considered to be **less than significant**.

Mitigation Measures

None required.

Levee or Dam Failure, Seiche, Tsunami, or Mudflow (Standard of Significance 5)

Impact 3.8.5 The project area is not located in an area that would be subject to significant risk as a result of the failure of a levee or dam or result in inundation by seiche, tsunami, or mudflow. This impact would be **less than significant**.

3.8 HYDROLOGY AND WATER QUALITY

Dam failure inundation is the flooding that results from full or partial collapse of a dam, which has several potential causes, including strong seismic activity. Aside from the potential for direct structural impacts as a result of severe earthquakes, seismic activity may also produce powerful waves in impounded bodies of water, referred to as “seiches,” that have the potential to breach dams. Landslides flowing into a reservoir may also be a source of potential dam failure or overtopping.

The Nevada Irrigation District (NID) Scotts Flat Dam forms Scotts Flat Reservoir upstream of the City. According to the City of Grass Valley General Plan EIR, mapping prepared by NID illustrates the area projected to be inundated should the dam suddenly fail. These maps do not identify any section of the Grass Valley Planning Area, including the project area, as threatened with inundation should such an event occur.

According to the geologic hazards investigation performed for the former Bear River Mill site in the central portion of the project area, there are two detention ponds in that portion of the project area, the larger of which has an earthen dam that has apparently experienced a significant amount of seepage and has been breached at least once, as evidenced by erosion over the top of the dam. This portion of the project area is proposed as industrial uses.

The detention pond and earthen dam are located at a low point of the project area. If the dam failed or was breached, water would have no way of moving to other portions of the area that would be developed with residential uses. Therefore, this impact is **less than significant**.

Mitigation Measures

None required.

3.8.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

In the cumulative context, the geographical setting for hydrologic and water quality impacts could be said to be as small as the immediate watershed or as large as the Sacramento River Hydrologic Region. Wolf Creek flows south approximately 14 miles to the Bear River, which flows into the Feather River, a major tributary to the Sacramento River. For the purpose of this evaluation, however, the Wolf Creek watershed within the Grass Valley Sphere of Influence (SOI) is considered. As development occurs within the City limits and the Grass Valley SOI, it would result in the construction of additional impervious surfaces that would change drainage patterns, reduce water absorption, increase surface runoff resulting in off-site flooding, and result in increases in urban water pollutants. As it pertains to existing flooding conditions in the City's SOI area, the FIRM maps show several creeks and watercourses in the SOI as being within designated floodplains. These include Wolf Creek, the south fork of Wolf Creek, Little Wolf Creek, and Rhode Island and French ravines. With the exception of Wolf Creek, all these other watercourses are located upstream from the project area. As described in the following paragraphs and in subsection 3.8.3 above, the City has a significant number of policies, standards, and procedures in place to ensure all development fully mitigate the hydrology and water quality-related impacts associated with new development and construction.

The City of Grass Valley General Plan Conservation/Open Space Element includes specific goals, objectives, and policies regarding water resources and flooding. The element notes the presence and importance of the hydrologic features in the Grass Valley area, including stream

corridors, floodplains, riparian areas, wetlands, and canals. The “City of Grass Valley General Plan” subsection under the Regulatory Framework above includes a list of applicable policies related to hydrology and water quality. As also noted in subsection 3.8.2, the City has adopted several other policy documents that implement specific hydrology and water quality standards. These include the City’s Storm Drainage Master Plan, City of Grass Valley Stormwater Management Program, City Improvement Standards, and Development Code, which includes subdivision standards. Also noted above is that all new development in the City is subject to either one or more forms of review (Development Review, Subdivision, Use Permits, etc.) that ensure compliance with the adopted policies and standards noted below.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Water Quality Impacts Related to Construction and Operations (Standards of Significance 1 and 2)

Impact 3.8.6 Implementation of the project, which includes construction activities and operations related to developed lands, would contribute to the cumulative impacts on water quality in the area. This impact would be **less than cumulatively considerable**.

Article 5 (Resource Management) Chapter 17.50 (Creek and Riparian Resource Protection) of the Grass Valley Development Code specifies standards to protect watercourses and riparian areas from the effects associated with development. The standards in these chapters are intended to have a mitigating effect on, and in some cases to improve existing conditions to, the City’s water resources. Article 6 (Site Development Regulations) Chapters 17.60 (Grading Permit Requirements and Procedures) and 17.62 (Grading, Erosion and Sediment Control Standards) of the Grass Valley Development Code establish standards for grading, including filling and excavation activities.

As noted in subsection 3.8.2 above, all new development in the City must comply with federal, state, and local minimum water quality standards. The City’s General Plan, Development Code, and Improvement Standards include policies, standards, and guidelines that are intended to avoid impacts to water resources. Additionally, the City implements state and federal water quality requirements to ensure construction activities comply with current standards to prevent construction-related impacts on water resources. The City verifies compliance with these minimum standards through the tentative map and development review process and through subsequent environmental review of specific projects. As also noted in this section, all projects in the City must include a SWPPP. The SWPPP specifies the best management practices (BMPs) designed to prevent construction pollutants (including sediment, fuels, and lubricants) from entering waterways in the project vicinity. The permit also requires elimination or reduction of non-stormwater discharges to receiving waters and inspection of all best management practices. As a condition of approval for all grading plans, the City requires the SWPPP to be submitted to the City for acceptance, to file a Notice of Intent with the State Water Resources Control Board, and to comply with all provisions of the Clean Water Act. City standards also require developers to keep adjoining public streets free and clean of project dirt, mud, materials, and debris during the construction period.

This section also notes that urban development in the City could degrade long-term water quality due to the deposition of pollutants generated by motor vehicle uses on project roadways, parking lot areas, and other surfaces both on- and off-site, as well as during

3.8 HYDROLOGY AND WATER QUALITY

maintenance and operation of an urban use. However, all development in the City is subject to the stormwater system management practices noted in Impact 3.8.1.

As demonstrated above, the overall intent of the City's policy documents and standards is to fully mitigate all on- and off-site impacts related to water quality associated with new development and construction. These standards and processes apply to all new projects in the City's jurisdiction. Therefore, cumulative impacts to hydrology and water quality are considered **less than cumulatively considerable**.

Mitigation Measures

None required.

Cumulative Flooding and Stormwater Impacts (Standards of Significance 2, 3, and 4)

Impact 3.8.7 Implementation of the project and future development would contribute to cumulative impacts related to flooding and stormwater systems. This impact would be **less than cumulatively considerable**.

The City's Improvement Standards includes a review process that applies to all subdivisions and development projects in the City's jurisdiction. The Improvement Standards require all projects to submit drainage feasibility reports, drainage reports, and construction drawings and specifications. The Improvement Standards provide specific minimum requirements that each of these reports must include, in addition to calculation standards for hydraulics and hydrology. The Improvement Standards also includes polices related to drainage, such as designing storm drainage for multipurpose use (bioswales, landscaping, groundwater recharge), ensuring compliance with the Storm Drainage Master Plan, reducing erosion and downstream sedimentation, and preserving natural watercourses. Additionally, the Grass Valley Improvement Standards addresses and implements the City's storm drainage requirements. This section further defines the City's acceptable drainage analysis and design criteria for new development. Furthermore, this section provides specific standards pertaining to development in the floodplain, ensuring on-site detention for new development provide runoff rates that do not exceed existing site conditions, requiring detention for 10-, 25-, and 100-year storm events for new development so that runoff rates will not exceed undeveloped site conditions, , requiring oil/water separators for developments, and outlining specific standards for storm drainage systems. As demonstrated above, the overall intent of the City's policy documents and standards is to fully mitigate all on- and off-site flooding and other hydrology impacts associated with new development and construction. These standards and processes apply to all new projects in the City's jurisdiction. Therefore, cumulative impacts to flooding and hydrology are considered **less than cumulatively considerable**.

Mitigation Measures

None required.

REFERENCES

- Carlton Engineering Inc. 2005. *Draft Final Bear River Removal Action Work Plan (RAW)*.
- CASQA (California Stormwater Quality Association). 2003. California Stormwater BMP Handbook, Construction. January 2003, updated September 2004. <http://www.cabmphandbooks.com/Construction.asp>.
- Central Valley RWQCB (Central Valley Regional Water Quality Control Board). 2006. *2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments*. http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/swrcb/r5_final303dlist.pdf.
- . 2011. *The Water Quality Control Plan (Basin Plan) – 4th Edition for the Sacramento River and San Joaquin River Basins*. Revised 2011. http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr.pdf.
- . 2013. *City's General Permit for the Phase II Discharge of Stormwater from Small Municipal Separate Storm Sewer System*.
- City of Grass Valley. 1999a. *Draft Environmental Impact Report, City of Grass Valley General Plan Update*. August 1999.
- . 1999b. *City of Grass Valley 2020 General Plan*.
- . October 2003. *City of Grass Valley Stormwater Management Program Planning Document*.
- . 2007. *City of Grass Valley Development Code*.
- . February 2012. *City of Grass Valley Improvement Standards*.
- . March. 1986. *City of Grass Valley Storm Drainage Master Plan and Criteria*.
- DWR (California Department of Water Resources). 2003. *California's Groundwater – Bulletin 118 – Update 2003*. Sacramento: Resources Agency. Accessed August 16, 2013. <http://www.water.ca.gov/groundwater/bulletin118/bulletin118update2003.cfm>.
- . 2005. *Final California Water Plan Update 2005*. Sacramento: Resources Agency. <http://www.waterplan.water.ca.gov/previous/cwpu2005/index.cfm#vol3>.
- Eco Synthesis. 2006. *Berriman Ranch Site Biological Inventory and Habitat Management Plan*.
- FEMA (Federal Emergency Management Agency). 2010a. *Flood Insurance Rate Map, Community Panel No. 06057CIND0A*.
- . 2010b. *Flood Insurance Rate Map, Community Panel No. 06057C0633E*.
- Foothill Associates Environmental Consultants. 2001. *Wetland Delineation for South Hill Site, Nevada County*.
- Gallaway Consulting. 2005. *Biological Resource Assessment SouthHill Village Nevada County*.

3.8 HYDROLOGY AND WATER QUALITY

- Holdrege & Kull. 1999. *Preliminary Geotechnical and Geologic Hazards Report for Bear River Mill Site, Nevada County, CA.*
- . 2005. *Preliminary Geotechnical Engineering Investigation for the Crestview Drive/State Route 49 Intersection, Nevada County, CA.*
- . 2006. *Preliminary Geotechnical Engineering Report for Berriman Ranch, Nevada County, CA.*
- . 2007. *Phase I Environmental Assessment of Berriman Ranch Property, Nevada County, CA.*
- . 2008. *Preliminary Geologic Hazards Report for Bear River Mill Site, Nevada County, CA.*
- Kennedy/Jenks Consultants. 1999. *Phase I Environmental Site Assessment. Former Bear River Sawmill and Valley Veneer Facility, Grass Valley, California.*
- SCO Planning and Engineering. 2010. *Preliminary Drainage Report for Berriman Ranch, Grass Valley, CA.*
- . 2012. *Wastewater Feasibility Analysis, La Barr Meadows Road & Taylorville Road, City of Grass Valley.* Prepared for City of Grass Valley.
- Wolf Creek Community Alliance. 2013. Website. Accessed August 14. <http://www.wolfcreekalliance.org/documents/AnnualReport2007nopix.doc>.

3.9 NOISE

This section discusses the existing noise setting, identifies potential noise impacts resulting from the proposed project, and recommends mitigation measures to address potential impacts. Specifically, this section analyzes potential noise impacts due to development of the project site relative to the existing ambient noise environment and applicable noise criteria. Additionally, this section recommends practical noise mitigation measures in cases where the predicted noise levels would exceed the applicable City of Grass Valley noise level standards. This EIR relies on noise analysis and projections from the City's 2020 General Plan EIR and references noise modeling conducted by Ambient Air Quality & Noise Consulting (2009) and the Environmental Noise Assessment for the Crestview Drive Intersection, prepared by Bollard Acoustical Consultants, Inc. (2005). These studies were used to verify the existing and expected noise levels identified in the City's General Plan.

3.9.1 EXISTING SETTING

NOISE BACKGROUND

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound, as described in more detail below, is mechanical energy transmitted in the form of a wave because of a disturbance or vibration.

Amplitude

Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person (EPA 1971).

Frequency

Frequency is the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard at all, and the ear is more sensitive to sound in the higher portion of this range than in the lower. To approximate this sensitivity, environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA (EPA 1971).

Characteristics of Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks, and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates at a rate between 3.0 to 4.5 dBA per doubling of distance, but the rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Mobile transportation sources such as highways with hard, flat surfaces of concrete or asphalt have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance from the

3.9 NOISE

source. Noise generated by stationary sources typically attenuates at a rate of approximately 6.0 to 7.5 dBA per doubling of distance from the source (EPA 1971).

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks what amounts to the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage can also reduce noise, but are less effective than solid barriers.

Noise Descriptors

The selection of a proper noise descriptor for a specific source is dependent on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average-hourly noise level (in L_{eq}) and the average-daily noise levels (in L_{dn} or CNEL). Common acoustical terms and descriptors are summarized in **Table 3.9-1**.

TABLE 3.9-1
COMMON ACOUSTICAL TERMS AND DESCRIPTORS

Descriptor	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise or sound at a given location, typically defined by the L_{eq} level.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Decibel (dB)	A unit-less measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to referenced sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
Energy Equivalent Noise Level (L_{eq})	The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value (in dBA) is calculated.
Minimum Noise Level (L_{min})	The minimum instantaneous noise level during a specific period of time.
Maximum Noise Level (L_{max})	The maximum instantaneous noise level during a specific period of time.
Day-Night Average Noise Level (DNL or L_{dn})	The 24-hour L_{eq} with a 10 dBA "penalty" for noise events that occur during the noise-sensitive hours between 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours to account for increases sensitivity to noise during these hours.
Community Noise Equivalent Level (CNEL)	The CNEL is similar to the L_{dn} described above, but with an additional 5 dBA "penalty" added to noise events that occur between the hours of 7:00 p.m. to 10:00 p.m. The calculated CNEL is typically approximately 0.5 dBA higher than the calculated L_{dn} .
Single Event Level (SEL)	The level of sound accumulated over a given time interval or event. Technically, the sound exposure level is the level of the time-integrated mean square A-weighted sound for a stated time interval or event, with a reference time of one second. Often also referred to as the Single Event Noise Exposure Level (SENEL).

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not so much in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels. Typical community noise levels are depicted in **Figure 3.9-1**. However, hearing loss can occur at the highest noise intensity levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise, including the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans.
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference.
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial.
- A 10 dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

PROJECT AREA SETTING

The project area noise environment is defined primarily by vehicular traffic along State Route (SR) 49 and La Barr Meadows Road. Nearby existing stationary noise sources include various industrial uses located on the east side of La Barr Meadows Road. Noise-sensitive land uses located in and around the project area consist predominantly of urban and rural residential land uses.

FIGURE 3.9-1
TYPICAL COMMUNITY NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	
Quiet Urban Daytime	50	Large Business Office
		Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		Library
Quiet Rural Nighttime	30	Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans 2008

Existing Traffic Noise

Ambient noise levels in the project area are primarily influenced by vehicular traffic on area roadways. In general, existing ambient noise levels in the project area vary, depending on proximity to nearby roadways. State Route 49 divides the project area into western and eastern areas. La Barr Meadows Road further divides the eastern side into two east and west areas. Other roads in the project vicinity include South Auburn Street, McKnight Way, Taylorsville Road, and Dog Bar Road. Traffic volumes for existing conditions were obtained from Section 3.13, Transportation and Circulation, of this DEIR. The EIR prepared for the City's General Plan was also used to compare traffic volumes and noise levels at that time with the current traffic volumes and projected noise levels from SR 49. The existing traffic volumes shown in the 1999 EIR for the General Plan noted 21,700 average daily trips (ADT) on SR 49 adjacent to the project site. The traffic analysis prepared for this project noted 21,690 ADTs on SR 49 adjacent to the project site. Based on these facts, this EIR relies on the noise contours shown in the General Plan for existing noise levels for the project area. In addition, short-term ambient noise measurements were conducted at four locations on and in the vicinity of the project area in 2009. Given that there has been little change with respect to traffic in the project area, which is the predominant noise source, these noise levels are representative of existing conditions in the project area and vicinity since the measurements were taken.

Existing Stationary-Source Noise

Existing stationary sources of noise near the project area consist of industrial land uses that include construction and landscape material yards, equipment rental operations, and a ready-mix concrete batch plant. Operational hours for these uses are generally limited to the daytime hours of approximately 7:00 a.m. to 5:00 p.m., Monday through Friday, and 8:00 a.m. to noon on Saturdays (HBE 2013). However, the ready-mix concrete batch plant operates throughout the evening and early mornings during certain times of the year.

3.9.2 REGULATORY FRAMEWORK

STATE

California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The *State of California General Plan Guidelines* (1998), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL contours. The guidelines also present adjustment factors which may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

California Code of Regulation, Title 24

Title 24 of the California Code of Regulations establishes standards governing interior noise levels that apply to all new multi-family residential units (hotels, motels, apartments, condominiums, and other attached dwellings) in California. These standards require that acoustical studies be performed prior to construction at residential building locations where the existing exterior L_{dn} exceeds 60 dBA. Such acoustical studies are required to establish mitigation measures that will limit maximum L_{dn} noise levels to 45 dBA in any habitable room.

3.9 NOISE

LOCAL

City of Grass Valley General Plan

The main goal of the City of Grass Valley General Plan Noise Element is to “protect Grass Valley’s relatively quiet environment from unnecessary, annoying, and potentially damaging noise.” The City’s noise policies are established for guidance of efforts to implement the Grass Valley General Plan Noise Element and are intended to ensure noise-sensitive land uses are not exposed to adverse noise impacts and that new development and uses do not impact existing noise-sensitive uses. As it pertains to this project, the Noise Element includes maps and tables showing the existing and projected 2020 60 dB and 65 dB traffic noise contours. The EIR certified for the City’s General Plan concluded that the policies in the General Plan provide adequate mitigation for future projects. The following policies and implementation programs of the General Plan would have a mitigating effect with respect to noise impacts:

3-NP: Utilize noise contour data to determine land uses affected by transportation-related noise sources.

5-NP: Utilize noise contour data to determine appropriate land use patterns in areas affected by stationary noise sources.

6-NP: Locate sensitive land uses (residential neighborhoods, medical facilities, senior care facilities and schools) away from high noise areas.

1-NI: Prohibit development of new noise-sensitive land uses where the noise level due to fixed noise sources will exceed the noise level standards of Table 6-5 (as measured immediately within the property line or within a designated outdoor activity area of the new development) unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table 6-5.

2-NI: Require that noise created by new development of fixed noise sources be mitigated so as not to exceed the noise level standards of Table 6-5 as measured immediately within the property line of lands designated for noise-sensitive land uses.

4-NI: Require that an acoustical analysis be performed where new development of fixed noise sources, or modification of existing fixed noise sources, is likely to produce noise levels exceeding the performance standards of Table 6-5, and that noise mitigation be included in the project design.

5-NI: Prohibit new development of noise-sensitive land uses in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed the levels specified in Table 6-6, unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 6-6.

9-NI: Require an acoustical analysis and mitigation measures where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 6-5 or Table 6-6.

A discussion of the project’s consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City’s EIR consultant to advise the City Council of their

opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

**TABLE 3.9-2
TRAFFIC NOISE LEVELS FROM THE 1999 GENERAL PLAN EIR**

Roadway	Segment	Average Daily Trips	CNEL/L _{dn} at 100 Feet	Distance to Noise Level Contours (feet)	
				60 dB L _{dn}	65 dB L _{dn}
SR 49	Along Project Frontage	21,700	69.6	444	206
La Barr Meadows Road	South of McKnight Way	10,028	58.7	82	38

Source: City of Grass Valley 1999b

City of Grass Valley Municipal Code

The City of Grass Valley has adopted noise regulations in Chapter 8.28 of the Municipal Code. The noise ordinance provides restrictions related to the operation of noise sources that would pose a nuisance to community residents. The City's noise ordinance does not contain quantitative noise standards, but does include provisions related to construction. Construction activities occurring within 500 feet of a residential zone are restricted to the daytime hours between 7 a.m. and 7 p.m. on weekdays and Saturdays and are prohibited on Sundays and holidays, unless prior permission has been granted by the Building Official in the interest of public convenience or necessity (City of Grass Valley 2013).

3.9 NOISE

**TABLE 3.9-3
LAND USE COMPATIBILITY GUIDELINES FOR DEVELOPMENT
CITY OF GRASS VALLEY**

Land Use Category	Community Noise Exposure (Ldn or CNEL, dBA)							Interpretation
	55	60	65	70	75	80		
Residential, Theaters, Auditoriums, Meeting Halls, Churches	[Solid Gray Box]		[Hatched Box]		[Solid Black Box]		<div>[Solid Gray Box] Generally Acceptable No noise mitigation measures are required.</div> <div>[Hatched Box] Conditionally Acceptable Use should be permitted only after careful study and inclusion of mitigation measures as needed to satisfy the policies of the Noise Element.</div> <div>[Solid Black Box] Generally Unacceptable Development is usually not acceptable.</div>	
Transient Lodging – Motels, Hotels	[Solid Gray Box]		[Hatched Box]		[Solid Black Box]			
Schools, Libraries, Hospitals, Child Care, Museums	[Solid Gray Box]		[Hatched Box]		[Solid Black Box]			
Playgrounds, Neighborhood Parks, Amphitheaters	[Solid Gray Box]				[Hatched Box]	[Solid Black Box]		
Office Buildings, Business Commercial and Professional	[Solid Gray Box]			[Hatched Box]	[Solid Black Box]			
Industrial, Utilities, Manufacturing, Agriculture	[Solid Gray Box]				[Hatched Box]			
Golf Courses, Riding Stables, Outdoor Spectator Sports	[Solid Gray Box]				[Hatched Box]	[Solid Black Box]		

Source: City of Grass Valley 1999a, Table 6-8

**TABLE 3.9-4
NOISE LEVEL PERFORMANCE STANDARDS
FIXED NOISE SOURCES**

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Leq, dB	55	50
Maximum Level, dB	75	65

Source: City of Grass Valley 1999a, Table 6-5

Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises (e.g., humming sounds, outdoor speaker systems, shooting ranges). These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

**TABLE 3.9-5
MAXIMUM ALLOWABLE NOISE EXPOSURE
TRANSPORTATION NOISE SOURCE**

Land Use	L _{dn} /CNEL, dB, at Outdoor Activity Area	Interior Spaces	
		L _{dn} /CNEL, dB	Leq, dB ¹
Residential	60 ²	45	–
Transient Lodging	60 ³	45	–
Hospitals, Nursing Homes	60 ²	45	–
Theaters, Auditoriums, Music Halls	–	–	35
Churches, Meeting Halls	60 ²	–	40
Office Buildings	–	–	45
Schools, Libraries, Museums	–	–	45
Playgrounds, Neighborhood Parks	70	–	–

Source: City of Grass Valley 1999a, Table 6-6

1. As determined for a typical worst-case hour during periods of use.
2. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
3. In the case of hotel/motel facilities or other transient lodging, there may be no designated outdoor activity areas (e.g., pool areas). In such cases, only the interior noise level criterion will apply.

GROUNDBORNE VIBRATION

There are no federal, state, or local regulatory standards for groundborne vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, the California Department of Transportation (Caltrans) has developed vibration criteria based on potential structural damage risks and human annoyance. Caltrans-recommended criteria for the evaluation of groundborne vibration levels, with regard to structural damage and human annoyance, are summarized in **Table 3.9-6** and **Table 3.9-7**, respectively. The criteria differentiate between transient and continuous/frequent sources. Transient sources of groundborne vibration include intermittent events, such as blasting, whereas, continuous and frequent events would include the operation of equipment, including construction equipment, and vehicle traffic on roadways (Caltrans 2002, 2004).

The Caltrans-recommended groundborne vibration criteria for evaluation of potential structural damage is based on building classifications, which take into account the age and condition of the building. For residential structures and newer buildings, Caltrans considers a minimum peak-particle velocity (ppv) threshold of 0.25 inches per second (in/sec) for transient sources and 0.04 in/sec for continuous/frequent sources to be sufficient to protect against building damage. Continuous groundborne vibration levels below approximately 0.02 in/sec ppv are unlikely to cause damage to any structure. In terms of human annoyance, continuous vibrations in excess of 0.04 in/sec ppv and transient sources in excess of 0.25 in/sec ppv are identified by Caltrans as the minimum perceptible level for ground vibration. Short periods of ground vibration in excess of 2.0 in/sec ppv can be expected to result in severe annoyance to people. Short periods of

3.9 NOISE

ground vibration in excess of 0.1 in/sec ppv (0.2 in/sec ppv within buildings) can be expected to result in increased levels of annoyance (Caltrans 2002, 2004).

TABLE 3.9-6
DAMAGE POTENTIAL TO BUILDINGS AT VARIOUS GROUNDBORNE VIBRATION LEVELS

Structure and Condition	Vibration Level (in/sec ppv)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely Fragile Historic Buildings, Ruins, Ancient Monuments	0.12	0.08
Fragile Buildings	0.2	0.1
Historic and Some Old Buildings	0.5	0.25
Older Residential Structures	0.5	0.3
New Residential Structures	1.0	0.5
Modern Industrial/Commercial Buildings	2.0	0.5

Source: Caltrans 2004

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

TABLE 3.9-7
ANNOYANCE POTENTIAL TO PEOPLE AT VARIOUS GROUNDBORNE VIBRATION LEVELS

Human Response	Vibration Level (in/sec ppv)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.10
Severe	2.0	0.4

Source: Caltrans 2004

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

3.9.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following significance thresholds used for the assessment of noise-related impacts are based on the California Environmental Quality Act (CEQA) Guidelines. The City of Grass Valley has determined that a significant impact would result if any of the following were to occur:

- 1) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or of applicable standards of other agencies.

- 2) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- 3) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- 4) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The nearest airports to the project area include the Nevada County Airport, located approximately 3 miles to the northeast, and the Alta Sierra Airport, located over 3 miles south. The proposed project area is not located within 2 miles of a public airport or private airstrip, nor would implementation of the proposed project affect airport operations. For these reasons, there would be no impact related to exposure to substantial aircraft noise, and this issue is not discussed further in this EIR.

Significance of Changes in Ambient Noise Levels

For purposes of this analysis, an increase of 3.0 dB or more would be significant where the ambient noise levels are 65 dB CNEL/L_{dn} or less. An increase in ambient noise levels of 1.5 dB or more would be significant in areas where the ambient noise level exceeds 65 dB CNEL/L_{dn} (City of Grass Valley 1999a, Implementation Action 7-NI).

Significance of Community Noise Exposure

The City of Grass Valley General Plan includes land use compatibility noise criteria that are applicable to newly proposed land uses. The City's land use compatibility noise criteria are presented in **Table 3.9-3**. Proposed land uses located in areas that would exceed the City's "generally acceptable" noise criteria for land use compatibility would be considered to have a significant impact. The City has also adopted exterior and interior noise standards applicable to non-transportation and transportation sources of noise (**Tables 3.9-4** and **3.9-5**, respectively). Project-generated noise levels that would exceed the City's transportation and non-transportation noise standards would be considered to have a significant impact.

METHODOLOGY

Implementation of the proposed project could result in elevated noise levels that may exceed permitted City noise levels. The primary sources of noise associated with the proposed project would be construction activities in the City and project-related traffic volumes associated with operation of those projects. Secondary sources of noise would include new stationary sources (such as heating, ventilation, and air conditioning units) and increased human activity throughout the City. The net increase in noise levels generated by these activities and other sources have been quantitatively estimated and compared to the applicable noise standards and thresholds of significance.

Aside from noise levels, groundborne vibration would also be generated during the construction phase of future projects in the City by various types of construction equipment. Thus, the groundborne vibration levels generated by construction equipment have also been quantitatively estimated and compared to applicable thresholds of significance.

3.9 NOISE

Because no specific projects are being proposed at this time, the analysis relies on a combination of existing sources, noise level measurements, and application of accepted noise prediction methods to predict changes in ambient noise levels resulting from project-related development. Specific noise sources evaluated in this section include traffic and future noise sources that will result from development of the project area. Noise impacts of each of these major noise sources are described below.

Transportation Sources

The proposed project area is not located in the vicinity of local airports or railroad corridors. As a result, potential noise impacts associated with the proposed project would be limited to potential increases in vehicular traffic noise along area roadways. As noted above, this Draft EIR relies on the City's 2020 General Plan noise contours to identify areas potentially impacted by vehicular traffic noise, since the average daily trips (ADT) used in the 2020 General Plan are essentially the same or less than the ADT noted in the current existing conditions. Traffic volumes for existing conditions were obtained from Section 3.13, Transportation and Circulation, of this EIR. Noise impacts associated with transportation noise sources were determined based on the noise criteria identified in the City's General Plan Noise Element (**Tables 3.9-5 and 3.9-6**).

Non-Transportation Sources

Existing non-transportation sources of noise in the project area consist of industrial land uses located on the east side of SR 49. Primary noise sources associated with these land uses would include operation of the ready-mix concrete batch plant, as well as the intermittent operation of off-road equipment (i.e., front-end loaders) and trucks. The analysis assumes typical noise levels from equipment and operational characteristics of a concrete or asphalt batch plant would range from 80 to 90 dB at 50 feet.

The proposed project includes the potential for a mix of land uses, including commercial, industrial, business park, and residential. These land uses could also result in new stationary noise sources. Temporary construction activities associated with the development of these land uses would also result in temporary increases in non-transportation source noise levels. Non-transportation sources of noise associated with the temporary construction and long-term operation of the proposed land uses were evaluated based on noise levels typically associated with these uses.

Predicted noise levels at nearby noise-sensitive land uses assume an average noise-attenuation rate of 6 dB per doubling of distance from the source. Noise impacts associated with existing and proposed non-transportation noise sources were determined based on the noise criteria identified in the City of Grass Valley General Plan Noise Element (**Table 3.9-4**).

Groundborne Vibration

Short- and long-term noise and groundborne vibration impacts were qualitatively discussed based on vibration levels commonly associated with stationary and mobile sources and impact criteria derived from existing environmental documentation. Groundborne vibration levels exceeding Caltrans-recommended vibration criteria (**Tables 3.9-6 and 3.9-7**) would be considered to have a significant impact.

PROJECT IMPACTS AND MITIGATION MEASURES

Exposure to Construction Noise (Standards of Significance 1 and 4)

Impact 3.9.1 Construction-generated noise levels associated with future development in the project area could result in a substantial increase in ambient noise levels at nearby noise-sensitive land uses. This impact is considered **potentially significant**.

Construction noise in any one particular area would be temporary and would include noise from activities such as excavations, site preparation, truck hauling of material, pouring of concrete, and use of power hand tools. Construction noise typically occurs intermittently and varies depending on the nature of the construction activities being performed. Noise generated by construction equipment, including excavation equipment, material handlers, and portable generators, can reach high levels for brief periods.

When noise levels generated by construction operations are being evaluated, activities occurring during the more noise-sensitive evening and nighttime hours are of increased concern. Because exterior ambient noise levels typically decrease during the late evening and nighttime hours as community activities (e.g., commercial activities, vehicle traffic) decrease, construction activities performed during these more noise-sensitive periods of the day can result in increased annoyance and potential sleep disruption for occupants of nearby residential dwellings.

The US Environmental Protection Agency (EPA) has found that the average noise levels associated with construction activities typically range from approximately 76 dBA to 84 dBA L_{eq} , with intermittent individual equipment noise levels ranging from approximately 74 dBA to more than 88 dBA for brief periods. **Table 3.9-8** lists typical uncontrolled noise levels generated by individual pieces of construction equipment at a distance of 50 feet.

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given this noise attenuation rate and assuming no noise shielding from either natural or human-made features (e.g., trees, topography, buildings, fences), outdoor receptors within approximately 800 feet of construction sites could experience average-hourly noise levels of greater than 60 dBA when on-site construction-related noise levels exceed approximately 85 dBA at the boundary of the construction site. During development in the project area, construction activities occurring during the more noise-sensitive late evening and nighttime hours (i.e., 7 p.m. to 7 a.m.) could result in increased levels of annoyance and potential sleep disruption for occupants of nearby noise-sensitive land uses.

3.9 NOISE

TABLE 3.9-8
TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	Typical Noise Level (dBA Lmax) 50 feet from Source
Backhoe	80
Compactor	82
Dozer	85
Grader	85
Loader	85
Truck	88
Air Compressor	81
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Mobile	83
Generator	81
Impact Wrench	85
Jack Hammer	88
Paver	89
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76

Source: FTA 2006

Though specific development is not proposed or known at this time, the proposed project will allow a range of industrial, commercial, business park, and residential buildings, public parks, private recreation areas, associated roadways, parking areas, and public infrastructure. Grading and vegetation removal, as well as construction of buildings, trenching for utilities, and paving of sidewalks, roads, and parking areas, would be required to accommodate this future development. Construction-related activities would require the use of much of the equipment noted above. Any applicant for a specific development and construction-related activity would be required to comply with the City's General Plan noise standards and Municipal Code, including limiting the days and hours of construction activity. The General Plan exempts noise due to construction activities: "Noise due to operation of powered equipment for real property maintenance or temporary construction activities is not subject to the Noise Element Standards" (City of Grass Valley 1999). Therefore, compliance with the Municipal Code limiting the days and

hours of construction activity would provide additional assurances that future construction-related activities would have **less than significant** impacts.

Mitigation Measures

None required.

Increases in Long-Term Operational Traffic Noise (Standards of Significance 1 and 3)

Impact 3.9.2 As development in the project area occurs, traffic volumes would increase and result in an increase in traffic noise levels on the local roadway system. This project-generated traffic is expected to increase traffic noise levels by more than 1.5 dB for roadways that already exceed 65 dB. This impact is considered **potentially significant**.

Though specific development is not proposed or known at this time, the proposed project would allow a range of industrial, commercial, business park, and residential buildings, public parks, private recreation areas, associated roadways, parking areas, and infrastructure. These land uses and activities would result in increased traffic volumes on some area roadways, which would contribute to predicted increases in traffic noise levels.

There are rural residential land uses located along SR 49 and La Barr Meadows Road. These represent the existing noise-sensitive land uses in the vicinity of the project area that could be impacted by the increased noise levels expected from the increased traffic generated from the project. The City's General Plan notes that noise levels within 206 feet of SR 49 and 38 feet of La Barr Meadows Road exceed the 65 dB noise standard. Therefore, this Draft EIR relies on the 1.5 dBA increase criterion to determine a significant impact. Since traffic generated from the proposed project area would increase traffic levels approximately 50 percent over existing levels (see Section 3.13, Transportation and Circulation), the resulting noise level increase would exceed the 1.5 dBA threshold. Therefore, noise impacts to existing residential uses are considered significant.

The proposed project includes areas for future residential use that are intentionally placed away from SR 49 to provide a maximum distance from that noise source. The City General Plan, which as noted provides an accurate representation of the existing traffic, and thus traffic noise levels, estimates the 65 dB noise contour to be 206 feet from SR 49 and 38 feet from La Barr Meadows Road. Residential land uses are included within these contours. Although future development would be required to comply with the City's General Plan noise standards and Municipal Code, since the actual layout for residential uses, including any outdoor activities, is not known at this time, this is considered a potentially significant impact. The following mitigation measure is proposed to address the potential traffic noise impacts on future residential development.

Mitigation Measures

MM 3.9.2 For any residential development proposed within 600 feet of State Route 49 or 100 feet of La Barr Meadows Road, an applicant shall submit an acoustical analysis for any tentative map. If the acoustic analysis shows any proposed outdoor activity area within the 60 dB L_{dn} or greater noise contour, the applicant shall mitigate the impact to a level that is less than 60 dB L_{dn} . Specific mitigation measures include, but are not limited to, (1) a redesign or reorientation of the lots (which allows the home to create a barrier between

3.9 NOISE

the outdoor area and noise source); (2) the addition of solid fencing or wall; (3) an increased setback; or (4) a redesign of the project to utilize the existing development or topography and vegetation to reduce the impact to an acceptable level.

Implementation of the above mitigation measure, along with compliance with General Plan policies and standards, would reduce traffic-related noise impacts on new residential development to a level that is considered less than significant. However, although sound walls may be installed along SR 49 at some point in the future, there is no mitigation available to ensure noise impacts at existing residential areas can be reduced to meet City standards. Therefore, noise impacts to existing residential uses are considered **significant and unavoidable**.

Exposure to Groundborne Vibration (Standard of Significance 2)

Impact 3.9.3 Groundborne vibration levels would not exceed commonly applied criteria for structural damage or human annoyance. Groundborne vibration impacts would be considered **less than significant**.

No major groundborne vibration sources were identified in the vicinity of the project area. Long-term operational activities associated with proposed commercial, industrial, and business park land uses would not be anticipated to include the use of any equipment or processes that would result in potentially significant levels of ground vibration. Specific land uses proposed in the future that could create ground vibration will be subject to the City's development review and/or use permit process. The Development Code requires a use permit for the types of uses typically associated with ground vibration (e.g., mining, heavy manufacturing, scrap and junk yards) that create a discretionary review process and findings that a use will not endanger, jeopardize, or create a hazard to the public convenience, health, interest, safety, or welfare. If such a use is proposed at some point, the City's Development Code would ensure that vibration impacts would be reduced to a less than significant level.

Increases in groundborne vibration levels associated with short-term construction-related activities are expected. Groundborne vibration levels associated with construction equipment are summarized in **Table 3.9-9**. Though specific development is not proposed or known at this time, the proposed project will allow a range of industrial, commercial, business park, and residential buildings, public parks, private recreation areas, associated roadways, parking areas, and infrastructure. The construction-related activities associated with the development of these uses would likely require the use of various tractors, trucks, and jackhammers.

**TABLE 3.9-9
REPRESENTATIVE VIBRATION LEVELS
FOR CONSTRUCTION EQUIPMENT**

Equipment	Peak Particle Velocity at 25 Feet (in/sec ppv)
Large Tractors	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Tractors	0.003

Source: Caltrans 2002, FTA 2006

Based on the vibration levels presented in **Table 3.9-9**, groundborne vibration generated by construction equipment would be less than 0.09 inches per second ppv at 25 feet. Therefore, because ground vibration levels diminish in strength with increased distance from the source, predicted vibration levels at the nearest buildings would not be anticipated to exceed applicable standards for structural damage or human annoyance (refer to **Tables 3.9-6 and 3.9-7**, respectively). Short-term groundborne vibration impacts would be considered **less than significant**.

Mitigation Measures

None required.

Exposure of Sensitive Receptors to or Generation of Excessive Stationary-Source Noise Levels (Standard of Significance 1)

Impact 3.9.4 Stationary sources of noise associated with the project may expose noise sensitive land uses to noise levels that exceed City noise standards. However, because of the location of proposed land uses, required review procedures, and General Plan policies, this impact is considered **less than significant**.

As discussed above, existing sources of noise near the project site consist of industrial land uses located adjacent to La Barr Meadows Road. These existing industrial land uses include construction and landscape material yards, equipment rental operations, and a ready-mix concrete batch plant. Operational hours for these uses are generally limited to the daytime hours of approximately 7:00 a.m. to 5:00 p.m., Monday through Friday, and 8:00 a.m. to noon on Saturdays (HBE 2013). However, the ready-mix concrete batch operations periodically take place any time and day of the week.

The highest operational noise levels associated with the industrial uses would be with the operation of the ready-mix concrete batch plant. Activities conducted at batch plants typically included loading of concrete trucks, unloading of material delivery trucks, and unloading of concrete supplement, as well as front-end loader and conveyor operations associated with the loading of raw material into the concrete batch plant. However, as discussed earlier, noise levels associated with a typical concrete/asphalt batch plant range from 80 to 90 dBA at 50 feet. There are no existing or proposed noise-sensitive land uses within 2,000 feet of the batch plant. Therefore, using the standard average noise-attenuation rate of 6 dB per doubling of distance from the source, at even a conservative noise level of 90 dBA, noise levels would drop below 60 dBA at approximately 1,600 feet.

Though specific development is not proposed or known at this time, the proposed project will allow a range of industrial, commercial, business park, and residential buildings. Depending on the location, type, and design of residential buildings, residents could be exposed to noise levels from existing and future industrial activities. As part of this project, the City proposes to locate the residential General Plan and prezone designations on the east side of SR 49 at the far northern and southern ends of the project area, farthest away from the existing industrial uses. The project purposely removes the current residentially designated areas located on the east side of SR 49 and clusters those densities to the north and south to reduce the current potential noise conflicts with the existing industrial uses. The proposed residential areas are adjacent to proposed industrially designated lands, which are vacant, but could result in a noise conflict at some point in the future. General Plan policies require acoustical studies and mitigation to meet City standards. Therefore, the subdivision and development review process would ensure that

3.9 NOISE

specific development proposed in the future will be subject to site plan review to evaluate impacts associated with the use. Therefore, the goals, objectives, and policies of the City's General Plan, along with the City's Development Code, will ensure the project will have a **less than significant** impact related to stationary noise sources.

Mitigation Measures

None required.

3.9.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative context for traffic noise is based on the traffic analysis prepared for the project. The traffic analysis is based on data obtained from the City's travel demand model, which includes annual growth rates for roadway segments to project model volumes and extrapolated to year 2035. Because construction noise is generally limited to the vicinity of individual project sites, and because construction activities would have to be concurrent to have a cumulative effect, construction activities in the project area would generally not combine with other construction activities in the overall area to result in a cumulative effect. Similarly, as discussed above, groundborne vibration diminishes substantially with distance, so the potential for land uses on separate sites to combine to create substantial vibration effects is minimal.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Increases in Long-Term Operational Traffic Noise

Impact 3.9.5 The proposed project would contribute to the cumulative traffic noise environment at nearby land uses. The project's contribution to this impact would be **cumulatively considerable**.

Cumulative traffic in the City would result in substantial increases in noise along roadway segments under future conditions. The General Plan, as shown in **Table 3.9-2** above, estimates noise levels along portions of SR 49 and SR 20 to exceed 70 dB. Existing sensitive receptors along these roadways could be subject to noise levels that exceed City standards. This would be a significant cumulative impact. As discussed above, the proposed project would contribute to traffic noise in the City, including traffic noise on SR 49 and SR 20. The project's contribution would result in up to an approximately 40 percent increase in traffic on State Route 49 between McKnight Way and Crestview Drive in the cumulative condition (see Section 3.13, Transportation and Circulation). Because the noise levels along SR 49 would exceed City standards without the project, the contribution of the proposed project to future roadway noise levels would be considered cumulatively considerable. Although new sensitive uses in the project area and throughout the City would be required to comply with General Plan Policy 4-NI, which requires preparation of a noise analysis that would take into account traffic noise levels, existing sensitive receptors would be exposed to increased noise levels from traffic. Therefore, the cumulative impact would be **cumulatively considerable** and **significant and unavoidable**.

Mitigation Measures

None available.

Exposure of Sensitive Receptors to or Generation of Excessive Stationary-Source Noise Levels (Standards of Significance 1, 2, 3, and 4)

Impact 3.9.6 Operation of the proposed project could contribute to the noise and vibration environment at nearby land uses. Compliance with the goals, objectives, and policies of the General Plan, along with the City's Development Code, will ensure the project's contribution to noise or vibration levels would be **less than cumulatively considerable**.

No new proposals for development have been identified as part of this project. Since additional development in this area, similar to the types of land uses in existence, is already permitted by Nevada County, it is expected that vacant lands will be developed, whether or not the area is annexed into the City. The annexation of these parcels into the City limits has been envisioned in the City's General Plan and the Sphere of Influence Plan. As noted above, the proposed project does not propose any noise-sensitive land uses next to existing stationary noise sources. The project reduces potential noise conflicts by eliminating the rural residential designated lands currently next to these noise sources and proposes them as open space. The project purposely removes the current residentially designated areas located on the east side of SR 49 and clusters those densities to the north and south to reduce potential noise conflicts with the existing industrial uses. The proposed residential areas are adjacent to proposed industrially designated lands, which are vacant, but could result in residential uses adjacent to industrial uses at some point in the future. The City's General Plan policies, along with the subdivision and development review process, would ensure that specific development proposed in the future will be subject to specific site plan review, including an analysis of noise and vibration. This process will allow the City to evaluate specific impacts associated with the use. Specifically, the City's tentative map and development review process require a specific project to evaluate the location and site plan in relation to surrounding uses to determine if there is a potential impact, and if necessary, develop appropriate mitigation as part of the subsequent environmental review process.

Any future development or proposed projects within the annexation area will have to undergo environmental review and noise assessment. Therefore, the cumulative impacts associated with stationary-source noise levels in the project area are considered **less than cumulatively considerable**.

Mitigation Measures

None required.

3.9 NOISE

REFERENCES

- Ambient Air Quality & Noise Consulting. 2009. Noise Modeling Worksheets.
- Bollard Acoustical Consultants, Inc. 2005. *Environmental Noise Assessment, Crestview Drive Intersection, Nevada County, California.*
- Caltrans (California Department of Transportation). 2002. *Transportation Related Earthborne Vibrations.*
- . 2004. *Transportation- and Construction-Induced Vibration Guidance Manual.*
- . 2008. *IS/EA Annotated Outline.*
<http://www.dot.ca.gov/ser/vol1/sec4/ch31ea/chap31ea.htm>.
- City of Grass Valley. 1999a. *City of Grass Valley 2020 General Plan, Noise Element.*
- . 1999b. *Environmental Impact Report for the City of Grass Valley 2020 General Plan.*
- . 2013. *City of Grass Valley Municipal Code, Chapter 8.28, Noise.*
http://www.cityofgrassvalley.com/services/resources/municodes/Title_8/28/100.html.
- City of Greenfield. 2008. *Don Chapin Batch Plant CUP & Industrial Annexation, Greenfield, CA.*
- EPA (US Environmental Protection Agency). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances.*
- FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment.*
- HBE (Hansen Brothers Enterprise). 2013. Accessed September 6, 2013.
<http://www.gohbe.com/index.php/about-us/about-us>.
- OPR (Governor's Office of Planning and Research). 1998. *State of California General Plan Guidelines.*
- US Concrete. 2008. *Noise Impact Analysis: Central Concrete Supply, Cameron Park, CA.*

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

This section describes the existing and proposed land uses, land use designations, and zoning in the project area, characterizes surrounding uses, and discusses the project in the context of the General Plan and other adopted plans and policies pertinent to the project area. Because the proposed project includes the annexation of approximately 120 acres of the total project area, this section also includes information on relevant Nevada County Local Agency Formation Commission (LAFCo) policies. Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines states, "The EIR shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans." This section also addresses agricultural and forestlands and the potential impacts of the proposed project on these resources. Key issues addressed in this section include conflicts/incompatibilities between urban land uses and agricultural or forest operations and loss of these lands.

There were no comments raised concerning proposed land uses for the project area in response to the Notice of Preparation (see **Appendix 1.0-1**).

3.10.1 EXISTING SETTING

PROJECT AREA EXISTING LAND USES

The project site is located in the unincorporated area of Nevada County adjacent to the southern City limits of Grass Valley. No active timber or agricultural operations are taking place in or adjacent to the project area. The Berriman Ranch property contains remnants of a small fruit orchard, but the property has not been farmed or maintained for many years. As noted in Section 3.7, Hazards and Hazardous Materials, of this EIR, the orchard area has a white soil layer that contains arsenic, lead, and mercury, likely due to irrigation waters that carried mine tailings.

- Of the 416 acres in the project area, approximately 350 acres are currently vacant.
- Of the 120 acres proposed for annexation, approximately 65 acres are developed with existing uses (see **Table 2.0-1**).

ADJACENT EXISTING LAND USES

The project area has an irregular shape and is bisected by State Route 49. La Barr Meadows Road also bisects much of the portion of the project area that is east of SR 49. The northern boundary is the current City boundary, with commercial uses to the north of the project area. The areas to the west include the Gazebos and Carriage House developments that are located in the City limits and smaller rural residential land uses ranging from 0.5 to 5 acres in size that are located in the unincorporated area. Wolf Creek is located approximately 2,200 feet west of SR 49 and approximately 200 feet lower in elevation than the lowest portion of the project area. Beyond La Barr Meadows Road, land uses include rural residential and vacant lands. There are existing rural residential uses immediately to the south, and the Alta Sierra Country Club and associated residential uses are located approximately 3 miles south of the project area. Empire Mine State Park and vacant lands are located to the east of the project area.

CURRENT LAND USE DESIGNATIONS AND ZONING

Table 2.0-1 includes a list of the current City General Plan land use designations and Nevada County's zoning designations for each parcel in the project area. This table also includes the proposed new General Plan land use designations and the proposed City rezoning, which will be consistent with the General Plan.

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

3.10.2 REGULATORY FRAMEWORK

FEDERAL

No applicable federal agencies, plans, or policies oversee local planning issues. There are no habitat conservation plans or natural community conservation plans in or near the project area.

STATE

Planning and Zoning Law

Planning and zoning law (Government Code Section 65000 et seq.) requires each county and city to have a general plan consisting of a minimum of seven mandatory “elements” (see Government Code Section 65300). These elements must address the following subjects: land use, circulation, housing, conservation, open space, noise, and safety (Government Code Section 65302). By statute, specific plans, zoning actions, development agreements, and tentative maps all must be consistent with the general plan (Government Code Sections 65454 [specific plans], 65680 [zoning], 65867.5 [development agreements], and 66473.5 [tentative maps],¹ and 536 [zoning]). Case law has extended the consistency requirement to conditional use permits and public works projects (*Neighborhood Action Group v. County of Calaveras* (1984) 156 Cal.App.3d 1176, 1183–1184 [use permits]; *Friends of “B” Street v. City of Hayward* (1980) 106 Cal.App.3d 988,998 [public works projects]). Even though Grass Valley is a charter city and exempt from many of the consistency requirements, the City strives to achieve consistency with all elements of its General Plan and Development Code. The City includes a General Plan consistency finding in all of its discretionary land use actions. Furthermore, the proposed General Plan land use designations are consistent with the proposed rezoning designations.

LOCAL

Nevada County Local Agency Formation Commission (LAFCo)

Each county has a Local Agency Formation Commission (LAFCo), consistent with the requirements of Section 56001 of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000. Each LAFCo is intended to encourage orderly growth and development essential to the social, fiscal, and economic well-being of the state. Specific elements established by the act encourage orderly development patterns by discouraging urban sprawl and preserving open-space and prime agricultural lands (Government Code Section 56001). In order to implement the requirements listed above, LAFCos have the specific authority to review the following actions:

- Annexations to, or detachment from, cities or districts
- Formations or dissolution of districts
- Incorporation or disincorporation of cities
- Consolidation or reorganization of cities and districts

¹ See also *Leshar Communications, Inc. v. City of Walnut Creek* (1990) 52 Cal.3d 531.

- Establishment of subsidiary districts
- Development of, and amendments to, spheres of influence

Government Code Section 56300 provides that all LAFCOs must exercise their powers "in a manner that encourages and provides planned, well-ordered, efficient urban development patterns with appropriate consideration of preserving open space and agricultural lands within those patterns." Section 56377 states that, in reviewing "proposals" that "could reasonably be expected to induce, facilitate, or lead to the conversion of existing open-space lands to uses other than open-space uses," LAFCOs shall consider the following policies: "development or use of land for other than open space uses shall be guided away from existing prime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area"; and "development of existing vacant or nonprime agricultural lands for urban uses within the existing jurisdiction of a local agency or within the sphere of influence of a local agency should be encouraged before any proposal is approved which would allow for or lead to the development of existing open space lands for non-open-space uses which are outside of the existing jurisdiction of the local agency or outside of the existing sphere of influence of the local agency." Section 56668 provides that, in reviewing a "proposal," a LAFCo shall consider all of the following:

- (a) Population and population density; land area and land use; per capita assessed valuation; topography, natural boundaries, and drainage basins; proximity to other populated areas; the likelihood of significant growth in the area, and in adjacent incorporated and unincorporated areas, during the next 10 years.*
- (b) Need for organized community services; the present cost and adequacy of governmental services and controls in the area; probable future needs for those services and controls; probable effect of the proposed incorporation, formation, annexation, or exclusion and of alternative courses of action on the cost and adequacy of services and controls in the area and adjacent areas.*
- (c) The effect of the proposed action and of alternative actions, on adjacent areas, on mutual social and economic interests, and on the local governmental structure of the county.*
- (d) The conformity of both the proposal and its anticipated effects with both the adopted LAFCO policies on providing planned, orderly, efficient patterns of urban development, and the policies and priorities set forth in Section 56377.*
- (e) The effect of the proposal on maintaining the physical and economic integrity of agricultural lands.*
- (f) The definiteness and certainty of the boundaries of the territory, the nonconformance of proposed boundaries with lines of assessment or ownership, the creation of islands or corridors of unincorporated territory, and other similar matters affecting the proposed boundaries.*
- (g) Consistency with city or county general and specific plans.*
- (h) The sphere of influence of any local agency which may be applicable to the proposal being reviewed.*

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

- (i) The comments of any affected local agency.
- (j) The ability of the newly formed or receiving entity to provide the services which are the subject of the application to the area, including the sufficiency of revenues for those services following the proposed boundary change.
- (k) Timely availability of water supplies adequate for projected needs.
- (l) The extent to which the proposal will affect a city or cities and the county in achieving their respective fair shares of regional housing needs.
- (m) Any information or comments from the landowner or owners.
- (n) Any information relating to existing land use designations.

This EIR will be used by Nevada County LAFCo during its review of the City's application to annex 120 acres in the project area. Nevada County LAFCo has adopted policies to help implement its stated objectives. Policies directly applicable to the proposed project are provided below.

Urban Development: LAFCo will encourage proposals that result in urban development to include annexation to a city wherever reasonably possible and will discourage proposals for urban development without annexation to a city. LAFCo will also encourage cities to annex lands that have been developed to urban levels, particularly areas that receive city services. Urban development includes development that utilizes either public water or sewer and involves industrial or commercial use or residential use with density of at least one unit per 1.5 acres.

Discouraging Urban Sprawl: LAFCo has been directed by the State Legislature to discourage urban sprawl, and the Commission will normally deny proposals that can reasonably be expected to result in sprawl. Sprawl is characterized by irregular, dispersed, and/or disorganized urban or suburban growth patterns occurring at a relatively low density and in a manner that precludes or hinders efficient delivery of municipal services, especially roads, public sewer and public water.

Environmental Consequences (CEQA): LAFCo shall operate in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Sections 21000. LAFCo shall assess the environmental consequences of its actions and decisions and take actions to avoid or minimize a project's adverse environmental impacts, if feasible, or may approve a project despite significant effects because it finds overriding considerations exist. To comply with CEQA, the Commission will operate in accordance with Nevada LAFCo CEQA Guidelines.

Balancing Jobs and Housing: LAFCo will normally encourage those applications which improve the regional balance between jobs and housing. LAFCo will consider the impact of a proposal on the regional supply of residential housing for all income levels. The agency that is the subject of the proposal must demonstrate to the Commission that any adverse impacts of the proposal on the regional affordable housing supply have been mitigated.

Compact Urban Form and infill Development Encouraged: When reviewing proposals that would result in urban development, LAFCo will consider whether the proposed development is timely, compact in form and contiguous to existing urbanized areas.

LAFCo will favor development of vacant or underutilized parcels already within a city or other urbanized area prior to annexation of new territory.

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

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

1. Utilize Existing Public Agencies rather than create new ones.
2. Consolidate the Activities and Services of public agencies in order to obtain economies from the provision of consolidated services.
3. Restructure Agency Boundaries and service areas to provide more logical, effective, and efficient local government services.

Community Impacts: LAFCo will consider the impacts of a proposal and any alternative proposals on adjacent areas, on social and economic interests, and on the local government structure. The Commission may deny a proposal if adverse impacts are not mitigated to an acceptable level.

Agricultural and Open Space Land Conservation: Among LAFCo's core purposes is preservation of open space and prime agricultural lands. The Commission will exercise its powers to conserve prime agricultural land as defined in Section 56064 of the Government Code and open space land as defined in Section 65560 of the Government Code pursuant to the following standards. In order to more effectively carry out this mandate, the Commission may develop local standards to define and identify prime agricultural and open space lands.

As noted above, among LAFCo's core purposes is preservation of open space and prime agricultural lands. This EIR includes an analysis of open space and agricultural resources and whether this project will affect or convert any of these resources. Since CEQA and LAFCo law (Section 56064 of the Government Code) define prime agricultural lands differently, this EIR provides an analysis of both definitions.

Nevada County General Plan

The entire project area is currently located in the unincorporated area of Nevada County. The Nevada County General Plan serves as the overall guiding policy document for the unincorporated areas of Nevada County. **Table 2.0-1** lists the current Nevada County General Plan land use designations for each parcel in the project area. Goal 1.8 and Policies 1.37, 1.38, and 1.40 of the Nevada County General Plan emphasize the compatibility and coordination of land use planning in the City's Sphere of Influence (SOI). Additionally, in 2004 Nevada County and the City entered into a Memorandum of Understanding regarding joint land use planning within the SOI. Over the past two years, Nevada County and the City have been working together to address planning issues and land use designations in the project area. The proposed project is a result of these efforts to recognize and protect industrial lands existing in the project area and to provide additional opportunities for primary (industrial/manufacturing) job creation.

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

City of Grass Valley General Plan

The Grass Valley General Plan serves as the City's overall guiding policy document and identifies specific policies regarding land use. The City's Land Use and Conservation/Open Space elements contain goals, objectives, policies, actions, and strategies applicable to land use and agricultural and open space resources. These elements include various policies that are intended to provide a balance between development and the natural environment. Furthermore, the City's Community Design Element focuses on protecting the built environment in addition to the City's natural environment. The following represent some key, but not all, goals, objectives, and policies of the General Plan that apply to this project and have a mitigating effect with respect to impacts on land use-related resources.

Objective 7-LUO: Preservation of open space and unique property features.

Goal 6-LUG: Promote jobs/housing balance within the Grass Valley region...

Policy 1-LUP: Maintain a General Plan that reflects the needs of the total community, including residents, business and industry.

Policy 13-LUP: Encourage convenience goods and services opportunities to be incorporated into significant development proposals.

Policy 24-LUP: On large parcels, encourage clustering of residential units on the most developable portions of the site in order to reduce infrastructure and other housing related costs.

Policy 25-LUP: Encourage clustering and other land use techniques to protect environmentally sensitive resources, such as heritage trees and wetlands.

Policy 29-LUP: Promote the establishment and expansion of business and industries offering professional, light manufacturing and technical employment opportunities...

Policy 31-LUP: Promote primary jobs and core employment opportunities...

Goal 1-COSG: Provide a balance between development and the natural environment, protecting and properly utilizing Grass Valley's sensitive environmental areas/features, natural resources and open space lands.

Objective 2-COCO: Multi-purpose open space lands, accommodating the needs and requirements of open space/conservation, habitat, recreation and aesthetics.

Policy 3-COSP: Encourage clustering, density averaging, and other techniques in larger-scale new development, as means of preserving open space and natural systems.

Policy 4-COSP: Establish standards for inclusion and management of permanent open space in new developments.

Policy 5-COSP: Carefully regulate development on steep slopes.

Policy 6-COSP: Prevent excessive alteration of the natural topography.

A discussion of the project's consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent

the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

3.10.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The State CEQA Guidelines (Appendix G) state that a project will be expected to result in a significant land use impact if implementation of the project would result in any of the following:

- 1) Physically divide an established community.
- 2) 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.
- 3) Conflict with any applicable habitat conservation plan or natural community conservation plan.

METHODOLOGY

CEQA does not treat project consequences relating solely to land use, socioeconomic, or population, employment, or housing issues as direct physical impacts to the environment. An EIR may provide information regarding land use, planning, and socioeconomic effects; however, CEQA does not recognize these types of project consequences as typical impacts on the physical environment. The impact assessment of this section focuses on changes in land use, use compatibility, and General Plan consistency, to the extent that potential General Plan conflicts may lead to physical impacts on the environment. Physical effects on the environment that could result from implementation of the project are addressed in the appropriate technical sections of this EIR.

Key source documents used in the preparation of this section include:

- Grass Valley General Plan (1999)
- Grass Valley Development Code
- Nevada County General Plan (1996, amended 2008 and 2010)
- Local Agency Formation Commission of Nevada County Policies (adopted 1994, amended 2008)

The Grass Valley City Council is ultimately responsible for interpreting the City's General Plan and would determine if the project is inconsistent with any adopted land use goals or policies. Nevada County LAFCo would ultimately determine the consistency of the project with LAFCo policies. This section differs from other technical sections in that only policy and plan consistencies are addressed, as opposed to environmental impacts and mitigation measures. This discussion

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

complies with Section 15125(d) of the CEQA Guidelines, which requires an EIR to discuss inconsistencies with general plans and regional plans as part of the environmental setting.

PROJECT IMPACTS AND MITIGATION MEASURES

Physically Divide an Established Community (Standard of Significance 1)

Impact 3.10.1 The proposed project would not physically divide an established community. **No impact** will occur.

Division of an established community commonly occurs as a result of development of physical features that constitute a barrier to easy and frequent travel between two or more constituent parts of a community. For example, a large freeway structure with few crossings could effectively split a community. As noted in the project objectives, the project implements the General Plan and provides a land use plan that ensures long-term community benefit by reducing existing land use conflicts and by providing opportunities for a range of jobs to meet the needs of the community. The project proposes to change land use designations, but it remains consistent with the City and Nevada County General Plans, both of which currently designate the project area for urban development. The entire project is within the City's Sphere of Influence, which represents the land predicted to be in the City. The project does not include any provisions which would result in a physical division of the area from Grass Valley. Therefore, future development associated with this project would not physically divide an established community, and **no impact** will occur.

Mitigation Measures

None required.

Conflict with Any Applicable Land Use Plan, Policy, or Regulation of an Agency with Jurisdiction Over the Project Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect (Standard of Significance 2)

Impact 3.10.2 The project proposes to amend the City of Grass Valley General Plan land use designations within the project area. Additionally, the project proposes to prezone the project area with designations consistent with the General Plan land use designations. This impact is considered **less than significant**.

Both the City and Nevada County General Plans currently designate the entire project area for urban and rural development. Even though the project will amend the General Plan land use designations in most of the project area, the proposed changes are consistent with the City's General Plan policies (see **Appendix 3.1-1**). The proposed rezoning will achieve consistency with the General Plan land use designations. Since this project area is currently under the jurisdiction of Nevada County, this planning effort is being done in coordination with Nevada County to ensure no conflicts will occur. As noted in the project objectives, the proposed changes are intended to create a more urban land use pattern, provide opportunities to meet a full range of job types, provide open space areas to protect sensitive resources, and provide more cost-effective infrastructure, specifically sewer, to serve the area. For parts of the project area, the current City and Nevada County land use designations allow a more rural and suburban-style land use pattern. Since the project will result in an overall more urbanized and sustainable land use pattern, in addition to setting aside 116 acres of the more environmentally sensitive lands as open space, the project will enhance rather than avoid environmental effects.

Since this project will not result in a conflict with any applicable land use plan, the impacts are considered **less than significant**.

Mitigation Measures

None required.

Conflict with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan (Standard of Significance 3)

Impact 3.10.3 The project site is not within or near the boundaries, nor to any, habitat conservation plan or natural community conservation plan. **No impact** will occur.

There are no adopted habitat conservation plans (HCP) or natural community conservation plans (NCCP) in Nevada County. Even though there are no such plans in or near the project area, this project proposes to set aside 116 acres in open space along Wolf Creek and in areas containing wetlands and steeper slopes. Since this project would not conflict with a HCP or NCCP, there would be **no impact**.

Mitigation Measures

None required.

3.10.4 AGRICULTURAL RESOURCES

FARMLAND CLASSIFICATIONS AND RATING SYSTEM

Farmland classification programs are used to determine the agricultural productivity of a particular soil. The two systems used by the US Department of Agriculture, Natural Resources Conservation Service (NRCS) to determine a soil's agricultural productivity are the Land Capability Classification System and the Storie Index Rating System. The Land Capability Classification System takes into consideration soil limitations, the risk of damages when the soils are used, and the way in which soils respond to treatment, whereas the Storie Index Rating System ranks soils based on their suitability for agriculture.

Land Capability Classification System

The Land Capability Classification System is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time. Capability classes, the broadest groups, are designated by numerals 1 through 8. Generally, as the ratings of the classification system increase, yields and profits are more difficult to obtain. Descriptions of land capability classes, as defined by the NRCS Soil Survey Handbook, are provided in **Table 3.10-1**.

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

TABLE 3.10-1
LAND CAPABILITY CLASSIFICATION SYSTEM – CLASS DEFINITIONS

Class	Definition
1	Soils have few limitations that restrict their use
2	Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices
3	Soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both
4	Soils have very severe imitations that reduce the choice of plants or that require very careful management, or both
5	Soils are not likely to erode but have other limitations, impractical to remove, that limit their use
6	Soils have severe limitations that make them generally unsuitable for cultivation
7	Soils have very severe limitations that make them unsuitable for cultivation
8	Soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production

Source: USDA-NRCS 2012

Capability subclasses are soil groups within any one soil class that indicate the specific limitation of that soil class. Subclasses are designated by adding a small letter, e, w, s, or c, to the class numeral; for example, 2e. The capability subclasses are defined in **Table 3.10-2** below.

TABLE 3.10-2
LAND CAPABILITY CLASSIFICATION SYSTEM – SUBCLASS DEFINITIONS

Subclass	Definition
e	Indicates that the main hazard is the risk of erosion unless close-growing plant cover is maintained
w	Indicates that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage)
s	Indicates that the soil is limited mainly because it is shallow, droughty, or stony
c	Indicates that the chief limitation is climate that is very cold or very dry (used in only some parts of the United States)

Source: USDA-NRCS 2012

Capability subclasses are further delineated into capability units that group soils which are similar enough to be suited to the same crops and pasture plants, require similar management, and have similar productivity.

Storie Index Rating System

The Storie Index Rating System ranks soil characteristics according to their suitability for agriculture. Ratings range from Grade 1 soils (80 to 100 rating), which have few or no limitations for agricultural production, to Grade 6 soils (rating of less than 10), which are not suitable for agriculture. The Storie Index Rating System ranks four factors: soil profile, surface soil texture, slope of the land, and other conditions exclusive of profile such as drainage, alkali content, or erosion. The percentage values for the four factors are multiplied to get the Storie Index Rating (University of California 1978, p.1). The six grades, ranges in index rating, and definition of grades, as defined by the NRCS, are provided in **Table 3.10-3**.

**TABLE 3.10-3
STORIE INDEX RATING SYSTEM**

Grade	Index Rating	Definition
1 – Excellent	80 through 100	Soils are well suited to intensive use for growing irrigated crops that are climatically suited to the region.
2 – Good	60 through 79	Soils are good agricultural soils, although they may not be so desirable as Grade 1 because of moderately coarse, coarse, or gravelly surface soil texture; somewhat less permeable subsoil; lower plant available water holding capacity, fair fertility; less well drained conditions, or slight to moderate flood hazards, all acting separately or in combination.
3 – Fair	40 through 59	Soils are only fairly well suited to general agricultural use and are limited in their use because of moderate slopes; moderate soil depths; less permeable subsoil; fine, moderately fine or gravelly surface soil textures; poor drainage; moderate flood hazards; or fair to poor fertility levels, all acting alone or in combination.
4 – Poor	20 through 39	Soils are poorly suited. They are severely limited in their agricultural potential because of shallow soil depths; less permeable subsoil; steeper slope; or more clayey or gravelly surface soil textures than Grade 3 soils, as well as poor drainage; greater flood hazards; hummocky micro-relief; salinity; or fair to poor fertility levels, all acting alone or in combination.
5 – Very Poor	10 through 19	Soils are very poorly suited for agriculture, are seldom cultivated, and are more commonly used for range, pasture, or woodland.
6 – Nonagricultural	Less than 10	Soils are not suited for agriculture at all due to very severe to extreme physical limitations, or because of urbanization.

Source: University of California 1978

Project Area Characteristics

Currently, the project site is not used for any commercial agricultural purposes; however, Berriman Ranch located on the west side of State Route (SR 49) contains remnants of a small ranch complex and orchard. There are no commercial agricultural operations adjacent to, or in the vicinity of, the project.

Listed below are the soil types found in the project area. The Land Capability Classification System and Storie Index rating and grade for these soils are presented in **Table 3.10-4**. As shown, the majority of the project site has a Storie Index Grade of 2, 3, and 4, indicating soils that are only fairly well suited to general agricultural use and are limited in their use or soils that are poorly suited for agricultural use (USDA-NRCS 2013).

**TABLE 3.10-4
PROJECT AREA SOIL RATINGS**

Soil Type	Acreage Within Project Area	Soil Capability Classification	Storie Index Grade
Alluvial land, clayey	28.71	3w	Not rated
Cut and fill land	32.46	Not rated	Not rated
Hoda sandy loam, 15–50% slopes	10.69	7e	3
Horseshoe gravelly loam, 9–15% slopes	14.31	3e	3

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

Soil Type	Acreage Within Project Area	Soil Capability Classification	Storie Index Grade
Musick sandy loam, 5–15% slopes	56.13	3e	1
Musick sandy loam, 15–50% slopes	143.72	7e	2
Musick-Rock outcrop complex, 5–50% slopes	0	7e	2
Placer diggings	13.21	Not rated	Not rated
Sites loam, 2 to 9% slopes	7.21	2e	1
Sites loam, 15 to 30% slopes	10.71	4e	2
Sites very stony loam, 15 to 50% slopes	116.70	6e	4

Source: USDA-NRCS 2013

Department of Conservation Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP), administered by the California Department of Conservation (DOC), uses a series of definitions known as Land Inventory and Monitoring (LIM) criteria to classify farmland in California. The LIM criteria were originally developed nationally by the NRCS and classified the land's suitability for agricultural production; suitability included both the physical and chemical characteristics of soils and the actual land use. The Farmland Mapping and Monitoring Program uses LIM criteria modified for California, including consideration for physical conditions such as a dependable water supply for agricultural production, soil temperature range, depth of the groundwater table, flooding potential, rock fragment content, and rooting depth.

The FMMP compiles and continually updates Important Farmland Maps for the state by identifying five agriculture-related categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land.

Project Site Characteristics

The entire project area is designated as Urban and Built-Up or Other Land by the FMMP. As previously stated, the project area is not currently used for any commercial agricultural purposes. The FMMP definitions for the farmland designations that occur on the project site are as follows (DOC 2010a):

- Urban and Built-Up – Occupied by structures, with building density of at least 1 unit to 1.5 acres. Common uses include residential, commercial, and industrial.
- Other Land – Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

Williamson Act Contract Lands

The Williamson Act is a mechanism for protecting agricultural and open space land from premature and unnecessary urban development whereby landowners receive property tax

assessments which are much lower than normal in exchange for restricting their land to agricultural or related open space use. None of project area and none of the adjacent properties are subject to a Williamson Act contract.

STANDARDS OF SIGNIFICANCE

The State CEQA Guidelines (Appendix G) state that a project will be expected to result in a significant land use impact if implementation of the project would result in any of the following:

- 1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.
- 2) Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- 3) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use.

Definition of Agricultural Lands

As reflected in Standard of Significance 1 above, CEQA Statute (Public Resources Code Section 21060.1) defines "agricultural land" as:

Agricultural land means prime farmland, farmland of statewide importance or unique farmland, as defined by the United States Department of Agriculture land inventory and monitoring criteria, as modified for California.

METHODOLOGY

This analysis of agriculture resources was based on review of current uses of the project area, soil characteristics, and the project area's farmland classifications per the NRCS and the Farmland Mapping and Monitoring Program. This information was used to determine the proposed project's specific agriculture-related impacts, paying particular attention to the potential direct and indirect conversion of farmland. The impact analysis below focuses on whether those impacts would be significant and if so, whether existing regulations would mitigate impacts. The discussion of impacts below focuses on CEQA's definition of farmland. LAFCo's definition and use of farmland is described in subsection 3.10.6 below.

PROJECT IMPACTS AND MITIGATION MEASURES

Conversion of Farmland to Nonagricultural Uses (Standard of Significance 1)

Impact 3.10.4 The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, **no impact** will occur.

No portion of the project site is designated by the Farmland Mapping and Monitoring Program as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (DOC 2010a). Furthermore, the project area and the surrounding parcels do not contain any commercial agricultural operations. Since the project will not convert agricultural land as defined by CEQA and its standards of significance, this project will have **no impact** on agricultural resources.

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

Mitigation Measures

None required.

Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract (Standard of Significance 2)

Impact 3.10.5 The proposed project would not conflict with or change any lands zoned for agricultural use or impact any lands with a Williamson Act contract. therefore, **no impact** will occur.

The project area is currently zoned for urban and rural residential use by Nevada County. Neither the project site nor any of the surrounding parcels is subject to land under a Williamson Act contract. Therefore, the project will not conflict with any existing zoning or an existing Williamson Act contract, and **no impact** will occur.

Mitigation Measures

None required.

Involve Other Changes That Could Result in the Conversion of Farmland to Nonagricultural Uses (Standard of Significance 3)

Impact 3.10.6 The proposed project would not involve any other changes in land use that would impact existing farmland on site or in the area. Therefore, **no impact** will occur.

As described above, none of the project area is farmed at this time. There are no commercial agricultural uses taking place adjacent to or in the vicinity of the project. The project area is within the City of Grass Valley's SOI and is planned for and expected to develop for urban development purposes as it is annexed to the City. Since the project will not impact any existing farmland, the project will have **no impact** on existing farmland.

Mitigation Measures

None required.

3.10.5 FOREST RESOURCES

FORESTRY RESOURCES DEFINED

Forestland is defined in Public Resources Code Section 12220(g) as:

Land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

Timberland is defined in Public Resources Code Section 4526 as:

Land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees.

According to the Nevada County General Plan, commercial timberlands are located primarily in the middle and eastern areas of Nevada County, at elevations ranging from 1,200 feet above sea level in the west to over 9,000 feet in the east. The most extensive timberlands are located in the Tahoe National Forest, where nearly 200,000 acres are considered suitable for timber production (Nevada County 1996).

PROJECT AREA CHARACTERISTICS

Portions of the project area are covered with ponderosa pine, California black oak, and several kinds of oak-dominated woodlands. Most of the tree stands are concentrated on the steeper hills east of La Barr Meadows Road, along SR 49, and in the ravines and steeper terrain on the land west of SR 49. Given that the site supports a significant number of native trees, it appears to be consistent with the definition for forestland provided in Public Resources Code Section 12220(g), as described above.

None of the project area is currently designated or zoned by Nevada County for timberland production or other forestry-related uses and is not in a designated Timber Preserve Zone (TPZ). Furthermore, the City and Nevada County General Plans do not designate any of the project area for timber or forest-related uses. Therefore, the site does not meet the definition for timberland provided in Public Resources Code Section 4526, as described above.

STANDARDS OF SIGNIFICANCE

The State CEQA Guidelines (Appendix G) state that a project will be expected to result in a significant land use impact if implementation of the project would result in any of the following:

- 1) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
- 2) Result in the loss of forestland or conversion of forestland to non-forest use.

METHODOLOGY

This analysis of forest resources was based on review of current uses of the project area. This information was used to determine the proposed project's specific impacts, paying particular attention to the potential direct and indirect conversion of forestland. The impact analysis below focuses on whether those impacts would be significant and if so, whether existing regulations would mitigate impacts.

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

PROJECT IMPACTS AND MITIGATION MEASURES

Conflict with Existing Zoning for Forestland, Timberland, or Timberland Production (Standard of Significance 1)

Impact 3.10.7 The proposed project would not conflict with or change the zoning of any lands zoned for forestland, timberland, or timberland production. Therefore, **no impact** will occur.

None of the project area is zoned for forestland, timberland, or timberland production. Nevada County's current zoning of the project area includes M1, BP, C2, and RA-1.5. These zones are for urban and rural residential uses. Furthermore, the City and Nevada County General Plans do not designate any of the project area for timber or forest-related uses. Since this project will not result in the rezoning of any lands zoned for forestland or timberland use, and the land is not zoned for timberland production, **no impact** will occur.

Mitigation Measures

None required.

Result in the Loss or Conversion of Forestland to Non-Forest Use (Standard of Significance 2)

Impact 3.10.8 Portions of the project area meet the definition of forestland. This impact would be **potentially significant**.

The project area does not contain any timberland (as defined by Public Resources Code Section 4526) and is not zoned for Timberland Production (as defined by Government Code Section 51104(g)). However, as described above, the project area supports a significant number of native trees and therefore meets the criteria for forestland per Public Resources Code Section 12220(g). Future development will require the removal of existing native trees to accommodate future development. Though it is not known what specific type or location of development will take place, the City's General Plan policies, Development Code standards, and Community Design Guidelines include provisions for the protection and incorporation of existing native trees into a project's site plan. These measures are confirmed through the City's site-specific subdivision, development review, and environmental review processes. The proposed project will designate 116 acres for open space. Most of the project area that contains the more concentrated stands of native trees and forestland is proposed for open space. Specifically, the steeper slopes on the east side of La Barr Meadows Road, the areas along Wolf Creek, and the areas with the steeper terrain and ravines located on the west side of SR 49 are proposed for open space. Given that the project will avoid impacts to large portions of the most concentrated forestlands and that future site-specific developments are required to incorporate existing trees into their project, this impact is considered **less than significant**.

Mitigation Measures

None required.

3.10.6 LAFCO AGRICULTURAL AND OPEN SPACE LAND CONSERVATION

This subsection addresses the 120-acre annexation area and provides additional discussion on LAFCo's definition of prime agricultural land and open space land. Even though CEQA does not

require this analysis, nor is there a standard of significance related to the LAFCo definition, this EIR provides a description of these resources in the context of a future LAFCo application. As noted in subsection 3.10.2 above, one of LAFCo's core purposes is the preservation of open space and prime agricultural lands. The following is an excerpt from Government Code Section 56064 related to LAFCOs definition and application of prime agricultural land:

"Prime agricultural land" means an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications:

- (a) Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.*
- (b) Land that qualifies for rating 80 through 100 Storie Index Rating.*
- (c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.*
- (d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars (\$400) per acre.*
- (e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars (\$400) per acre for three of the previous five calendar years.*

None of the project area meets definitions c, d, or e above. As shown in **Table 3.10-4**, the project area contains two soil types that that meet LAFCo's definition of prime agricultural land (a and b above): Musick sandy loam, 5 to 15 percent slopes, and Sites loam, 2 to 9 percent slopes. However, only a portion of the southern annexation area contains Musick sandy loam soil (approximately 14 acres). Pertaining to the Musick sandy loam soils in the annexation area, it is important to note that this area previously contained the Bear River Mill site and past mining activity. Therefore, this area has had substantial disturbance from heavy industrial-type activities. Currently, this site contains stock pile areas for Rare Earth, several concrete and asphalt pads, foundations, and two ponds used for the mill operation. As noted in Section 3.7, Hazards and Hazardous Materials, of this EIR, some of this area also has contaminated soils, primarily areas within the former Bear River Mills site, located along La Barr Meadows Road and SR 49 in the central portion of the project area. Other properties with contaminated soils include the La Barr Meadows property at 11759 La Barr Meadows Road, and the Industrial Asphalt site at 11825 La Barr Meadows Road. See **Table 3.7-1** in Section 3.7 for a complete listing of contaminated or potentially contaminated properties in the project area. Due to the past industrial operations and land disturbance in this area, the integrity of the agricultural soils is questionable. It is important to note that none of this land is used for agricultural purposes, and under the provisions of CEQA, the soil does not constitute a significant impact on agricultural resources. Furthermore, both the Nevada County and City General Plans designate the entire annexation area for urban purposes (Business Park, Industrial, and Commercial uses).

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

Pertaining to LAFCo findings related to the proposed annexation, approximately 65 of the 120 acres are developed; the entire area is within the near-term SOI annexation time horizon as updated in 2011; upon discussion with landowners the vacant land is likely to be developed for industrial purposes in a reasonable period of time; as noted in the project objectives, Grass Valley and Nevada County have very limited supplies of industrial-zoned land that has access to sewer service and once this land is annexed there is an improved opportunity for the City to seek infrastructure grants to assist in the extension of sewer; and finally, neither the annexation area nor the surrounding parcels contain any agricultural operations.

OPEN SPACE LAND

LAFCo law (Government Code Section 56059) defines open space as “any parcel or area of land or water which is substantially unimproved and devoted to an open-space use, as defined in Section 65560.” Currently, both the Nevada County and City General Plans designate the entire project area, including the annexation area, for urban purposes. The proposed project includes the designation of 116 acres for open space. This allows the City to cluster development in certain areas and preserve in open space the steeper terrain, ravines, and corridor along Wolf Creek. Under the proposed project, none of the land with an Open Space designation will be developed. None of the proposed open space lands are within the annexation areas; therefore, once these lands are annexed into the City, these open spaces will be maintained by either the City, property owners, or another non-City entity. As required by the Subdivision Map Act, the City will need to assign maintenance/ownership of the open space areas to an entity prior to subdivision of any land. Pertaining to the annexation area, no development plans are known at this time, but the entire area is proposed for urban uses. Because there are some site constraints on some of the parcels, it is likely that smaller areas of open space will be incorporated into site-specific developments. Since the annexation area is not planned for or devoted to open space purposes, this project will not convert open space.

3.10.7 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

The cumulative context for this section is based on the City of Grass Valley General Plan and Sphere of Influence (SOI). As noted in the project description, the entire project area is currently designated by Nevada County and the City for urban development with some areas of rural residential. As noted in the project objectives, the project continues to propose urban development, but does so by establishing a more sustainable land use plan that creates an urban land use pattern, clusters development away from the more sensitive areas (Wolf Creek, steeper slopes), and provides land use designations currently lacking in the community (Industrial and Commercial) to meet current and future job growth needs and economic development.

CUMULATIVE SETTING

Agricultural and forestry resources are of statewide importance; as such, the cumulative setting consists of all agricultural and forestry resources in California. Throughout the state, development pressures are resulting in the conversion of thousands of acres of agricultural land. According to the latest statewide study by the FMMP (DOC 2013), approximately 143,986 acres of agricultural land were converted to nonagricultural use between 2006 and 2008. In Nevada County during this same period, approximately 703 acres of agricultural land was converted to nonagricultural uses.

Based on statewide data from 2003 through 2007, the California Department of Forestry and Fire Protection (Cal Fire) annually received an average of 13 Timber Conversion Permit (TCP) applications totaling 416 acres. In addition, during this same time period, Cal Fire received an

average of 13 Notices of Exemption from TCP requirements totaling 1,157 acres of timberland conversion. Finally, Cal Fire received an average of 666 notices of conversion of timberland parcels of less than 3 acres totaling 1,230 acres. This indicates that, on average, approximately 2,800 acres of timberland were converted each year between 2003 and 2007 (Cal Fire 2013).

Cumulative Land Use Compatibility Impacts (Land Use Standards of Significance 1, 2, and 3)

Impact 3.10.9 The proposed project would not result in any significant increase in land use incompatibility. This impact is considered to be **less than cumulatively considerable**.

Generally, land use conflicts are site specific and do not result in cumulative impacts. Site-specific incompatibility issues are addressed and mitigated on a project-by-project basis through implementation of the City's policies, zoning and subdivision standards (Development Code), Community Design Guidelines, and other policy documents, and through the environmental review process. As discussed in this EIR, the current zoning and land use designations have the potential to create land use incompatibility by having rural residential uses next to existing industrial uses. The proposed project actually eliminates the current incompatibility by placing and clustering residential uses to the far north and south ends of the project area. Additionally, the proposed project provides open space areas to further buffer any incompatible land uses.

For this project, future development will be allowed in areas already planned for urban development. The City's policies, zoning and subdivision standards (Development Code), Community Design Guidelines, other policy documents, and site-specific site plan, subdivision, and environmental review processes will ensure future development will be consistent with the General Plan. All future development contributing to cumulative conditions would be subject to the applicable City regulations and standards pertaining to land use, as well as CEQA analysis of project-specific impacts. Therefore, cumulative land use impacts would be considered **less than cumulatively significant**.

Mitigation Measures

None required.

Cumulative Impacts to Agricultural and Forest Resources and Open Space (Agricultural Resources Standards of Significance 1, 2, and 3 and Forest Resources Standards of Significance 1 and 2)

Impact 3.10.10 The proposed project would not result in the cumulative loss of agricultural or forest resources nor does it reduce the loss of lands designated or zoned for agricultural, forest, or open space purposes. This impact is considered to be **less than cumulatively considerable**.

Neither the City nor Nevada County designates any of the project area for planned open space. The proposed project, however, designates 116 acres, which represents over one-quarter of the project area, as open space. Therefore, this project adds to the local and regional open space designated lands, and the project will have **no impact** on lands currently zoned for open space.

In 2010, the most recent year for which data is available, Nevada County contained a total of 25,934 acres of Important Farmland, including 398 acres of Prime Farmland, 1,586 acres of

3.10 LAND USE, AGRICULTURAL AND FOREST RESOURCES

Farmland of Statewide Importance, 480 acres of Unique Farmland, and 23,470 acres of Farmland of Local Importance. Nevada County also contained 116,868 acres of Grazing Land (DOC 2010b). Other than a small area of land recently annexed into the City as part of the Loma Rica Ranch Specific Plan, the City does not have any Important, Prime, or Unique Farmland, or Farmland of Statewide or Local Importance. Although California is experiencing an ongoing loss of important farmland to urbanized uses, the project area does not have any soils that meet the state's designation for important farmland. Therefore, there will be **no impact** to the cumulative loss of farmland.

Although the state is also experiencing an ongoing loss of timberland to urbanized uses, the project is not designated as timberland, and the project will preserve a large portion of the forestland in open space (see Impact 3.10.8). Furthermore, the entire project area is designated by Nevada County and the City for future development, and the surrounding area is characterized by urban development and rural residential uses. There are no commercialized or intensive timber production uses in the vicinity of the project area that would be affected by the proposed project. Although the project would result in changes to the General Plan land use designations and the sites being rezoned, the area is not intended for, or currently zoned for, intensive or commercial agricultural or forestry uses. Therefore, the proposed project will not contribute to the cumulative conversion of forestland or timberland. This impact would be **less than cumulatively considerable**.

Mitigation Measures

None required.

REFERENCES

- DOC (California Department of Conservation, Division of Land Resource Protection). 2010. Farmland Mapping and Monitoring Program Map. <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/nev10.pdf>. Accessed September 5, 2013.
- . 2006-2008. 2006-2008 Regional and Statewide Conversion Summary http://redirect.conservation.ca.gov/DLRP/fmmp/regional_statewide_info_results.asp. Accessed September 23, 2013.
- California Department of Forestry and Fire Protection (CalFire). 2002. Timberland Site Class on Private Lands, Zoned for Timber Production Technical Working Paper 1-03-02.
- . 2008. Timberland Conversion Issue Paper. http://www.bof.fire.ca.gov/board_business/binder_materials/2012/september/sept_2012_fpc/fpc_3.1_timberland_conversion-issue_paper_8-29-08_final.pdf. Accessed September 20, 2013.
- City of Grass Valley. 1999. *City of Grass Valley 2020 General Plan*.
- . 2007. *City of Grass Valley Development Code*. Adopted March 6, 2007.
- . 2004. Memorandum of Understanding between Grass Valley and Nevada County. Signed July 13 and 15, 2004.
- Nevada County. 2008. *Nevada County General Plan*. Adopted 1996, amended 2008 (Safety) and 2010 (Circulation/Housing).
- Nevada County Local Agency Formation Commission (LAFCo). *Local Agency Formation Commission of Nevada County Policies*. Policies (adopted 1994, amended 2008).
- . 2011. *City of Grass Valley Sphere of Influence Plan*. Adopted April 2011.
- University of California, Division of Agricultural Science. 1978. *Special Publication 3203: Storie Index Soil Rating*.
- USDA-NRCS (US Department of Agriculture, Natural Resources Conservation Service). 2012. *National Soil Survey Handbook, Title 430-VI*. Last modified August 24, 2012. <http://soils.usda.gov/technical/handbook/>. Accessed September 23, 2013.
- . 2013. Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey>. Accessed multiple occasions September, 2013.

3.11 PUBLIC SERVICES

This section evaluates the potential impacts of the proposed project on public services, including fire protection and emergency medical services, police protection, schools, and parks and recreation. The information in this section is based on a review of City documents, as well as consultation with staff from the various agencies that would potentially be affected by future development that may result from implementation of the proposed project.

3.11.1 FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES

EXISTING SETTING

The project and the proposed annexation area are currently within the Nevada County Consolidated Fire District (NCCFD). However, once the land is annexed to the City of Grass Valley, it would be detached from the NCCFD and served by the Grass Valley Fire Department.

Grass Valley Fire Department

The Grass Valley Fire Department (GVFD), based in Grass Valley (125 E. Main Street), provides fire suppression services to land within the City limits (approximately 5.4 square miles). The GVFD has a variety of fire suppression units, including three Type 1 engines, an air support unit, an OES fire engine, and a 105-foot aerial truck. The City maintains the following firefighting facilities: Station #1, Brighton Street Fire House, located at 472 Brighton Street, and Station #2, Eagle Fire House, located on Sierra College Drive.

The department has 14 career personnel. The department responds to almost 2,900 incidents per year, with 75 percent of the calls for service being emergency medical responses. The current average fire response time in the City is 4 minutes,¹ and the City has an ISO rating of 3.

Station #1 is jointly staffed by the GVFD and the Nevada County Consolidated Fire District. In 1996, the NCCFD and GVFD began a joint staffing operation, moving NCCFD personnel from NCCFD Station #91 to GVFD Station #1.

The GVFD has a Joint Operators Agreement with the NCCFD and the Ophir Hill Fire District (OHFPD). The NCCFD serves the area generally north, west, and south of the City, and the OHFPD serves lands east of the City. In 1998, an Automatic Aid Agreement was reached among these agencies, which provides for a response by a minimum of two pieces of equipment anywhere within the City within 4 minutes, 24 hours per day.

The background narrative of the City's General Plan Safety Element describes the intent to consolidate Grass Valley's four fire facilities. This would retain Station #1 at its existing location, use Station #2 near the Sierra College campus, and develop a third station in the southern portion of the City's Planning Area near North Star Drive. The General Plan also notes the possibility of a future station being located in the Loma Rica Industrial Park if and when that area is annexed to the City.

Nevada County Consolidated Fire District

The NCCFD is a full-service emergency response agency that covers an area of approximately 143 square miles with a population of over 35,000. The district is divided into five service areas (49ers, Gold Flat, Alta-Oaks Sunset, Bullion, and Watt Park) served by 14 stations. The project area

¹ Response time is defined as average response from notification to service provision at incident location (City of Grass Valley 1999, p. 7-4).

3.11 PUBLIC SERVICES

is currently within jurisdiction of the NCCFD. In 2011, the NCCFD responded to 5,720 incidents, with 3,857 medical aids. The next highest number of incidents was for public assistance calls (536).

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (Cal Fire) provides fire protection for wildland areas around Grass Valley and is responsible for wildland fires and for deterring the spread of fires into developed areas. Structures in areas outside the service areas of urban fire protection agencies have no year-round fire protection.

REGULATORY FRAMEWORK

State

2010 California Building Code

The 2010 California Building Code, California Code of Regulations Title 24 Chapter 7A, established new standards for construction and exterior building materials for projects located in areas rated as high or very high by the Fire and Resource Protection Program (FRAP). Since the entire project area is rated as very high according to the Fire Hazard Severity Zone map, future development in this area will need to incorporate the required fire-safe and fire-resistant building materials pursuant to Chapter 7A. The building and fire codes also address residential and nonresidential fire sprinklers, fire department access, fire hydrants, fire alarm systems, and other fire protection measures. The City has adopted and implements the 2010 building and fire codes.

Local

City of Grass Valley General Plan

The City of Grass Valley General Plan Safety Element addresses issues related to the maintenance and development of City services. This element includes various policies that are intended to ensure future development does not adversely affect public service providers. The following policies of the General Plan would have a mitigating effect with respect to impacts on fire services:

Policy 6-SP: Incorporate fire hazard reduction considerations into land use plans/patterns, both public and private.

Policy 8-SP: Assure public awareness of fire-safety measures, including those addressing property maintenance and evacuation.

Policy 9-SP: Develop and implement fire-safe community design and landscaping standards, construction codes, and property maintenance regulations.

Implementation Program 4-SI: Require future developments to provide multiple ingress/egress points, to facilitate emergency vehicle access and mobility, and to facilitate emergency evacuation movements.

Policy 24-CP: Coordinate circulation and development plans with public safety agencies, fire departments/districts and emergency service providers.

A discussion of the project's consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the City of Grass Valley considers impacts concerning fire protection and emergency medical services to be significant if the project will:

- 1) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or 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.

Methodology

The analysis of fire protection impacts is based on City of Grass Valley General Plan Safety Element objectives, goals and policies; field and site observations; consultations with both, or data from, GVFD and NCCFD staff; and review of relevant documents.

Project Impacts and Mitigation Measures

Fire Protection (Standard of Significance 1)

Impact 3.11.1 Future development within the project area would not result in substantial impacts associated with the need to provide new fire protection facilities and equipment, and the provision of firefighting personnel, in order to maintain acceptable service ratios, response times, and other performance objectives. This impact is considered **less than significant**.

The GVFD has an Automatic Aid Agreement with the NCCFD and the OHFPD. The project area is in the vicinity of NCCFD Station #88. Currently, Station #88, located at 14518 Highway 49, has full-time staffing with three shifts including a captain, engineer, and firefighter. NCCFD Station #89, located at 11833 Tammy Way, also has full-time staffing with three shifts, which include a captain, engineer, and firefighter. Once the project area is annexed, the GVFD would take over jurisdiction for fire protection services within the annexation area, and Grass Valley Fire Station #1 will be the primary station serving the area. Most of the project area is within the 4-minute response time of both Station #1 and Station #88, while some portions are just outside this response time. However, once the area develops and new roads are connected (e.g., Piccadilly Lane, Taylorville Road, Crestview) and roads are improved to urban standards, all the

3.11 PUBLIC SERVICES

developed lands are expected to be within the 4-minute response time. The City's Fire Chief has indicated that additional firefighters and equipment would be needed to serve the project area; however, the existing fire station facilities can meet the demands of the proposed project (Clarabut 2013).

All future development within the project area will be required to pay City development impact fees, which include fees for fire facilities.² In addition, a combination of sales tax and property taxes resulting from the existing and future development within the project area would help provide the necessary revenue to the City to allocate within the City budget for the operation of any future expanded fire protection services, including future new facilities, if needed. Although future development within the project area would likely require additional fire protection personnel and equipment, the existing fire stations have available capacity to accommodate new staff and equipment that would be generated by future development within the project area. Therefore, this is a **less than significant** impact.

Mitigation Measures

None required.

Wildland Fire Hazards

Impact 3.11.2 Future development in the project area would locate structures near vegetation and wooded areas, thereby exposing structures and people to wildland fire hazards. This impact is considered **less than significant**.

The Grass Valley region has a generally high potential for wildland fires of devastating intensity. This is due to the presence, particularly in less urban settings, of heavier timber, woodland, and brush, the occurrence of steep slopes, dry weather conditions, and increased human activity. Generally, vegetative areas of over 8 percent slope are considered as "fire hazardous" (Grass Valley 1999, p. 7-4). According to the map of Fire Hazard Severity Zones in State Responsibility Areas (SRA), the project area is designated as "Very High Fire Hazard Severity Zone (Cal Fire 2007).

Future development in the project area would include roadways, parking lots and buildings, and formal landscaping. The City's fire standards require buffers and fuel reduction adjacent to the wildland/urban interface. New buildings must meet current building and fire code requirements based on the very high fire hazard rating and incorporate required fire-safe and fire-resistant building materials pursuant to Chapter 7A of the California Building Code. The building and fire codes also address residential and nonresidential fire sprinklers, fire department access, fire hydrants, fire alarm systems, and other fire protection measures. The City has adopted and implements the 2010 building and fire codes. Vegetation management plans are required for all projects located adjacent to open space and wildland areas. The vegetation management plan includes the annual removal of grasses, brush, blackberries, and ladder fuels, and a long-term maintenance plan. As development occurs in the project area, new fire hydrants will be located to serve the developed areas pursuant to City ordinances. Fire hydrants in the area will be beneficial in the event of a wildfire on adjacent land. Infrastructure will be designed to provide fire flow as required by the City's General Plan. The related widening of La Barr

² Development Impact Fees: For residential uses, the fire fees are based on the type of housing unit. For nonresidential uses, the fire fees are based on a fee per 1,000 square feet and the type and size of building. (City of Grass Valley New Development Impact Fees, Resolution #2013-372013)

Meadows Road and development of the road to City standards will reduce the potential for wildfire by keeping vehicles farther from vegetation. Widening the gravel shoulder, removing vegetation, and limbing trees along La Barr Meadows Road would reduce the potential for accidental wildfire associated with an increase in traffic by improving firebreak characteristics. With the addition of improved water infrastructure designed to provide fire flow and the firebreak features along La Barr Meadows Road, this impact is reduced to **less than significant**.

Mitigation Measures

None required.

3.11.2 LAW ENFORCEMENT

EXISTING SETTING

City of Grass Valley Police Department

The City of Grass Valley Police Department (GVPD) provides law enforcement services within the City limits. The GVPD provides all aspects of law enforcement, including patrol, investigations, traffic enforcement, and traffic collision investigations. The department has one central office, located at 129 South Auburn Street, approximately 4 miles from the project area. City funding sources for Police Department facilities and services include development impact fees, the general fund, user fees, and the Measure N half-cent sales tax. The projected capital improvements for police services included four substations over the next 20 years (Grass Valley Master Services Element, p. 2-15). In 2012, there were 20 sworn officers (which includes one chief, one captain, and five sergeants), 7 full-time staff support, and an average of 14 volunteers. The department responded to 28,180 calls for service in 2012. Although the department has no adopted standard, the officer-to-resident ratio has ranged from 1.55 to 2.23 over the past 10 years.

Nevada County Sheriff's Department

Because the project area is currently in an unincorporated area of Nevada County, law enforcement services for the project area are provided by the Nevada County Sheriff's Department. The department is also responsible for narcotics, animal control, public administrator, civil process service, jail, and coroner services. As of 2012, the department had 67 sworn officers. The Sheriff's Department operates a station at 950 Maidu Avenue in Nevada City. For emergencies, additional personnel are available through the resources of the Sheriff's Department and with assistance as needed from the GVPD and the California Highway Patrol.

REGULATORY FRAMEWORK

Local

City of Grass Valley General Plan

The City of Grass Valley General Plan does not have any policies or standards that specifically address police protection within the City limits.

3.11 PUBLIC SERVICES

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the City of Grass Valley has determined that law enforcement impacts are considered significant if implementation of the project would:

- 1) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or 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.

Methodology

The analysis of law enforcement impacts is based on consultation with GVPD staff, consultation with Nevada County Sheriff Department staff, and review of applicable documents. In addition to the development of new commercial and industrial establishments within the project area, the development of up to 534 potential residential units based on a maximum density allowed per the General Plan could potentially result in a population increase of up to 1,074 at buildout (assuming the average of 2.01 persons per dwelling unit based on 2012 Department of Finance data). For the purposes of this analysis, it is assumed that all residential units on the project site would be occupied.

Project Impacts and Mitigation Measures

Law Enforcement (Standard of Significance 1)

Impact 3.11.3 As future development occurs within the project area, additional police staffing and equipment will be required to provide adequate citywide police service. This impact is considered **less than significant**.

Future development within the project area could result in the development of up to 534 housing units, as well as commercial, industrial, and business park buildings that could add up to as much as approximately 1,460,894 square feet. The related population growth associated with the residential portion would be approximately 1,074 people. As the City grows, it is reasonable to assume that there will be a growth in the police department in terms of both equipment and personnel. Tax and development fee revenue from the proposed project will help the City keep pace with the need to increase services over time. Initially, the existing police facilities and personnel will be adequate to provide service. As commercial, industrial, and business park uses increase, there will be a need to evaluate calls from the area and make adjustments accordingly.

The City has a development impact fee for police services that will pay for facility upgrades as growth occurs. Additionally, in 2012, Grass Valley voters approved Measure N. This measure increased the local sales tax by half a cent for a 10-year period to be used for public safety and roads. A large portion of the Measure N taxes will be used for additional police officers and for future vehicle replacement.

The proposed project is not expected to have a significant impact on the response times of the Grass Valley Police Department due to the proximity of the site in relation to the police station.

While the project may result in short-term increased traffic congestion (e.g., along La Barr Meadows Road), all road segments and intersections would be improved to ensure that adequate levels of service and corresponding emergency response times are maintained. (For a full discussion of traffic-related impacts and proposed mitigation measures, see Section 3.12, Transportation and Circulation, of this DEIR). According to the City Police Chief, while additional officers and equipment will be needed to serve this area once it is annexed, no new facilities will need to be constructed (Foster 2013). Therefore, the project will not lead to a direct or indirect physical impact on the environment. Should a substation be needed in the area to be annexed, it will be housed in an existing commercial or office complex. The number of officers that provide services to a community is a policy issue, not an environmental issue. Overall, the changes to land use and zoning designations and the annexation impacts relating to law enforcement services are considered **less than significant**.

Mitigation Measures

None required.

3.11.3 PUBLIC SCHOOLS

EXISTING SETTING

School Districts

The project area is located in the Nevada Joint Union High School District (NJUHSD) and the Grass Valley School District (GVSD). The NJUHSD operates two traditional comprehensive high schools, Bear River High School and Nevada Union High School. The district also provides educational services at nontraditional schools, including Ghidotti Early College High School; two continuation schools, Nevada Union Tech High School and Pioneer High School; two alternative schools, Silver Springs High School and Sierra Foothills High School; an independent study school, and an adult school (NJUHSD 2013a). For the 2012–2013 school year, the NJUHSD had a total enrollment of 3,330 students, the vast majority at Nevada Union High School, with an enrollment of 2,048 students (NJUHSD 2013b).

The GVSD serves 1,680 preschool to 8th grade students with a total of six schools, including two preschools, two K–4 schools (Bell Hill Academy and Margaret G. Scotten School), one 5th to 8th grade school (Lyman Gilmore Middle School), and one pre-K to 8th grade charter school (Grass Valley Charter School) (NJUHSD 2013b; GVSD 2013).

Other school districts in Nevada County that serve areas outside of the project area include Chicago Park Elementary School District, Clear Creek Elementary School District, Nevada City Elementary School District, Pleasant Ridge Union School District, Pleasant Valley Elementary School District, Ready Springs Elementary School District, Twin Ridges Elementary School District, and Union Hill Elementary School District.

Since the 2007/08 fiscal year, there has been a reduction in both the number of schools and student enrollment in Nevada County. This includes a reduction in the number of schools from 52 (includes 13 charter schools) to 42 (includes 13 charter schools) and an enrollment of 12,575 students (NJUHSD 2013b).

3.11 PUBLIC SERVICES

REGULATORY FRAMEWORK

State of California

Leroy F. Greene School Facilities Act of 1998 (SB 50)

The Leroy F. Greene School Facilities Act of 1998, also known as Senate Bill 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 California.

Prior to the Leroy F. Greene School Facilities Act of 1998 (Government Code Sections 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 Section 65995, as amended by Senate Bill 50, establishes the dollar amount school districts may impose on new development. As of July 2013, each of the school districts potentially impacted by a project may levy fees against developers at the rates of \$2.97 per square foot for residential development and \$0.47 per square foot for commercial/industrial land uses. Fee amounts may vary by year and are adjusted for inflation, so fees may be different when future development occurs within the project area. In order to establish developer fees, each of the districts is required to develop a justification report that demonstrates the nexus between the fee that is imposed and the need for public facilities created by the new development.

Under specified circumstances, school districts may impose alternative fees pursuant to Government Code Sections 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).

Government Code Section 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 Section 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 Section 65995(g)(1) further states that a developer's refusal to participate in a CFD cannot be a factor in considering a "legislative or adjudicative" act. However, Government Code Section 65995(g)(2) further states that a person can voluntarily elect to pay a fee through a CFD.

Local

City of Grass Valley General Plan

The City of Grass Valley General Plan does not contain any specific policies regarding public schools or educational facilities. As such, no evaluation of the project relative to General Plan policies regarding public schools or educational facilities is possible.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the City of Grass Valley has determined impacts on schools are considered significant if implementation of the project would:

- 1) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives.

Methodology

The analysis of public school impacts is based on consideration of the estimated number of students generated by the project and consultations with the Grass Valley School District and the Nevada Joint Union High School District.

Project Impacts and Mitigation Measures

Schools (Standard of Significance 1)

Impact 3.11.4 Future residential development that could occur within the project area would increase student enrollment at schools within the Grass Valley School District and the Nevada Joint Union High School District. The project would not require new school facilities and related services. This impact is considered **less than significant**.

Future development within the project area could accommodate as many as 534 new residential units, which could increase the number of students requiring school services from the NJUHSD and the GVSD. The proposed project could also accommodate the future development of up to 1,460,894 square feet of commercial, industrial, and business park uses, but these land uses do not generate students, although developers of nonresidential land uses are subject to school impact fees.

An estimated number of students that the proposed project would generate can be derived by multiplying an acceptable average number of students per dwelling unit by the number of dwelling units that could potentially be constructed within the project area, which is up to 534 residential units. Based on figures from the California State Allocation Board Office of Public School Construction, to calculate project impacts on schools, the statewide average number of students per dwelling unit may be expressed as 0.43 elementary school students, 0.14 middle school students, and 0.13 high school students. Applying these statewide average student yield factors, the future development within the project area could generate up to approximately 374 students, including 239 elementary school students, 75 middle school students, and 70 high school students.

Developers of future development projects within the project area would be required to pay the developer fees to the impacted school districts, at the fee amounts for the year in which development occurs. As provided in Government Code Section 65996, the payment of such fees is deemed to fully mitigate the impacts of new development on schools. Therefore, the impact is considered **less than significant**.

3.11 PUBLIC SERVICES

Mitigation Measures

None required.

3.11.4 PARKS AND RECREATION

EXISTING SETTING

The Recreation Element of the City of Grass Valley General Plan describes the City's park and recreation resources and discusses some of the related issues. The Recreation Element notes, for example, that the City of Grass Valley owns and maintains eight park and recreation facilities totaling approximately 109 acres. These parks include:

- Memorial Park (a community park, 8.4 acres in size) provides sports facilities including tennis and basketball courts, multiple sports fields, skate parks, picnic and barbecue areas, swimming pool, museum, and children's play areas.
- Condon Park (a community park, 80 acres) provides sports facilities including basketball, baseball, bocce court, disc golf course, children's play areas, natural areas, paths, community center, and swimming pool.
- Pelton Wheel Museum/Glen Jones Park (a pocket park, 1.7 acres) provides children's play area, picnic area, open space, and paths.
- Brighton Street Park (Minnie Street, a neighborhood park, 2.0 acres) provides a children's playground, barbecue areas, and picnic areas.
- Elizabeth Daniels Park (an urban plaza/park, 0.3 acres) provides children's play area, multipurpose performance space, civic structures and kiosks, public art, fountains, and small cafes, retail, or dining areas.
- Dow Alexander Park (a pocket park, 0.5 acres) provides children's play area, picnic area, open space, and paths.
- Morgan Ranch Park (4.1 acres) provides sports facilities including paved courts, sports fields, skate park, natural areas, community gardens, public art, and fountains.
- Matino Park (a community park, 12.5 acres in size) provides sports facilities including tennis and basketball courts, multiple sports fields, skate parks, and children's play areas.

With approximately 109 acres of City-owned parkland, based on Grass Valley's 2012 estimated population of 12,808 (US Census Bureau 2013), there are approximately 8.5 acres of parkland per 1,000 residents.

Additional park/recreation facilities in Grass Valley, but owned and maintained by entities other than the City, include:

- Nevada County Country Club, 59 acres (privately owned and operated) 9-hole public golf course
- Sierra College Park, 7.95 acres (Sierra College campus), a soccer and baseball facility

- Hennessy School, 3 acres (school district–owned and operated)

Private facilities are not necessarily accessible by the general public, so they do not count toward meeting the City's parkland requirement, but they do contribute to the community's need for parks and recreation. Similarly, designated open space areas may provide passive recreational opportunities to residents, but they do not count toward the City's parkland dedication requirement.

Schools are also recognized for the recreational opportunities provided by their grounds. Local schools within the General Plan Planning Area provide approximately 24 acres of recreational space including athletic fields, tennis courts, swimming pools, and gymnasiums. Of course, classrooms and associated facilities take up considerable space, thus reducing the amount of acreage that is available for recreational use. School grounds also have a variety of restrictions as to who can use the facilities and when they may be available for non-school use. Nevada Union High School, outside the City limits but within the General Plan Planning Area, includes a 63-acre campus with recreational and sports facilities.

Grass Valley is also the home of the Nevada County Fairgrounds. The fairgrounds are situated on 100 acres and offer a variety of recreation amenities. The facility is classified in the Recreation Element as a regional park. The fairgrounds house several community facilities, including the Senior Citizens Building.

The Empire Mine State Park is also part of the regional park system and consists of 845 acres of open space and historic features. The park includes the old mine, historic and interpretive buildings and exhibits, picnic areas, and over 1 square mile of forested open space with trails and natural areas. The park maintains over 12 miles of trails, which are open to the public for hiking, biking, and horseback riding.

Historically, land for park and recreation facilities has been purchased by, or donated to, the City. The Grass Valley Subdivision Ordinance provides for land dedication for parks and for in-lieu fees through which residential developments can be required to facilitate parkland acquisition. As quoted in the Recreation Element, the standard for park and recreation dedications or in-lieu fees, as established under the provisions of the Quimby Act, is a minimum of 5 acres of developed parkland per 1,000 residents.

REGULATORY FRAMEWORK

State

Quimby Act

Local governments in California provide an important role in the establishment of parkland and open space for recreational purposes. The 1975 Quimby Act (California Government Code Section 66477) authorized cities and counties to pass ordinances requiring developers to set aside land and/or pay in-lieu fees for park improvements. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of existing park facilities, although they may be used for park rehabilitation.

The intent of the Quimby Act is to assist local municipalities in providing adequate open space for their citizenry by requiring developers to mitigate the impacts of residential development. The provisions give authority for passage of land dedication ordinances only to cities and counties.

3.11 PUBLIC SERVICES

However, if an agency other than a city or county is responsible for providing park and recreation services, the park agency ultimately is the recipient of the land dedication and/or in-lieu fees.

In 1982, the Quimby Act was substantially amended to further define acceptable uses of, or restrictions on, Quimby funds; provide ratio standards for recreation acreage and population; and provide formulas for determining exactions. Local Quimby Act ordinances must include definite standards for determining the proportion of land to be dedicated and the amount of the fee to be paid. Further, local Quimby Act ordinances must be in effect for a period of 30 days prior to the filing of the tentative subdivision map or parcel map in order to require a dedication of parkland and/or in-lieu fees.

Local

City of Grass Valley General Plan

The City of Grass Valley General Plan Open Space and Conservation Element and Recreation Element address parks and recreational resources in the City's Planning Area. These elements include various policies which are intended to ensure that future development does not adversely affect park and recreation resources. The following policies of the General Plan would have a mitigating effect with respect to impacts to park and recreation resources.

Policy 1-RP: Provide parks and open spaces of different sizes and types to respond to the needs of a diverse population, including trails for pedestrian and equestrian use, bicycle pathways, linear parkways and park-like natural areas.

Policy 6-RP: Provide non-motorized linkages between parks and open spaces.

A discussion of the project's consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

City of Grass Valley Parks and Recreation Master Plan

The Grass Valley Park and Recreation Master Plan describes how the City will strive to provide park and recreation opportunities for residents over the next 20 years. The purpose of the plan is to establish policy, set standards, identify and prioritize capital investments, and address operational and fiscal issues regarding park and recreation facilities and programs in the City. As it pertains to this project, the plan shows trails along La Barr Meadows Road and Wolf Creek, and a neighborhood or pocket park on the former Bear River Mill site.

City of Grass Valley Subdivision Ordinance

The City of Grass Valley Subdivision Ordinance provides for land dedication for parks and recreation or the option to pay in-lieu fees through which residential developments might facilitate parkland acquisition. The standards for park and recreation dedication or in-lieu fees

are the same as established under provisions of the Quimby Act, i.e., a maximum of 5 acres per 1,000 residents. There are no requirements for nonresidential subdivisions.

City of Grass Valley Municipal Code

Chapter 17.72 of the City of Grass Valley Municipal Code sets development standards for a planned development permit application. The standard for future parks, recreation facility needs, and maintenance costs is as follows: "The applicant shall identify all proposed park, recreation or open space amenities proposed for the project and describe how the features meet the park and recreation goals of the General Plan. For all park and recreation, or open space amenities shown on the plan, the applicant shall provide a financing mechanism to cover projected maintenance costs."

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the City of Grass Valley has determined that a public services impact concerning parks and recreation is considered significant if implementation of the project would:

- 1) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives.
- 2) 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.
- 3) Include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

Methodology

The project was evaluated for its potential impacts on parks and recreational services based on a review of the City of Grass Valley General Plan, the Grass Valley Parks and Recreation Master Plan, Section 17.86.030 of the City of Grass Valley Municipal Code, and consultations with relevant City staff.

Project Impacts and Mitigation Measures

Existing Parks and Recreation Facilities (Standards of Significance 1, 2, and 3)

Impact 3.11.5 Future development within the project area would not result in substantially increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. This impact is considered **less than significant**.

3.11 PUBLIC SERVICES

Although future development within the project area could generate additional population, it is expected that future residents could utilize existing parks and recreation facilities in Grass Valley. In addition, upon annexation of the project area to the City, new residents currently living in the project area in unincorporated Nevada County would also add to the City's population. Currently, the City has enough dedicated parkland to exceed its parkland dedication requirement, with approximately 8.5 acres per 1,000 residents.

The addition of new residents upon annexation and those generated by the future development of up to 534 new residential units would not be great enough to result in substantially increased use of existing facilities, such that facilities would deteriorate at an accelerated rate. In addition, all new future developments would be required to either dedicate 5 acres of parkland per 1,000 residents or pay in-lieu fees. The proposed project would provide 117 acres of open space, which could also help to provide passive recreation opportunities to existing and future residents within the project area, but this acreage does not count toward the requirement for 5 acres per 1,000 residents parkland dedication. This would minimize the potential for physical deterioration of existing parks and other recreational facilities to a level that is **less than significant**.

Mitigation Measures

None required.

Proposed Park and Recreation Facilities (Standards of Significance 1 and 3)

Impact 3.11.6 Future development within the project area would result in the construction of additional park and recreational facilities, which might have an adverse physical effect on the environment. This impact is considered **less than significant**.

Future parks and recreation facilities are anticipated to be developed within the project area concurrent with future development projects. However, since no development has actually been proposed at this time, the exact locations of future parks and recreation facilities within the project site are not known; therefore, more site-specific analysis cannot be done at this time. If, in future development proposals, it is determined that the exact location of a future park or recreation facility could potentially result in additional or more severe impacts than those that were disclosed in this programmatic analysis, future project-level environmental analysis may be needed. However, if the exact location of future facilities would not trigger additional or more severe impacts on a resource, the analysis found in this EIR may be sufficient.

Because this EIR analyzes the potential for environmental impacts associated with future development throughout the project area, the potential impacts of developing parks and other recreation areas anywhere within the project site are addressed and disclosed in this EIR on a programmatic level. For example, potential impacts to subsurface cultural and paleontological resources as the result of development of any future use, including parks, are addressed in Section 3.5, potential impacts to biological resources are addressed in Section 3.3, and potential impacts to air and water quality are addressed in Section 3.2 and Section 3.8, respectively. Where appropriate, mitigation measures have been provided to reduce potential impacts to a **less than significant** level.

Mitigation Measures

None required.

3.11.5 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

In the cumulative context and for the purpose of this evaluation, the geographical setting for public services is the Grass Valley City limits and its Sphere of Influence (SOI). To further set the cumulative context, the Grass Valley and Nevada County General Plans both designate the entire project area for urban and suburban-type development. Furthermore, the entire project area is located within the Grass Valley Sphere of Influence. As shown in the City's General Plan, the City has proposed areas for urban development throughout its SOI and is the expected public service provider for all future development that is annexed. As new development occurs within the City limits, it would result in the construction of new buildings and other related urban improvements. As land is annexed into the City, it will result in the City absorbing existing development and approving new development. This new development and absorption of existing development will result in a need for the City to provide new public services.

IMPACTS AND MITIGATION MEASURES

Cumulative Public Service Impacts (All Standards of Significance)

Impact 3.11.7 The proposed project would result in the cumulative demand for new fire, police, school, and recreational services. This impact is considered **less than cumulatively considerable**.

As it pertains to this project and development of any lands annexed into the City, future development will be allowed in areas already planned for urban development. Future development within the City will be guided by the City General Plan, Development Code, and other associated planning and policy documents. Each project will be subject to the City's planning and environmental review processes. As part of the planning process, the payment of appropriate fees by all development projects would be required to mitigate any impacts on public services and minimize cumulative impacts on a project-by-project basis. The City Fire and Police departments will be involved in the development review process for all projects in the City and would continue to provide input into the review of new projects to ensure they comply with all City standards. Additionally, new and existing development will bring additional annual revenues into the City in the form of property and sales taxes, which would help offset the increased demand for fire and police service. All new residential development will be required to pay local recreation and school impact fees, which are intended to mitigate the project-specific and cumulative effects of new residential development on those services.

The 2011 SOI Plan completed by the Nevada County Local Agency Formation Commission (LAFCo) confirms that the City can provide and meet the public service needs of the anticipated growth in the City. The City's 2020 General Plan EIR notes the City's police station can accommodate a population of up to 30,000 people, which is well beyond the projected 26,000 population of the City's Planning Area. The City is expected to continue to rely on mutual aid for fire response and has adequate existing and planned fire facilities to serve the SOI. Therefore, no direct or indirect physical impact is expected, and the cumulative public service impacts would be considered **less than cumulatively considerable**.

Mitigation Measures

None required.

3.11 PUBLIC SERVICES

REFERENCES

Fire Protection and Emergency Medical Services Subsection

Cal Fire (California Department of Forestry and Fire Protection). 2007. *Fire Hazard Severity Zones in SRA*.

City of Grass Valley. 1999. *City of Grass Valley General Plan – Safety Element*.

City of Grass Valley. 1999. *Master Services Element for Sphere of Influence*.

Clarabut, Tony. 2013. Grass Valley Fire Department. Personal communication. July 29.

Fire Safe Council Nevada County. 2013. Web page. <http://www.areyoufiresafe.com/>.

Law Enforcement Subsection

City of Grass Valley. 1999. *City of Grass Valley General Plan – Safety Element*.

DOF (California Department of Finance). 2012. *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2011, and 2012*.

Foster, John. 2013. Grass Valley Police Department. Personal communication. July 29.

Nelson, Donna. 2013. Nevada County Sheriff Department. E-mail communication. July 26.

Public Schools Subsection

CDE (California Department of Education). 2013. *Enrollment by Grade for 2012–2013, District and School Enrollment by Grade, Nevada Joint Union High Report*. Data Quest database query, Educational Demographics Unit. Accessed September 6. <http://dq.cde.ca.gov/dataquest/Enrollment/GradeEnr.aspx?cChoice=DistEnrGr2&cYear=2012-13&cSelect=2966357--NEVADA%20JOINT%20UNION%20HIGH&TheCounty=&cLevel=District&cTopic=Enrollment&myTimeFrame=S&cType=ALL&cGender=B>

GVSD (Grass Valley School District). 2013. Grass Valley School District webpage. Accessed September 6. <http://www.gvsd.k12.ca.us/?DivisionID=5506&ToggleSideNav>.

Hardy, Donna. 2013. Grass Valley School District. E-mail communication. July 30.

NJUHS (Nevada Joint Union High School District). 2013a. Choosing a School webpage. Accessed September 6. <http://www.nuhsd.org/district.cfm?subpage=301849>.

———. 2013b. *2012–2013 Enrollment Summary – as of October 2, 2013*. Sent via e-mail from Karen Suenram, Assistant Superintendent, Business Services, Nevada Joint Union High School District, to Tom Last, Community Development Director, City of Grass Valley. September 10.

Suenram, Karen. 2013. Nevada Joint Union High School District. E-mail communication. July 25.

Parks and Recreation Subsection

City of Grass Valley. 1999. *City of Grass Valley General Plan – Open Space Element*.

———. 1999. *City of Grass Valley General Plan – Recreation Element*.

———. 2001. *Parks and Recreation Master Plan*.

US Census Bureau. 2013. State & County QuickFacts, Grass Valley (city), California. Accessed September 6. <http://quickfacts.census.gov/qfd/states/06/0630798.html>.

3.12 PUBLIC UTILITIES

This section describes the existing public utilities in Grass Valley and identifies the potential impacts on these systems as a result of the proposed project. Public services and utilities include water service, wastewater conveyance and treatment, solid waste service, and electrical, natural gas, telephone, and cable services. The information in this section is based on review of City documents, reports prepared for the Nevada Irrigation District, and consultation with City staff and area service providers.

3.12.1 WATER SUPPLY

This is a programmatic evaluation that focuses on the availability of water supplies and related infrastructure needed to serve future development within the project area. Related water quality and drainage issues are discussed in Section 3.8, Hydrology and Water Quality. The proposed project does not include any development proposals or any other components that would be defined as a "project" pursuant to Water Code Section 10912; therefore, the proposed project does not trigger the need for a water supply assessment, as required by Senate Bill (SB) 610. Future development within the project area may require preparation of a water supply assessment along with future project-specific environmental analysis.

While the project is not subject to the requirement to prepare a water supply assessment, this section includes a programmatic analysis of the possible demands that could result from future development within the project area based on information from the City and the 2010 Urban Water Management Plan (UWMP) prepared for the Nevada Irrigation District (NID), which would supply water to any future users within the project area.

EXISTING SETTING

Water Supply

The City of Grass Valley operates a water treatment and distribution system that provides approximately 5.0 million gallons per day (mgd) and serves more than 2,300 customers in the City with domestic water service (City of Grass Valley 2013). The remainder of the City is served by the Nevada Irrigation District. The project area is entirely located within the area serviced by the NID, which provides treated water to residential and industrial users within Nevada County and Grass Valley. There are two NID waterlines within the project area: a 6- to 16-inch line that runs adjacent to La Barr Meadows Road, and a 10-inch water line that bisects the project area east to west.

The Nevada Irrigation District serves a population of approximately 45,000 customers located in the incorporated and unincorporated areas of Nevada, Placer, and Yuba counties, with a service area of approximately 287,000 acres (NID 2011). The water source for the NID is entirely from surface water sources in the form of rain and snowmelt, which is stored in a system of 10 reservoirs in the foothills of the Sierra Nevada (NID 2011, p. 2-5). The NID supplies both treated drinking water and untreated irrigation water. The NID operates an extensive system of reservoirs, canals, and treatment plants for water storage and distribution. The NID also produces hydroelectric energy from their system of reservoirs. The NID headquarters are located in Grass Valley.

The NID holds permits from the California Department of Health Services, Office of Drinking Water, for seven water treatment plants (WTP) with a combined capacity of 33.725 million gallons (mg) in 2011 (NID 2011, p. 2-5). Since the UWMP was prepared, the NID has finished an expansion of the Elizabeth George WTP, which has increased the capacity of the entire system to 42.425 million gallons. The portions of Grass Valley served by the NID and surrounding unincorporated areas of Nevada County are served by the Loma Rica Water Treatment Plant,

3.12 PUBLIC UTILITIES

which has a capacity of 8.0 mgd and the Elizabeth George WTP with a capacity of 18 mgd (NID 2013). As mentioned above, the Elizabeth George WTP has been expanded since the UWMP was adopted in 2011, and the UWMP states that an expansion of 4.0 million gallons is proposed for the Loma Rica WTP in 2020, making the total anticipated capacity of that facility 10 mg by 2020 (NID 2011, p. 2-5).

The Nevada Irrigation District UWMP identifies future supply projections assuming normal runoff and average annual precipitation (**Table 3.12-1**). The NID does not have plans to increase their raw water supply, which is supplied by Pacific Gas and Electric Company (PG&E). As shown in **Table 3.12-1**, the NID has an entitlement of 59,361 acre-feet per year (AFY), but historically, demand has ranged from 1,500 to 23,000 acre-feet, which the UWMP averages to 8,000 AFY demand (NID 2011, p. 4-7). The NID uses only water from within its watershed and does not import water supplies from other regions (NID 2011, p. 4-8). Treated recycled water is also used for agricultural users.

TABLE 3.12-1
CURRENT AND PROJECTED WATER SUPPLIES (AFY)

Source of Supply	2010	2015	2020	2025	2030	2035
Contract Purchase ¹	59,361	59,361	59,361	59,361	59,361	59,361
Watershed Runoff ²	209,377	229,124	229,124	229,124	229,124	229,124
Carryover Storage ²	139,395	119,843	119,843	119,843	119,843	119,843
Recycled	2,500	2,500	2,500	2,500	2,500	2,500
Totals	410,633	410,828	410,828	410,828	410,828	410,828

Source: NID 2011, Table 4-4, p. 4-7

Notes:

¹ Purchased under PG&E contract. 59,361 AF is the full entitlement; the normal purchase amount is 7,500 to 8,000 AFY. NID purchases are restricted to 23,591 AF during dry year conditions.

² Includes Middle Yuba River above Milton Diversion, Canyon Creek above Bowman Reservoir, Texas Creek, Fall Creek, and Deer Creek. Does not include Bear River or South Yuba due to PG&E contract provisions and hydrological and water rights considerations. Water year is from October 1 of previous year to September 30. Projected normal year supply is assumed to equal the 82-year average runoff.

³ Storage recorded at end of September of previous year and reduced by 39,675 acre-feet unusable minimum pool requirements and dead storage.

The project area is not located within an identified groundwater basin as mapped by the California Department of Water Resources (DWR 2003), and the NID does not use groundwater resources.

Water Demand

According to the 2010 UWMP, the NID expects that its combined water supplies will provide sufficient quantities of water to meet projected demands through the year 2035 (**Table 3.12-2**). The NID estimates that current water demand is approximately 400 gallons per day per household (NID 2013). The district estimates that between 2010 and 2035, its service population would increase by 2.4 percent annually (NID 2011, p. 2-10). As shown in **Table 3.12-2**, existing (2010) water demand is 129,894 AFY (31.6 percent of supply) and is expected to increase to 207,292 AFY (49.5 percent of total supply) by 2035. Projected water supply exceeds projected water demand by more than 200,000 AFY through the year 2035 (**Table 3.12-2**).

TABLE 3.12-2
CURRENT AND PROJECTED NORMAL YEAR WATER SUPPLY AND WATER DEMAND COMPARISON – 2010–2035 (AFY)

	2010	2015	2020	2025	2030	2035
Supply Totals	410,633	410,828	410,828	410,828	410,828	410,828
Demand Totals	129,894	180,046	187,360	195,729	200,646	203,536
Difference (Surplus)	280,739	230,782	223,468	215,099	210,182	207,292

Source: NID 2011, Table 7-1, page 7-1

Water Distribution

The entire project area would be served by the NID. An existing 6- to 16-inch NID water line parallels La Barr Meadows Road and a 10-inch NID water distribution line bisects the center of the project area. It is anticipated that this 10-inch line could be utilized to service the project area. More specific infrastructure plans will be developed as new development plans are proposed, but it is anticipated that the water distribution system for new development within the project area would be located within road rights-of-way and will be looped throughout the project area to provide adequate pressure to all properties. Existing uses within the project area are served by the NID and utilize existing NID infrastructure, so new development would likely connect to those facilities.

REGULATORY FRAMEWORK

State

California Department of Health Services

The Department of Health Services sets both primary and secondary water quality standards for drinking water. Primary standards are health-based. Secondary standards are related to palatability issues such as taste and odor. The NID holds permits from the California Department of Health Services, Office of Drinking Water for all of its water treatment plants (NID 2011, p. 2-5).

Local

Fire Flow Requirements

The 2007 edition of the California Fire Code (CFC) stipulates a fire flow requirement of 1,500 gallons per minute (gpm) for a duration of two hours for one- and two-family buildings having a fire area in excess of 3,600 square feet. Further, the fire flow requirement must be met with a minimum distribution system pressure of 20 pounds per square inch (psi) (residual pressure). The code also stipulates a maximum spacing of 500 feet for fire hydrants.

Due to the location of most reservoirs at 100–200 feet in elevation above the City, Grass Valley's water system provides excellent pressure and flows for firefighting purposes.

The City of Grass Valley General Plan stipulates the fire flow requirements shown in **Table 3.12-3** for different types of land uses.

3.12 PUBLIC UTILITIES

**TABLE 3.12-3
FIRE FLOW GENERAL PLAN REQUIREMENTS**

Land Use	Fire Flow* (gpm)	Duration (Hours)
Residential Low Density	500	2
Urban Single Family	500	2
Urban Medium Density	1,000	2
Urban High Density	1,000–2,000	2
Commercial	1,500–2,000	2–4
Industrial	1,500–3,500	2–4
School	2,000	4

Source: Nevada County 1996; City of Grass Valley 1998, Table 11-1

**Fire flow used for projection purposes is 2,000 gpm times 3-hour duration, which equals 360,000 gallons.*

Nevada Irrigation District

The Nevada Irrigation District adopted its 2010 UWMP in 2011 and the 2012 Agricultural Water Management Plan in November 2012. Both of these plans were prepared in compliance with Part 2.8 of Division 6 of the California Water Code. The primary objective of these plans is to conserve water through efficient water management. This analysis was prepared using information and projections from the UWMP.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, an impact to water service is considered significant if implementation of the project would result in any of the following:

- 1) Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- 2) Whether sufficient water supplies are available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.
- 3) 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 (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).

Methodology

Analysis of potential water service impacts of the proposed project was based on review of relevant documentation, review of the NID 2010 Urban Water Management Plan, and consultation with City staff. As mentioned above, the proposed project does not include development, but it would result in changes in land uses, which could provide for development

potential. Because on this, a project-specific analysis of water demand that could be generated as a result of new development within the project area cannot be done at this programmatic level. However, the 2010 UWMP does account for projected increases in the NID's service population, which includes the project area. This analysis will compare possible demands within the project area to the conclusions and projected water supply availability estimated by the UWMP. The analysis also looks at potential environmental impacts associated with development of the water storage and distribution system for future development within the project area.

A specific water analysis cannot be done at this time because no development proposals have been received for the project area, so the exact types of land uses that would be developed are not known. The NID estimates that average water demand is 400 gallons per day per household (NID 2013). This information was used to estimate residential water demand. Commercial and industrial water demand can be more difficult to estimate, as actual demands can vary drastically depending on the specific type of commercial or industrial use. For example, a restaurant typically uses more water than a retail store or an office. Similarly, industrial uses like a cannery or mill will use more water than a warehouse. Because the specific type of commercial and industrial uses that could be developed within the project area are unknown, general estimates for water demand rates were based on water consumption rates for similar types of development using standard engineering practices (Metcalf & Eddy 1991). For this analysis, it was assumed that 25 percent of the possible commercial space that could be developed within the project area would be developed as restaurant space, which has a water demand rate of 1,200 gallons per day (gpd) per 1,000 square feet, whereas retail uses have a water demand rate of 175 gpd per 1,000 square feet. It should be noted that it is unlikely that 25 percent of the acreage proposed for commercial land uses will be developed with restaurant uses. This assumption was made to provide a conservative estimate of water demand within the project area.

Project Impacts and Mitigation Measures

Water Facilities (Standard of Significance 1)

Impact 3.12.1 Future development within the project area would require the construction of new water lines, the construction of which could cause significant environmental effects. This impact is considered **less than significant**.

New development within the project area would require the construction of new water lines for water distribution within the project area. The NID currently has water distribution lines within the project area, including a line that parallels La Barr Meadows Road (6-inch diameter) and a 10-inch line that bisects the project area east to west. Future development would require installation of waterlines within the project area resulting in a looped water system that provides adequate water pressure and fire water supply. Environmental impacts which could result from development of the distribution lines that would serve individual businesses and residences within the project area are analyzed throughout this EIR in the technical sections that address construction impacts, including air quality, biological resources, cultural resources, and transportation and circulation.

The NID recently completed an 8.0 million gallon (mg) expansion at its Elizabeth George WTP, bringing that facility's capacity to 18.0 mg, and has plans to expand the capacity of the Loma Rica WTP by 4.0 mg by 2020. This increase would bring the total capacity of the Loma Rica WTP to 10.0 mg. Both of the water treatment plants serve the project area. With the recent and planned expansions in water treatment capacity, the potential water demand that could result

3.12 PUBLIC UTILITIES

from maximum buildout of the project area would not exceed the NID's existing and planned water treatment capacity. Therefore, future development within the project area would not require any other new water facilities or expansions of existing facilities. This impact is considered to be **less than significant**.

Mitigation Measures

None required.

Water Supply (Standard of Significance 2)

Impact 3.12.2 Future development within the project area would not result in insufficient water supplies available to serve the future development from existing entitlements and resources. This impact is considered **less than significant**.

As explained in the Methodology discussion above, a specific water demand analysis cannot be done until development applications are received by the City. At that time, a water supply assessment pursuant to SB 610, may be prepared which would provide a precise estimate of the projected water demand that each future development would generate and compare the demand to the NID's available water supply.

Table 3.12-4 provides an estimated water demand assuming the maximum buildout potential (see **Table 3.12-4**). The water demand rates are based on the NID's known residential demands and standard engineering water consumption rates. (Metcalf & Eddy 1991, NID 2013)

**TABLE 3.12-4
PROGRAMMATIC ESTIMATED WATER DEMAND FOR MAXIMUM BUILDOUT**

Land Use	Units	SF	GPD/Unit	GPD/1,000 SF ¹	Total Demand (GPD)	AFY
Annexation Area						
Residential						
Commercial						
Business Park		124,146		100	12,415	13.91
Industrial		704,169		150	105,625	118.32
<i>Total Annexation Area</i>		<i>828,315</i>			118,040	132.22
Not in Annexation Area						
Residential	534		400 ²		213,600	239.26
Commercial (Retail) ³		301,762				
<i>Retail (75% = 226,322 sf)</i>				175	39,606	44.36
<i>Restaurant (25% = 75,440 sf)</i>				1,200	90,529	101.41
Business Park						0.00
Industrial		330,816		150	49,622	55.58
<i>Total Not in Annexation Area</i>	<i>534</i>	<i>632,578</i>			393,357	440.62
Total Entire Project Area	534	1,460,893			511,397	572.84

Notes:

1. Demand rates for commercial and industrial buildings are based on water consumption rates from Metcalf & Eddy 1991.
2. NID 2013.
3. Because commercial water demand rates vary drastically, the analysis assumed that 25% of the commercial space possible under the maximum buildout scenario would be developed for restaurant uses, which have a much higher water demand rate. The remaining 75% of the commercial space allowable under the maximum buildout scenario was assumed to be developed as retail.

As shown in **Table 3.12-4**, if the project area were to build out at its maximum buildout potential, future development is likely to generate a water demand of approximately 573 AFY. While the 2010 UWMP did assume some development within the project area, the proposed project could enable different types of development. As shown in **Table 3.12-2**, according to the 2010 Urban Water Management Plan, in 2010, the NID had a water surplus of 280,739 AFY. The 2010 UWMP also projected a surplus of 207,292 AFY in 2035 without the acquisition of any new water entitlements. Based on the potential water demand that could result from the maximum buildout scenario, the NID's existing and future water surpluses would be adequate to serve future development within the project area without the need for additional water entitlements. Therefore, this impact is **less than significant**.

Mitigation Measures

None required.

Groundwater (Standard of Significance 3)

Impact 3.12.3 Future development within the project area would not 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 (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). This impact is considered **less than significant**.

Properties that are annexed and developed in the future must connect to the NID's water system which does not rely on groundwater and therefore would not affect existing wells.

Development of impervious surfaces associated with urban development, such as roadways, pavement, foundations, etc., reduce the amount of area with pervious surfaces where groundwater recharge can occur. In general, groundwater recharge potential is greatest along streams and near wetlands. Recognizing that urban development reduces the area available for groundwater recharge, Grass Valley General Plan Policies 25-LUP and 2-COSG set out to protect wetland areas from development, thereby preserving those areas for their beneficial qualities, such as groundwater recharge. The proposed project includes the dedication of open space lands along Wolf Creek, which would ensure that although future development would create new impervious surfaces within the project area, the most vital groundwater recharge areas along the creek would be permanently protected from development of any kind.

Additionally, water service in the project area would be provided by the NID, which uses surface water supplies. With the protection of open space areas along Wolf Creek and by relying on surface water supplies, future development within the project area would be unlikely to create a net deficit of groundwater supplies in the area. Therefore, this impact is **less than significant**.

Mitigation Measures

None required.

3.12 PUBLIC UTILITIES

3.12.2 WASTEWATER

This analysis focuses on wastewater service in Grass Valley and the availability of infrastructure capacity needed to serve future development within the project area. The City of Grass Valley has a sewer master plan and is in the process of updating that plan in 2013. The sewer master plan lays out the City's plans for existing and future wastewater infrastructure throughout the City and Sphere of Influence. A wastewater feasibility study was prepared for the project area in 2012 by SCO Planning & Engineering, Inc. (**Appendix 3.12-1**). This study addressed the feasibility of extending City sewer service to the project area.

EXISTING SETTING

The City of Grass Valley Public Works Department operates a wastewater treatment plant (WWTP), which serves an approximate population of 12,500. The City maintains 64 miles of pipeline within the collection system and seven wastewater lift stations. The Grass Valley WWTP currently treats 1.85 million gallons per day (mgd) and is permitted to treat up to 2.78 mgd. Existing land uses in the project area are currently served by individual septic systems. Once land is annexed and wastewater lines are extended to the project area, property owners have the ability to abandon their septic systems, should their system fail or if they require City sewer service to accommodate any expansion plans.

The City's WWTP, located on a 29-acre site at 556 Freeman Lane, was originally constructed in 1950, with additional modifications and improvements made in the late 1970s, early 1980s, and 1990s. In 2000, the WWTP capacity was expanded to treat up to 2.78 mgd, with 7.6 mgd capacity for peak flows. The plant has been improved to a secondary treatment plant providing preliminary treatment, primary clarification, trickling filter/solids contact process for secondary treatment, filtration for effluent polishing, and disinfection with ultraviolet light. The WWTP is permitted to discharge to Wolf Creek an average dry weather flow of not to exceed 2.78 million gallons per day (gpd), or 7.6 mgd for peak flows, and currently receives an average flow of 1.72 mgd.

Future demand for wastewater service is addressed in the City's General Plan and includes the Sphere of Influence Plan. The capacity of the plant can accommodate a service population of 21,000, the City's projected population within the Sphere of Influence over the next 20 years. The City Sphere of Influence Plan notes the current WWTP capacity has between 4,000 to 4,800 equivalent dwelling units (EDUs) available. It also notes that this capacity is expected to increase once the flows from the Newmont Mine are diverted to a private system, which is anticipated to be completed in 2014.

In 2012, SCO Planning and Engineering completed the *Wastewater Feasibility Analysis* that determined it is possible to provide wastewater collection services to the project area. The exact method of service will be determined at the time of development application.

REGULATORY FRAMEWORK

Federal

In 1972, the Clean Water Act (CWA) was adopted to protect the waters of the nation. The US Environmental Protection Agency (EPA) and corresponding state agencies regulate public wastewater systems to ensure compliance with the CWA. To implement the CWA regulatory standards, the National Pollutant Discharge Elimination System (NPDES) Permit Program was instituted.

The CWA requires that all point sources discharging pollutants into waters of the United States obtain a NPDES permit. By point sources, the EPA means discrete conveyances such as pipes or man-made ditches. Although individual households do not need permits, facilities must obtain permits if their discharges go directly to surface waters. Some pollutants that may threaten public health and the nation's waters are human wastes, ground-up food from sink disposals, laundry and bath waters, toxic chemicals, oil and grease, metals, and pesticides.

In California, the Regional Water Quality Control Boards administer the issuance of these federal permits. Obtaining an NPDES permit requires preparation of detailed information, including characterization of wastewater sources, treatment processes, and effluent quality.

State

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) was established in 1967 with the mission of ensuring the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters.

Regional Water Quality Control Boards

Under the direction of the SWRCB are nine Regional Water Quality Control Boards (RWQCB). Their mission is to develop and enforce water quality objectives and implementation plans that will best protect the beneficial uses of the State's waters. Responsibilities of the RWQCBs include developing Basin Plans for their respective hydrologic areas, governing requirements and issuing waste discharge permits, taking enforcement action against violators, and monitoring water quality.

Grass Valley is under the jurisdiction of the Central Valley RWQCB, which is responsible for the entire Sacramento and San Joaquin River drainage basins, an area extending from the northern California border (i.e., the Pit River watershed) south to the Tehachapi Mountains.

As stated earlier, the RWQCBs implement the NPDES program. All municipalities in the Central Valley region that discharge wastewater to surface waters are currently regulated by NPDES permits issued by the Central Valley RWQCB. Whether or not a permit may be issued, and the conditions of a permit if issued, are subject to many factors. Factors can include the Basin Plan water quality objectives, the impaired water body status of the receiving water, historical flow rates of the receiving water, effluent quality and flow, the State Implementation Plan (SIP), the California Toxics Rule, and established total maximum daily loading (TMDL) rates for various pollutants. These factors are highly specific to the potential discharge point. Obtaining an NPDES permit is generally considered difficult in inland areas and may not be possible in sensitive areas.

Industrial, commercial, cleanup, or other operations that discharge wastes directly into municipal or other publicly owned wastewater collection systems are not required to obtain an NPDES permit from the RWQCB, but must comply with waste discharge requirements issued by the appropriate public entity.

All NPDES permits issued by the RWQCB include self-monitoring programs that require the permittee to collect pertinent water quality data and to submit it to the RWQCB for evaluation

3.12 PUBLIC UTILITIES

of compliance with the terms of the permit. In addition, RWQCB staff conducts periodic inspections of each permitted discharge to monitor permit compliance.

Local

City of Grass Valley General Plan

The City of Grass Valley General Plan does not include any specific policies or standards that specifically address wastewater treatment. However, the Conservation/Open Space Element includes implementation programs that discuss the timing or improvements to the WWTP and the extension of sewer service to areas with inadequate on-site disposal. The entire project area is within the City's Sphere of Influence.

A discussion of the project's consistency with applicable General Plan policies is included in Appendix 3.1-1. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

City of Grass Valley Development Code

The City of Grass Valley Development Code carries out the policies of the General Plan by classifying and regulating the uses of land and structures in the City. One of the purposes of the code is to provide standards and guidelines for the continuing orderly growth and development of the City. Development Code Article 8, Subdivisions, includes Chapter 17.88, Subdivision Standards, which stipulates requirements for subdivisions, subdivision improvements, and installation of improvements such as wastewater infrastructure.

City of Grass Valley Improvement Standards

The Design Standards, Section 8, and the Construction Standards, Section 5, of the City's Improvement Standards include the requirements for installing sewer lines and connecting to the City's collection system. Details are included on the design and location of sewer lines, manholes, pump stations, and other elements associated with the sewer collection system.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, wastewater treatment disposal impacts are considered to be significant if implementation of the project will result in any of the following:

- 1) Result in a substantial increase in wastewater flows over current conditions and conveyance capacity such that it would require substantial expansion or alteration of existing wastewater collection facilities, the construction of which could cause significant environmental effects.

- 2) Result in a substantial increase in wastewater flows over current conditions and treatment capacity such that it would require the construction of new wastewater treatment facilities, the construction of which could cause significant environmental effects.

Methodology

The analysis of potential wastewater service impacts is based on review of relevant documentation (e.g., the City of Grass Valley General Plan, the Sphere of Influence Plan, etc.), the City Development Code, the wastewater feasibility analysis prepared by SCO Planning & Engineering, and consultations with City Public Works Department staff.

Impacts and Mitigation Measures

Wastewater Conveyance Facilities (Standard of Significance 1)

Impact 3.12.4 Future development that could occur within the project area would result in the need to provide new wastewater collection facilities to serve the area. This impact is considered **less than significant**.

Currently, the homes and businesses located within the project area are served for wastewater treatment by individual septic systems. With implementation of the proposed project, the existing land uses would be able to connect with the City's wastewater system as individual septic systems fail and require replacement, or as new development projects are proposed within the project area.

Since there are no or limited sewer lines existing in the project area to convey wastewater to the WWTP, new and upgraded sewer conveyance systems would be needed, both for major conveyance pipelines and for individual connections, the construction of which would result in substantial environmental impacts.

The wastewater feasibility analysis prepared by SCO Planning & Engineering evaluated the feasibility of extending the City's wastewater conveyance system to the project area to accommodate planned future growth, consistent with the General Plan and Sphere of Influence Plan. The study analyzed three alternatives for extending sewer service into the project area, as well as a "no project" scenario (Alternative 1). The study included a cost comparison analysis and reviewed funding options for the three alternatives, which ranged from \$4 million to \$4.6 million.

Alternative 2 would require the construction of two new lift stations to route wastewater through the existing City system at McKnight Way and South Auburn Street to the existing Joyce Drive lift station. This alternative would also require upgrades to the City's existing wastewater system in order to serve future development within the project area. A third lift stations would be required for future development west of State Route (SR) 49. The wastewater feasibility study identified potential operation and maintenance challenges associated within Alternative 2.

Alternative 3 would require two new lift stations for future development east of SR 49 and a third lift station for future development located west of SR 49. This alternative would connect to the existing 18-inch gravity sewer main at Freeman Lane. This alternative would also require new ejector pumps and upgrades to the existing Taylorville Road lift station.

Alternative 4 would require the construction of one regional lift station to be located on the west side of SR 49 and could replace the existing Taylorville Road lift station. This alternative would use

3.12 PUBLIC UTILITIES

gravity flow throughout the project area to direct to two low spots, which would terminate at the single new lift station, which would pump flows up to Taylorville Road to McKnight Way and then tie into the existing gravity sewer main at Freeman Lane.

The wastewater feasibility analysis recommended Alternative 4 as the most feasible because it would reduce long-term operational and maintenance costs; however, this alternative would have the highest upfront cost. It was noted that this alternative was also most consistent with the City's current sewer master plan.

Regardless of which alternative is ultimately chosen, a combination of new collection lines, upsizing of pipes, and new or upgraded lift stations will be needed to serve new development in the project area. While most of the work needed for the new infrastructure and upgrades would take place within existing rights-of-way, the construction of any alternative would result in significant environmental impacts.

At this time, the City has not selected a preferred alternative alignment, but development of one of the alternatives would be required before new development projects could be constructed within the project area. As noted above, the City is currently in the process of updating the sewer master plan, which is expected to result in the selection of the sewer conveyance system needed to serve the project area. Once the route is selected, the City will need to complete additional environmental review for that project, separate from this Southern Sphere of Influence Planning and Annexation project. It should be noted that while required for future development, rezoning and annexation may occur, but development within the project area and annexation area would be limited until the new wastewater system is constructed.

There are several design solutions for the routing of the collection system for the project service area, and the preferred alternative is likely to depend on the project that will require the installation. The intent of the 2012 feasibility study was to prove the ability of the City to extend the collection system into the project area. While the precise alignment has not been determined, the feasibility of the extension is certain, making this impact **less than significant**.

Mitigation Measures

None required.

Wastewater Treatment Capacity (Standard of Significance 2)

Impact 3.12.5 Future development within the project area would generate additional wastewater flows that would require treatment at the City's WWTP. The increased flows could affect the treatment capacity at the City's WWTP. This impact is considered **less than significant**.

While the proposed project itself would not result in additional wastewater flows to the WWTP, future development within the project area would result in connection to the City's wastewater system and additional flows that would need to be treated at the City's WWTP. The proposed annexation would also eventually result in the connection of existing uses within the project area to the City's wastewater system. The wastewater feasibility study estimated that once connected to the City's system, existing development would generate a daily average of 66,246 gpd of wastewater requiring treatment, with a maximum peak flow of 543,219 gpd (0.54 mgd).

The wastewater feasibility study also estimated that an average of 258,956 gpd (0.26 mgd) could potentially be generated by the maximum possible building potential of the project area,

with a total peak flow of 1.61 mgd. Since the study was prepared in 2012, the project maximum development assumptions have been modified to account for increased potential for residential development and for site constraints such as slopes and other features that would preclude future development at the site's maximum building potential. The wastewater calculations have been modified using the same generation rates and peaking factors as used in the wastewater feasibility study. Revised calculations are provided in **Table 3.12-5**.

**TABLE 3.12-5
WASTEWATER GENERATION POTENTIAL**

Proposed Land Use	Units/Square Footage	Wastewater Generation Rate (gpd)	Average Dry Weather Flow	Total Peak Flow
Single-Family Dwelling	534 dwelling units	191	101,994 gpd	897,547 gpd
Commercial/Retail	301,762 square feet	0.125	37,720 gpd	241,408 gpd
Business Park/Industrial	1,158,935 square feet	0.125	144,867 gpd	927,149 gpd
Flows from Potential New Development			284,581 gpd (0.28 mgd)	2,066,104 gpd (2.07 mgd) ¹
Existing Development				
Existing Residential	12 dwelling units	191	2,292 gpd	23,378 gpd
Existing commercial	64,164 square feet	0.125	8,021 gpd	81,809 gpd
Existing Development Subtotal			10,313 gpd	105,188 gpd (0.11 mgd)
TOTAL			0.29 mgd	2.18 mgd

Source: SCO Planning and Engineering 2012

Note: 1. Wastewater feasibility study estimated a maximum total peak flow of 1.61 mgd. The calculations for future development have been adjusted to reflect changes in project assumptions since the preparation of the study and to reflect more realistic building potential based on development constraints.

As shown in **Table 3.12-5**, existing and maximum future development within the project area could generate up to 0.29 mgd of wastewater on an average day, with a peak flow of 2.18 mgd. As stated in the Existing Setting discussion above, the City's wastewater treatment plant has a capacity of 2.78 mgd with a current average flow of 1.72 mgd. The WWTP has a maximum design capacity of 7.6 mgd for peak flows. If the entire project area were to be developed to its maximum building potential, the estimated wastewater flows from the project area would be within the WWTP's available capacity of 2.78 mgd for an average day and 7.6 mgd for peak flows. There is sufficient capacity at the wastewater treatment plant to accommodate the project. This impact is considered **less than significant**.

Mitigation Measures

None required.

3.12 PUBLIC UTILITIES

3.12.3 SOLID WASTE

EXISTING SETTING

Solid Waste Collection and Disposal

The Nevada County Department of Public Works Solid Waste Division oversees solid waste services and transfer station operations throughout Nevada County. Both the City of Grass Valley and Nevada County have independent franchise agreements with Waste Management of Nevada County to provide solid waste refuse and recycling services. Waste Management provides residential curbside garbage and recycling pickup services as well as commercial and industrial refuse and recycling services. Refuse and recycling materials collected by Waste Management and self-hauled refuse are collected at the McCourtney Road Transfer Station and Recycling Center located at 14741 Wolf Mountain Road in Grass Valley. Nevada County does not have a solid waste landfill. All solid waste refuse is hauled to an out-of-county landfill under a contract with Norcal Waste Systems, Inc. While the contract with Norcal Waste Systems does not specify a particular landfill to receive the waste, the majority of waste is currently hauled to the Recology Ostrom Road Landfill in Yuba County. According to the California Department of Resources Recycling and Recovery (CalRecycle) (2013), the Recology Ostrom Road Landfill has a total permitted capacity of approximately 43.4 million cubic yards and a remaining capacity of 37.6 million cubic feet, and is expected to reach its capacity and close in approximately 2066.

REGULATORY FRAMEWORK

State

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the California Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to Assembly Bill (AB) 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Solid waste plans are required to explain how each City's AB 939 plan will be integrated with the respective county plan. They must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal. The City of Grass Valley has met or exceeded the solid waste diversion rates since at least 2000.

Local

City of Grass Valley General Plan

The City of Grass Valley General Plan has no solid waste policies that are directly applicable to the proposed project in the context of CEQA. Therefore, no evaluation of the project with these statements pursuant to State CEQA Guidelines Section 15125(d) can be completed.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, a solid waste impact is considered significant the project would:

- 1) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs or not comply with federal, state, and local statutes and regulations related to solid waste.

Methodology

Evaluation of potential solid waste impacts was based on consultation with Waste Management staff, review of current waste reduction and recycling programs, and information provided by the CalRecycle website.

Impacts and Mitigation Measures

Solid Waste Impacts (Standard of Significance 1)

Impact 3.12.6 Future development within the project area would result in an increase in the generation of solid waste and a corresponding need for disposal facilities. This impact is considered **less than significant**.

Waste Management of Nevada County currently provides solid waste disposal services to the project area. Whether future development takes place within the jurisdiction of Nevada County or the City, Waste Management will continue to provide this service to the project area. **Table 3.12-6** shows a range of potential solid waste generation estimates for the potential land uses that could be developed within the project area. Based on these rates, future development in the project area could generate up to between 6,953 to 11,589 pounds of waste per day, based on maximum building potential. As previously stated, AB 939 requires cities and counties to implement specific recycling programs to reduce refuge and to achieve a 50 percent diversion of solid waste into landfills. In 2005 and 2006, the City achieved a diversion rate of 59 percent and 60 percent, respectively. For the reporting years 2007 to 2012, the City has complied with the new targeted diversion rates established by the state's new formula. The continuation of this diversion practice, as required by AB 939, would ensure that recycling requirements are met by the City, requiring less landfill capacity to accommodate the potential solid waste generation that could result from future development within the project area.

3.12 PUBLIC UTILITIES

**TABLE 3.12-6
SOLID WASTE GENERATION POTENTIAL**

Proposed Land Use	Units/Square Footage	Solid Waste Generation Rates	Estimated Solid Waste Generation
Single-Family Dwelling	534 dwelling units	7.8 to 11.4 pounds/day	4,165 to 6,087 pounds/day
Commercial/Retail	301,762 square feet	2.5 to 6.0 pounds/1,000 square feet/day	754 to 1983 pounds/day
Business Park/Industrial	1,158,935 square feet	0.006 to 0.1 pounds/square feet/day	6,953 to 11,589 pounds/day
Total			11,872 to 19,659 pounds/day 5.94 to 9.83 tons/day

Source: CalRecycle 2013

The Recology Ostrom Road Landfill is currently operating below permitted capacity and is estimated to have adequate service capacity for the next 53 years. The landfill has a maximum permitted disposal rate of 3,000 tons per day. According to CalRecycle (2013), the current daily average disposal rate is 696 tons per day. Given that the landfill has 37.6 million cubic yards of permitted capacity remaining, is permitted to accept an additional average of over 2,300 tons per day of refuse, and the total project would generate no more than 5.94 to 9.83 tons per day of refuse, completion of the project would have a **less than significant** impact on landfill capacity.

Mitigation Measures

None required.

3.12.4 ELECTRICAL, NATURAL GAS, TELEPHONE, AND CABLE SERVICES

EXISTING SETTING

Regional Electricity and Natural Gas Demand

The Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service to the residents of Grass Valley and to much of Nevada County, including the project area. Existing electrical facilities front La Barr Meadows Road. The project area includes the following natural gas lines: a 6-inch main on the west side of La Barr Meadows Road that runs along the length of the project area, a 2-inch gas main that runs to the end of Picadilly Lane, a 2-inch main in Taylorville Road that ends near the City's pump station, and a 2-inch main that serves the Kmart shopping center. Both natural gas and propane are prevalent in Grass Valley. Electrical facilities in the area include a three-phase primary facility along La Barr Meadows Road; a 6-inch spare conduit for mainline circuits, running from Freeman lane to the end of Picadilly Lane for service to lands between this development and SR 49; a three-phase tap line running south on Taylorville Road to the sewer pump station, then turning into a one-phase line and continuing south six more spans; and a three-phase loop serving the Kmart shopping center (Wells 2013).

Electricity and natural gas consumption are highly dependent on a number of factors, including the particular land use; geographic location; the size, design, and orientation of the structure; the type and efficiency of materials and appliances being used; and insulation ratings. Data

from the US Energy Information Administration (EIA) (2013) indicates that the average residence in California used approximately 567 kilowatt-hours (kWh) of electricity each month in 2011.¹ The California Energy Commission (CEC) (2013) estimates that the average household within the PG&E service area consumed approximately 490 therms in 2009.

Phone Service

AT&T currently provides telephone service for much of Grass Valley, as well as for the project area. AT&T facilities managers have indicated that fiber optic accessibility is also available to the project area. AT&T staff have previously indicated that a maximum buildout of the project area size would allow for extension of existing fiber optic lines along La Barr Meadows Road, north and south of the project area. A T-3 line could be available to the project area, if there is sufficient business demand for such a facility. With the amount of business park space being offered within the project area, there may be sufficient demand to warrant extension of the T-3 line to the project site, but it may not be required.

Cable Service

Comcast provides cable television and other cable-related services to Grass Valley and Nevada County. Comcast has previously indicated that cable service can be extended to serve future development within the project area, provided that sufficient lead time and details of future development locations are provided to ensure facilities are properly located in anticipation of pending development projects.

REGULATORY FRAMEWORK

State

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. The CPUC is responsible for ensuring that customers have safe, reliable utility service at reasonable rates, protecting against fraud, and promoting the health of California's economy.

Title 24 Building Standards

In October 2005, the State of California adopted changes to Title 24 of the California Code of Regulations regarding energy efficiency standards for residential and nonresidential buildings. These new energy efficiency standards were developed in response to the state's 2000–2001 electricity crisis, as well as in response to California Assembly Bill 970 (AB 970) and California Senate Bill 5X (SB 5X). Together, these two bills address increased energy efficiency in residential and nonresidential buildings, and include measures to minimize peak energy usage and reduce overall state energy needs. As a result, the average new construction in California after 2005 will generally have a lower energy demand than that reported by the CEC for structures built prior to 2005.

¹ Kilowatt-hour (kWh) – The most commonly used unit of measure telling the amount of electricity consumed over time. It means 1,000 watts of electricity supplied for one hour.

3.12 PUBLIC UTILITIES

Local

City of Grass Valley General Plan

The City of Grass Valley General Plan has no specific public utilities policies that are directly applicable to the proposed project in the context of CEQA. Therefore, no evaluation of the project with these statements pursuant to State CEQA Guidelines Section 15125(d) can be completed.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

A public utilities impact is considered significant if implementation of the project would:

- 1) Result in the need for new systems or supplies or a substantial expansion or alteration to electricity, natural gas, or telephone infrastructure that results in a physical impact on the environment, or if the amount of usage would result in inefficient, wasteful, and unnecessary consumption of energy (based on State CEQA Guidelines Appendix F).

Methodology

Evaluation of potential impacts on electrical, natural gas, and telephone services resulting from the proposed project was based on consultation with service providers and review of California Energy Commission policies and state standards. The analysis focuses on the environmental effects associated with the provision of these services to the project area.

Impacts and Mitigation Measures

Electric and Natural Gas (Standard of Significance 1)

Impact 3.12.7 Future development within the project area could require additional electrical and natural gas infrastructure and supplies. This impact is considered **less than significant**.

The project area is adjacent to existing development. Existing development within the project area currently receives electrical service, and some parcels have natural gas connections, although the use of propane tanks is common in the area as well. PG&E has stated that the project area contains significant facilities, and there are multiple facilities for both electricity and natural gas that future development could connect to in order to extend service. Any needed extension would be developed underground and would follow public roadways and easements to the greatest extent feasible. With the presence of extensive electricity and natural gas facilities in the project area, the most likely need for infrastructure would be connections for individual parcels.

Each future development project within the project area will be required to go through a consultation process, where PG&E will determine the specific demand for electricity and natural gas and the specific infrastructure needed to serve future development. PG&E has stated that they cannot provide a more detailed analysis for future development within the project area without specific development applications, but that, based on the information available, there

are several good options for providing electricity and natural gas to future development within the project area (Wells 2013).

Demand for electricity and natural gas supplies varies greatly, depending on many factors such as building materials, climate, site orientation, size of structure, land use, and personal habits. Therefore, electricity and natural gas demands for future development within the project area cannot be determined without detailed information about specific development projects. State regulations and building codes ensure that all new developments are as energy efficient as possible and do not result in the wasteful use of energy. PG&E did not indicate that future development within the project area would be likely to result in demands for electricity and natural gas that would exceed available supplies.

Because no development projects are proposed within the project area at this time, the exact locations or alignments of facilities are not yet determined. The impacts involved in the extension of infrastructure to serve future development within the project area involve excavation and the potential for erosion and dust during construction. The environmental effects would mostly occur in previously disturbed sites and roadway rights-of-way, and extending utility infrastructure would be limited to potential short-term construction effects associated with air quality, noise, water quality, and cultural and paleontological resources. Impacts associated with construction within the project area are addressed throughout this EIR, and mitigation measures are provided when needed. Therefore, this impact is **less than significant**, and the proposed project will not result in inefficient, wasteful, and unnecessary consumption of energy.

Mitigation Measures

None required.

Telephone and Cable Infrastructure (Standard of Significance 1)

Impact 3.12.8 Future development within the project area would require the extension of infrastructure for cable and telephone service, the installation of which could have environmental impacts. This impact is considered **less than significant**.

The project area is not in a remote location that does not have telephone service, and it is adjacent to the City of Grass Valley. Future development within the project area would require the development of hook-up infrastructure for individual parcels, consistent with typical development projects. Telephone infrastructure would be developed by AT&T. Fiber optic cable would also be extended north and south along La Barr Meadows Road to serve the project area. Cable service can be provided by Comcast through extension of existing infrastructure. Cable infrastructure is typically placed underground alongside other utilities.

It is anticipated that the vast majority of infrastructure would be located within roadway rights-of-way. However, because no development projects are proposed within the project area at this time, the exact locations or alignments of facilities are not yet determined. The impacts involved in the extension of infrastructure to serve future development within the project area involve excavation and the potential for erosion and dust during construction. The environmental effects would mostly occur in previously disturbed sites and roadway rights-of-way, and extending utility infrastructure would be limited to potential short-term construction effects associated with air quality, noise, water quality, and cultural and paleontological resources. Impacts associated with construction within the project area are addressed

3.12 PUBLIC UTILITIES

throughout this EIR, and mitigation measures are provided when needed. Therefore, this impact is **less than significant**.

Mitigation Measures

None required.

3.12.5 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES FOR PUBLIC UTILITIES

CUMULATIVE SETTING

In the cumulative context and for the purpose of this evaluation, the geographical setting for public utilities is the Grass Valley City limits and Sphere of Influence (SOI). To further set the cumulative context, the Grass Valley and Nevada County General Plans both designate the entire project area for urban and suburban-type development. Furthermore, the entire project area is located within the Grass Valley Sphere of Influence. As shown in the City's General Plan, the City has proposed areas for urban development throughout its Sphere of Influence. As new development occurs within the City limits, it would result in the construction of new buildings and other related urban improvements. As land is annexed into the City, it will result in the City approving new development. This new development will result in a need for the City and other public utility providers to extend and/or upgrade utility infrastructure to the area.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Public Utility Impacts (All Standards of Significance)

Impact 3.12.9 The proposed project will result in the cumulative demand for new or upgraded sewer, water, electrical, natural gas, solid waste, telephone, and cable services. This impact is considered **less than cumulatively considerable**.

As it pertains to this project and development of any lands currently within or annexed into the City, future development will be allowed in areas already planned for urban purposes. Future development within the City will be guided by the City General Plan, Development Code, and other associated planning and policy documents. Each project will be subject to the City's planning and environmental review processes. As part of the planning and environmental process, the payment of appropriate fees by all development projects would be required to mitigate any impacts on public utilities and minimize cumulative impacts on a project-by-project basis. The City Public Works Department, Nevada Irrigation District, Waste Management, PG&E, and other utility providers will be involved in the development review process for all projects in the City and would continue to provide input into the review of new projects to ensure they comply with all federal, state, and local regulations and ordinances protecting utility services, including complying with all water conservation measures and solid waste reduction measures implemented by the City or the state. As noted above and in the 2011 Sphere of Influence Plan completed by the Nevada County Local Agency Formation Commission (LAFCo), the City and the NID can provide and meet the public wastewater and water needs, respectively, of the anticipated growth in the City. Therefore, the cumulative public utility impacts would be considered **less than cumulatively considerable**.

Mitigation Measures

None required.

REFERENCES*Water Services Subsection*

- City of Grass Valley. 1998. *City of Grass Valley 2020 General Plan Background Report*.
- . 2013. Water and Wastewater Division Website. Accessed September 16.
http://www.cityofgrassvalley.com/services/departments/public_works/ww_overview.php.
- DWR (California Department of Water Resources). 2003. *Groundwater Basins in California*.
- Metcalf & Eddy. 1991. *Wastewater Engineering, Treatment Disposal Reuse*.
- Nevada County. 1996. *Nevada County General Plan*.
- NID (Nevada Irrigation District). 2005. *Strategic Plan 2005–2006*.
<http://www.nid.dst.ca.us/documents/plans/Strategic%20Plan%202005-2006.pdf>.
- . 2007. *Drought Contingency Plan*.
http://www.nid.dst.ca.us/documents/general/drought_cont_plan6-12-07.pdf.
- . 2011. *2010 Urban Water Management Plan*.
- . 2012. *2012 Agricultural Water Management Plan*.
- . 2013. Treated Water. Accessed September 16, 2013. <http://nidwater.com/water-service/treated-water/>.

Wastewater Facilities Subsection

- City of Grass Valley. 2013. *City of Grass Valley 2020 General Plan*.
- . 2013. Water and Wastewater Division Website. Accessed September 16.
http://www.cityofgrassvalley.com/services/departments/public_works/ww_overview.php.
- SCO Planning & Engineering, Inc. 2012. *Wastewater Feasibility Analysis*.

Solid Waste Services Subsection

- CalRecycle (California Department of Resources Recycling and Recovery). 2013. Website.
<http://www.calrecycle.ca.gov/wastechar/wastegenrates>.
- Waste Management of Nevada County. 2013. Website. Accessed August 2013.
<http://www.wastemanagement.com/Templates/FAC3196/services.asp>.

Electrical, Natural Gas, Telephone, and Cable Services Subsection

- CEC (California Energy Commission). 2013. *Energy Almanac, California Residential Natural Gas Consumption*. Accessed October 2013.
http://energyalmanac.ca.gov/naturalgas/residential_natural_gas_consumption.html.

3.12 PUBLIC UTILITIES

EIA (US Energy Information Administration). 2013. *Table 5A. Residential average monthly bill by Census division and State, 2011*. Accessed October 2013.
<http://www.eia.gov/tools/faqs/faq.cfm?id=97&t=3>.

Wells, L. 2013. Pacific Gas and Electric Company. Personal communication.

3.13 TRANSPORTATION AND CIRCULATION

This section analyzes the existing transportation system in the vicinity of the project area and addresses the potential transportation and circulation impacts that would result from development of the project area at its maximum development potential. This section is based primarily on the *Traffic Impact Analysis, Southern Sphere of Influence* prepared by Kimley-Horn and Associates in September 2013. Excerpts from the full report are included in this section. See **Appendix 3.13-1** for the full text of the Traffic Impact Analysis.

3.13.1 EXISTING SETTING

ROADWAY SYSTEM

The following are descriptions of the primary roadways in the vicinity of the project area.

State Route 49 (SR 49) is a north-south state highway that bisects the proposed project. SR 49 connects Grass Valley to Placer County (Auburn) to the south and to portions of Nevada County (Nevada City) to the north. In the vicinity of the project, SR 49 is a two-lane highway with a grade-separated interchange at McKnight Way. Within the immediate project area, SR 49 currently serves approximately 25,000 vehicles per day with one travel lane in each direction (Caltrans 2012). Under the scenarios in which a new at-grade intersection is assumed along SR 49 in the vicinity of Crestview Drive, SR 49 would serve as the primary access location for both the west and east development areas.

McKnight Way is a short east-west arterial roadway that primarily serves as an interchange with SR 49. This roadway is the primary access route to the commercial uses in the vicinity of the interchange. McKnight Way is four lanes wide on the bridge over SR 49 and has numerous auxiliary lanes serving driveways and minor cross streets between Freeman Lane on the west and South Auburn Street/La Barr Meadows Road on the east. This roadway, via its interchange with SR 49, will serve as the primary access location for the proposed project for vehicles originating from and destined to the north. Improvements to the McKnight Way interchange (including this intersection) are included in the Regional Transportation Mitigation Fee. Improvement options that have been evaluated by the City of Grass Valley and the Nevada County Transportation Commission (NCTC) at the interchange include constructing two-lane, six-legged roundabouts at the ramp terminal intersections that tie into South Auburn Street/La Barr Meadows Road, or installing a coordinated traffic signal system that includes a new traffic signal at the McKnight Way/South Auburn Street/La Barr Meadows Road intersection.

La Barr Meadows Road is a north-south two-lane arterial roadway that generally parallels SR 49 to the east. North of McKnight Way, this roadway becomes South Auburn Street. La Barr Meadows Road provides primary access to the project's east development area as it provides connectivity to McKnight Way to the north and SR 49 to the south. In addition, this roadway essentially bisects the east development area, establishing it as the primary transportation facility on the east side of SR 49.

Crestview Drive is a new east-west arterial roadway that is assumed to be in place when the project's west development area is added to Existing (2013) conditions and under Cumulative (2035) conditions with the addition of the proposed project. This short roadway will provide access to the proposed project, primarily the commercial uses on the west side of SR 49, by way of a new at-grade intersection with SR 49, as well as provide a connection to La Barr Meadows Road to the east.

3.13 TRANSPORTATION AND CIRCULATION

TRAFFIC STUDY AREA

The following facilities (intersections and roadway segments) are included in this evaluation and are depicted on **Figure 3.13-1**.

Intersections:

1. McKnight Way at Taylorville Road
2. McKnight Way at SR 49 SB Ramps
3. McKnight Way at SR 49 NB Ramps
4. McKnight Way at South Auburn Street/La Barr Meadows Road
5. SR 49 at La Barr Meadows Road

Roadway Segments:

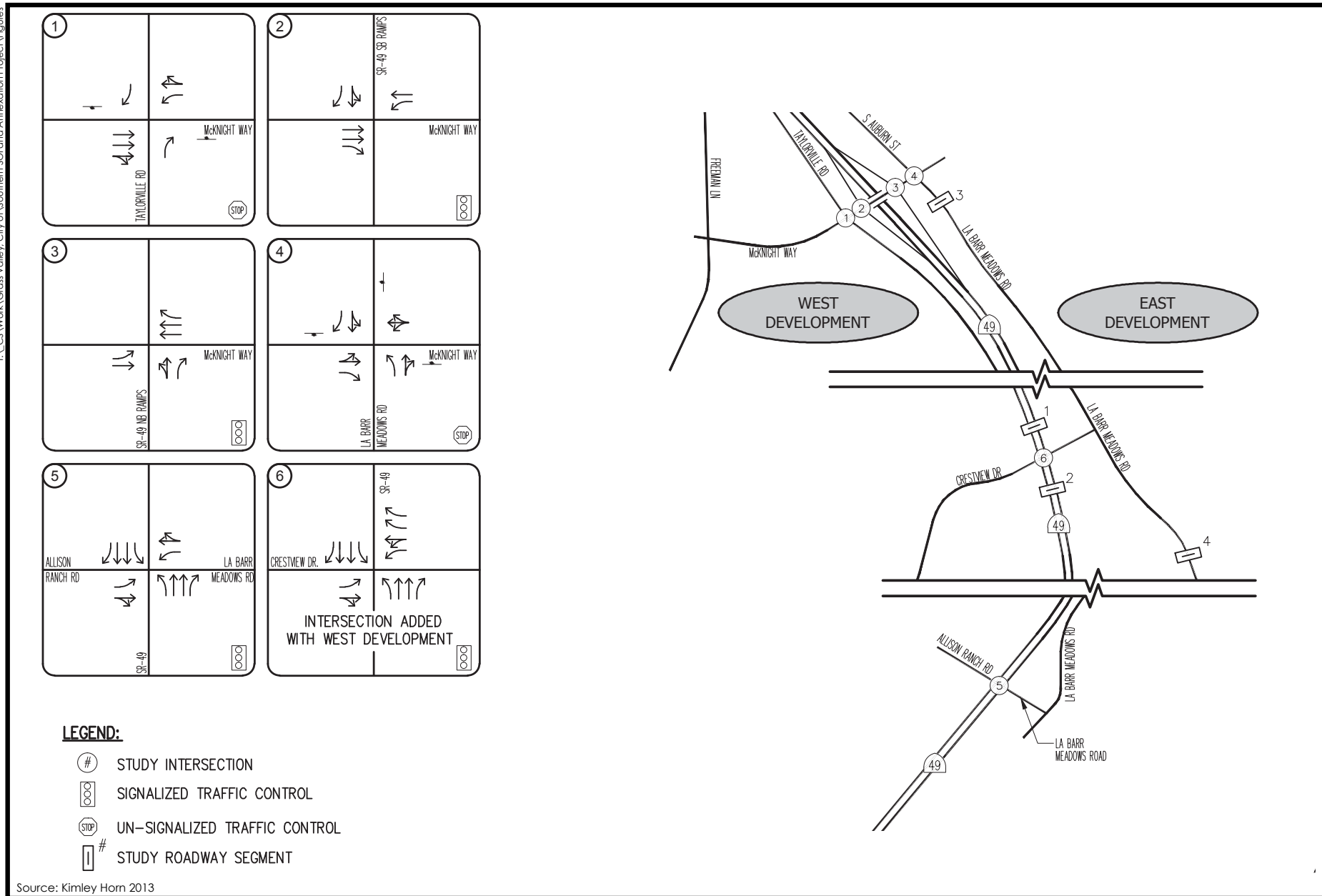
1. SR 49 between McKnight Way and Crestview Drive
2. SR 49 south of Crestview Drive
3. La Barr Meadows Road south of McKnight Way
4. La Barr Meadows Road south of project limits

EXISTING TRAFFIC CONDITIONS AND OPERATIONS

One weekday PM peak-period (4:00 p.m. to 6:00 p.m.) intersection turning movement traffic count was conducted for the SR 49 intersection with La Barr Meadows Drive on July 16, 2013. Traffic data for the four McKnight Way interchange intersections was obtained from Nevada County and projected one year from 2012 to 2013 to establish existing conditions at these locations. Existing (2013) PM peak-hour turn movement and roadway segment volumes are presented in **Figure 3.13-2**. Traffic count data sheets are provided in **Appendix 3.13-1**.

Intersections

Table 3.13-1 shows the peak-hour intersection operating conditions for the existing conditions scenario. As indicated in **Table 3.13-1**, the study intersections operate from level of service (LOS) A to LOS F during the PM peak hour. It is important to note that, due to the analysis methodology (SimTraffic), the existing operations at the McKnight Way intersection with the SR 49 Southbound Ramps (Intersection #2) report worse conditions than observed. When evaluated more traditionally (Synchro), this intersection operates at LOS A. As discussed later, the ultimate reconfiguration of the interchange renders this operational discrepancy moot.

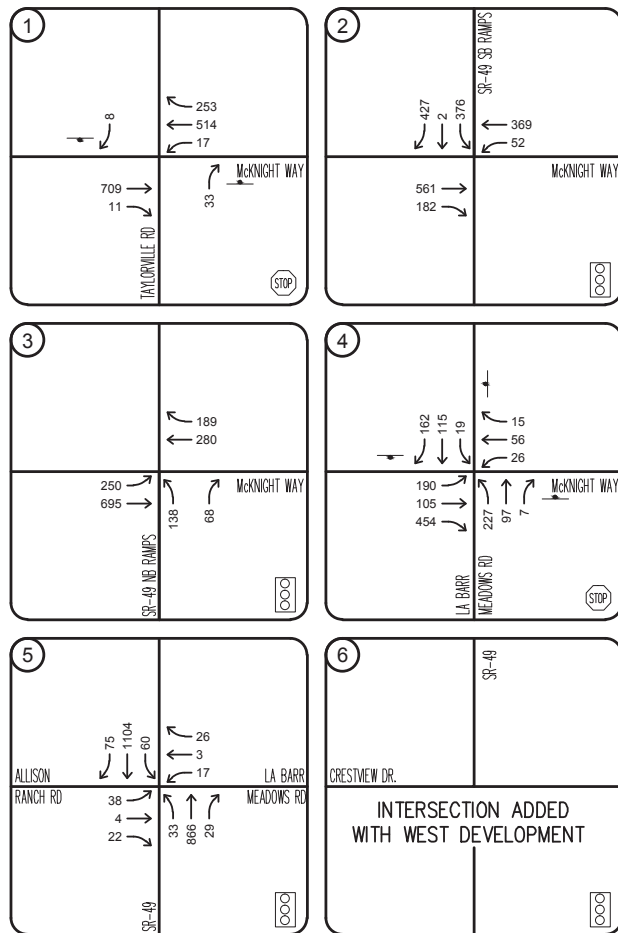


Source: Kimley Horn 2013

Not to Scale



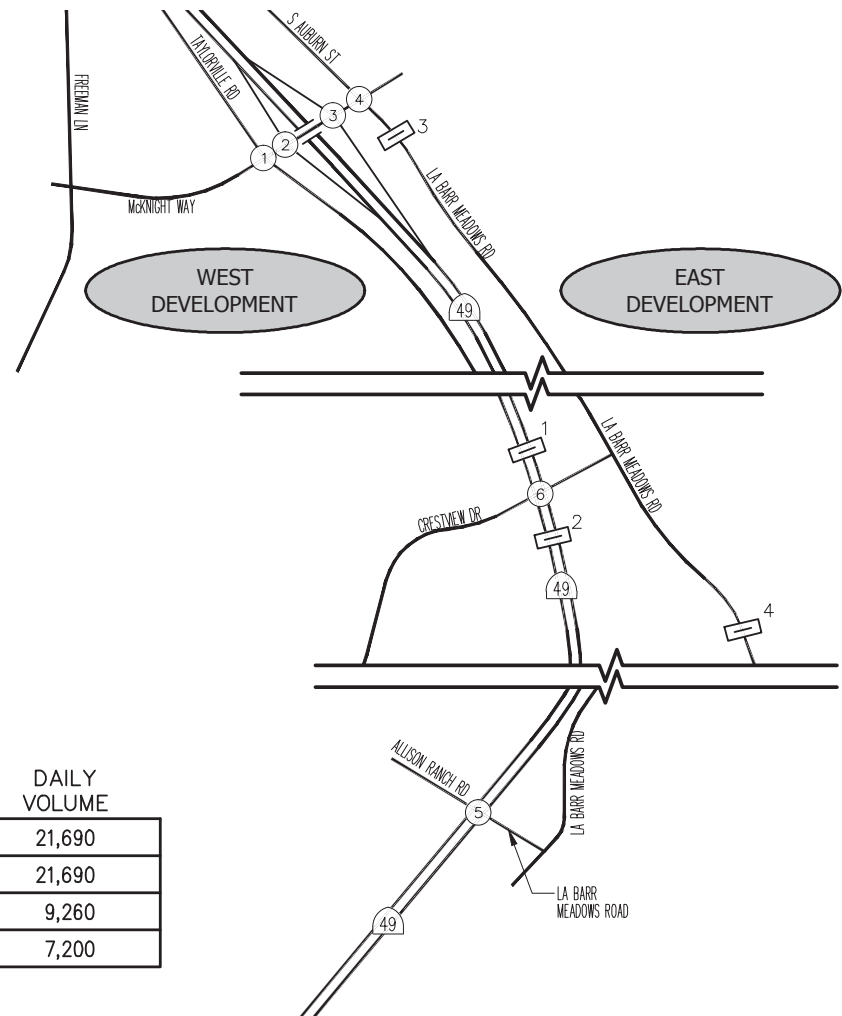
Figure 3.13-1
Study Intersections, Traffic Control, and Lane Geometries



LEGEND:

- XX PM PEAK-HOUR TRAFFIC VOLUME
- # STUDY INTERSECTION
- SIGNALIZED TRAFFIC CONTROL
- UN-SIGNALIZED TRAFFIC CONTROL
- # STUDY ROADWAY SEGMENT

ROADWAY SEGMENT	DAILY VOLUME
1	21,690
2	21,690
3	9,260
4	7,200



Source: Kimley Horn 2013

Not to Scale



Figure 3.13-2
Existing (2103) Traffic Volumes

TABLE 3.13-1
EXISTING (2013) INTERSECTION LEVELS OF SERVICE

#	Intersection	Traffic Control	PM Peak Hour	
			Delay (seconds)	LOS
1	McKnight Way at Taylorville Road	TWSC*	21.0 (331.0)	C (F)
2	McKnight Way at SR 49 SB Ramps	Signal	80.4	F
3	McKnight Way at SR 49 NB Ramps	Signal	15.5	B
4	McKnight Way at S Auburn St/La Barr Meadows Rd	TWSC*	6.3 (12.7)	A (B)
5	SR 49 at La Barr Meadows Rd	Signal	9.7	A
6	SR 49 at Crestview Dr	Not applicable for this scenario		

Source: Kimley Horn 2013

Notes:

* TWSC (two-way stop control) presented as overall intersection (worst minor approach movement)

Bold = Substandard per City

Roadway Segments

Table 3.13-2 presents the peak-hour roadway segment operating conditions for this analysis scenario. As indicated in **Table 3.13-2**, the study roadway segments operate at LOS A during the PM peak hour.

TABLE 3.13-2
EXISTING (2013) ROADWAY SEGMENT LEVELS OF SERVICE

#	Location	Roadway Type	# Lanes	Daily Volume	LOS
1	SR 49 between McKnight Way and Crestview Dr	Highway*	2	21,690	A
2	SR 49 south of Crestview Dr	Highway*	2	21,690	A
3	La Barr Meadows Rd south of McKnight Way	Arterial	2	9,260	A
4	La Barr Meadows Rd south of project	Arterial	2	7,200	A

Source: Kimley Horn 2013

Note: * Considered as "Interstate & Freeway" classification

3.13 TRANSPORTATION AND CIRCULATION

TRANSIT SYSTEM

Western Nevada County Transit Services operates the Gold Country Stage transit service in and around Grass Valley. The routes that utilize roadways in and around the study area are Route 3 and Route 5.

Route 3, the “Grass Valley Loop,” travels on Freeman Lane, McKnight Way, SR 49, Whiting Street, and South Auburn Street. Route 3 operates on weekdays between 7:00 AM and 5:30 PM. Limited service is available on Saturdays. Route 3 also makes trips to Loma Rica several times a day on weekdays only.

Route 5 operates between Grass Valley and Auburn traveling on SR 49. This route operates Monday through Saturday between 5:30 AM and 6:00 PM with two-hour headways from Grass Valley to Auburn, and from 7:00 AM to 7:30 PM with two-hour headways from Auburn to Grass Valley. Route 5 does not operate on weekends.

BICYCLE AND PEDESTRIAN SYSTEM

There are no existing bicycle facilities, sidewalks, or other pedestrian facilities on La Barr Meadows Road or State Route 49 adjacent to the project site.

3.13.2 REGULATORY FRAMEWORK

Existing transportation policies, laws, and regulations that apply to the proposed project are summarized below. This information provides a context for the input discussion related to the project’s consistency with applicable regulatory conditions.

STATE

California Department of Transportation (Caltrans)

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways in Nevada County. Federal highway standards are implemented in California by Caltrans. Caltrans policies are applicable to SR 49 and are summarized in the Caltrans’ (2002) *Guide for the Preparation of Traffic Impact Studies*. These guidelines identify when a traffic impact study is required, what should be included in the study, analysis scenarios, and guidance on acceptable analysis methodologies.

Caltrans endeavors to maintain a target service level of LOS C on state highway facilities. However, this may not always be feasible and, as the project progresses, Caltrans and the City of Grass Valley will need to consult regularly to determine the appropriate target LOS for a given improvement. For the purposes of this EIR, LOS C is considered the minimum acceptable operating level for Caltrans-controlled facilities.

REGIONAL

Nevada County Transportation Commission

The Nevada County Transportation Commission (NCTC) adopted the 2010 Nevada County Regional Transportation Plan (RTP) on July 20, 2011. The 2010 RTP documents the short-term (2010–2020) and long-term (2020–2030) regional transportation policy direction and multimodal

regional transportation needs, and sets forth a financially constrained action plan to meet those needs. The RTP includes the projects that are reasonably anticipated to be funded within the plan's fiscal constraints. The RTP also identifies projects that can be implemented if additional funds become available. To qualify for funding in the State Transportation Improvement Program (STIP), projects included in a Regional Transportation Improvement Program (RTIP) or Caltrans Interregional Transportation Improvement Program (ITIP) must be consistent with adopted regional transportation plans.

The purpose of the Regional Transportation Mitigation Fee Program (RTMF) is to finance improvements to the regional network of streets and roads that are needed to mitigate the impact of increased traffic that will result from new development. The fee program was adopted by the City of Grass Valley, Nevada City, and Nevada County and is administered by the Nevada County Transportation Commission through agreements with each agency. The program is not designed to be the only source of revenue to construct the identified facilities, and it will be necessary for matching funds to be provided from a variety of available sources. The proposed project is within the RTMF Program boundary and, as such, will be required to pay fees used to improve regional circulation system improvements via the RTMF.

LOCAL

City of Grass Valley General Plan

The City of Grass Valley has adopted standards related to transportation and circulation contained in the following planning documents: the *Grass Valley 2020 General Plan* (1998), the *City of Grass Valley Improvement Standards* (2012), and the *City of Grass Valley Street System Master Plan (SSMP)* (2004).

These planning documents provide transportation goals and policies related to intersection and roadway level of service standards, roadway functional classification, non-automobile travel (bicycle and pedestrian), transit, and parking.

A discussion of the project's consistency with applicable General Plan policies is included in **Appendix 3.1-1**. The discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. However, the final authority for interpretation of a policy statement, and determination of the project's consistency, ultimately rests with the City of Grass Valley City Council.

3.13.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Project impacts were determined by comparing conditions with the proposed project to those without the project. Impacts are created when traffic from the proposed project forces the LOS to fall below a specific threshold. City standards specify that "If the project traffic causes an intersection or roadway segment to worsen from an acceptable LOS to LOS E or worse, or is distributed to an intersection or roadway segment currently operating at an unacceptable LOS, the project is determined to cause a significant impact which must be mitigated." (Grass Valley 2009)

3.13 TRANSPORTATION AND CIRCULATION

Additional standards of significance, based on Appendix G of the CEQA Guidelines, are as follows. A project is considered to have significant impacts on transportation and circulation if it would result in any of the following:

- 1) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- 2) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- 3) 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.
- 4) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- 5) Result in inadequate emergency access.
- 6) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Impacts Not Evaluated Further

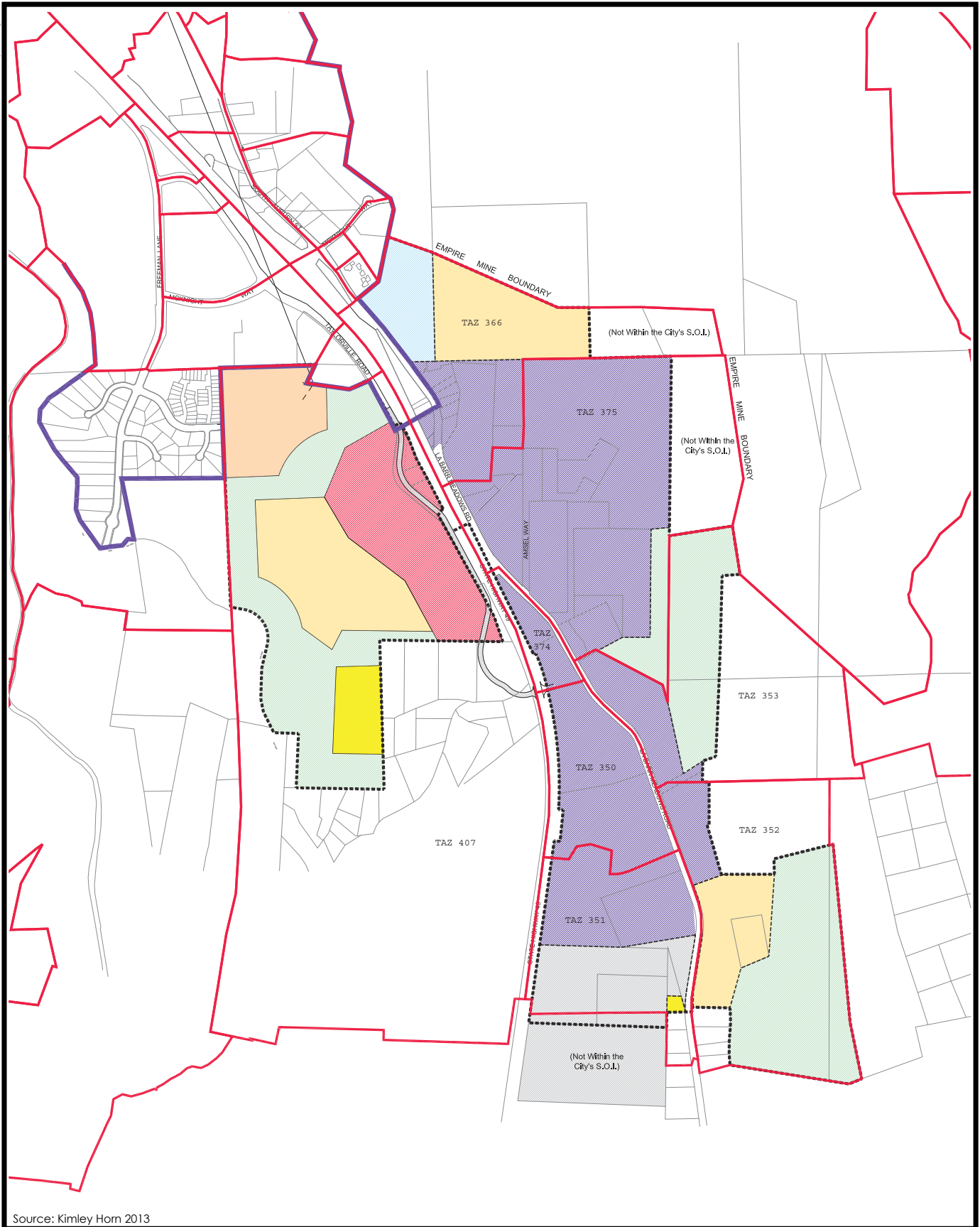
The proposed project does not include and would not result in the development of any components or uses that would interfere with air traffic patterns (Standard of Significance 3). This impact is, therefore, not further evaluated in the EIR.

ASSESSMENT OF THE PROPOSED PROJECT

For the purposes of the Traffic Impact Analysis, evaluation of the potential for traffic impacts was broken down into two development components, the east development area and the west development area, with SR 49 separating and establishing the demarcation of the areas. While the east development area will primarily gain access from La Barr Meadows Road, the west development area is assumed to gain primary access from a new, at-grade intersection in the vicinity of SR 49 at Crestview Drive. This improvement is not part of the proposed project, but it has been considered as a future improvement by the City.

The proposed project was determined to be included in eight traffic analysis zones (TAZs) as established in the City's travel demand model. As depicted on **Figure 3.13-3**, TAZ 407 is the only zone on the west side of SR 49, and the remaining TAZs (350, 351, 352, 353, 366, 374, and 375) are east of SR 49. Only TAZs 374 and 350 are entirely encompassed within the project boundary.

The proposed project is anticipated to generate a total of 21,738 new daily trips and 2,411 new PM peak-hour trips. These totals can be further broken down to 9,880 new daily and 1,366 new PM peak-hour trips for the east development area, and 11,858 new daily and 1,045 new PM peak-hour trips for the west development area.



Not to Scale

Figure 3.13-3
Traffic Analysis Zones (TAZs)

METHODOLOGY

Intersections

Analysis of traffic operations at intersections is typically based on the concept of level of service (LOS). The LOS of an intersection is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Intersection LOS for this study was determined using methods defined in the Transportation Research Board's (2000) *Highway Capacity Manual 2000* (HCM) and appropriate traffic analysis software. The City of Grass Valley has established an acceptable LOS D threshold (LOS E and F are unacceptable), and Caltrans (2002) has established acceptable operations on their facilities as the threshold between LOS C and LOS D.

The HCM includes procedures for analyzing two-way stop-controlled (TWSC), all-way stop-controlled (AWSC), and signalized intersections. These procedures define LOS as a function of average control delay. **Table 3.13-3** presents intersection LOS definitions as defined in the HCM.

TABLE 3.13-3
INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service (LOS)	Unsignalized	Signalized
	Average Control Delay* (sec/veh)	Control Delay per Vehicle (sec/veh)
A	≤ 10	≤ 10
B	> 10–15	> 10–20
C	> 15–25	> 20–35
D	> 25–35	> 35–55
E	> 35–50	> 55–80
F	> 50	> 80

Source: Transportation Research Board 2000

* Applied to the worst lane/lane group(s) for TWSC

Due to the close spacing of the four study intersections along McKnight Way, levels of service for these intersections were determined using the SimTraffic traffic analysis software. SimTraffic Measures of Effectiveness (MOEs) were compared against the HCM intersection delay thresholds (**Table 3.13-3**) to equate the SimTraffic results to HCM level of service.

Roadway Segments

Roadway LOS in Grass Valley is analyzed by comparing segment average daily traffic (ADT) volumes to the thresholds presented in the City's General Plan (1999). **Table 3.13-4** presents LOS volume thresholds for the various roadway functional classifications.

A weekday, PM peak-hour level of service analysis was conducted for the study facilities for the following scenarios:

3.13 TRANSPORTATION AND CIRCULATION

- A. Existing (2013) Conditions
- B. Existing (2013) plus Proposed Project Conditions¹
- C. Cumulative (2035) Conditions
- D. Cumulative (2035) plus Proposed Project Conditions²

TABLE 3.12-4
ROADWAY SEGMENT DAILY SERVICE VOLUME CRITERIA BY AVERAGE DAILY TRAFFIC (ADT)

Functional Classification	# Lanes	LOS A	LOS B	LOS C	LOS D	LOS E
Interstate & Freeway	2	29,700	34,650	39,600	44,550	49,500
	4	59,400	69,300	79,200	89,100	99,000
	6	89,100	103,950	118,800	133,650	148,500
Arterial	2	9,300	10,850	12,400	13,950	15,500
	4	18,600	21,700	24,800	27,900	31,000
	6	27,900	32,550	37,200	41,850	46,500
Collector	2	6,600	7,700	8,800	9,900	11,000

Source: City of Grass Valley 1999, Table 4-2

Note: Two-lane freeway level of service volumes are estimated based on the values for four-lane and six-lane facilities.

Proposed Project Trip Generation

The number of trips anticipated to be generated by the proposed project was approximated using *Trip Generation, 9th Edition* (2012), and the *Trip Generation Handbook, Second Edition* (2004), both published by the Institute of Transportation Engineers (ITE). The project's trip generation characteristics were documented by TAZ and by proposed zoning. As a result, it is possible to isolate the project trips anticipated to be generated by the east and west development areas. As appropriate, reasonable trip reductions were included to account for internal trip sharing and pass-by trips in a manner consistent with industry standard methodologies. **Table 3.13-5** presents the trip generation data for the proposed project.

¹ Includes two scenarios: east development area only, and east and west development areas.

² East and west development areas.

**TABLE 3.13-5
PROPOSED PROJECT TRIP GENERATION**

	TAZ	Proposed Zoning	Total Acres	Building Square Feet ¹	Dwelling Units ²	ITE Land Use Code	Daily Trip Rate	Daily Trips	PM Peak-Hour Trip Rate ³	PM Peak-Hour Trips
East of SR-49	350	M-2	26.8	175,111	-	130	6.83	1,196	0.85	149
	351	M-2	18.3	119,572	-	130	6.83	817	0.85	102
		Public	20.3	-	-	-	-	352*	-	36*
		RE	0.5	-	1	210	9.52	10	1.00	1
	352	R-2	13.3	-	106	210	9.52	1,013	1.00	106
		OS	33.6	-	-	-	-	-	-	-
		M-1	4	26,136	-	110	6.97	182	0.97	25
	353	M-1	10	65,340	-	110	6.97	455	0.97	63
		OS	21.9	-	-	-	-	-	-	-
	366	R-2	19.1	-	153	210	9.52	1,455	1.00	153
		M-1	16.1	105,197	-	110	6.97	733	0.97	102
		CBP	11.4	124,146	-	750	11.42	1,418	1.48	184
	374	M-2	5.1	33,323	-	120	1.50	50	0.68	23
	375	M-1	40.13	262,209	-	110	6.97	1,828	0.97	254
		M-2	37.97	248,096	-	120	1.50	372	0.68	169
		OS	7.53	-	-	-	-	-	-	-
Subtotal East Side								9,881		1,331
West of SR-49	407	R-1	16.4	-	66	210	9.52	625	1.00	66
		R-2	25.2	-	202	210	9.52	1,919	1.00	202
		C2	27.71	301,762	-	820	42.7	12,885	3.71	1,120
		OS	53.96	-	-	-	-	-	-	-
		RE	7	-	7	210	9.52	67	1.00	7
Internal Trip Reduction (11% Daily, 13% PM) ³ :								-1,705		-181
Pass-By Trip Reduction (15%) ⁴								-1,933		-168
Subtotal West Side								11,858		1,046
Total ADT (East + West Sides)								21,739		2,377

¹ Floor Area Ratio (FAR): 0.15 for M-1 and M-2, 0.25 for C-2 and CBP

² RE = 1 unit/acre, R-1 = 4 units/acre, and R-2 = 8 units/acre

³ Per ITE Trip Generation Manual, 9th Edition, using average trip rates for PM Peak-Hour

⁴ Per ITE Trip Generation Manual, 9th Edition, applied to retail (C2) only, limited to along SR-49

* Proposed Negative Declaration, Nevada County, California, May 2, 2013, 10% of Daily Trips for PM peak-hour

Source: Kimley-Horn, 2013

3.13 TRANSPORTATION AND CIRCULATION

The proposed project is anticipated to generate a total of 21,739 new daily trips and 2,377 new PM peak-hour trips. These totals can be further broken down to 9,880 new daily and 1,331 new PM peak-hour trips for the east development area, and 11,858 new daily and 1,046 new pm peak-hour trips for the west development area.

Proposed Project Trip Distribution and Assignment

The near-term and long-term (Cumulative) distribution and assignment of project traffic were developed primarily based on existing and projected traffic volumes, the location of households, and the existing and planned transportation network conditions. As discussed later, for existing conditions evaluation of the proposed project, two scenarios were considered: one scenario with only the east development area, and one with both the east and west development areas. Both development areas were considered under cumulative conditions. Project trips were globally distributed as follows:

- 50 percent to/from north using SR 49
- 40 percent to/from south using SR 49
- 10 percent to/from north using South Auburn Street

Figure 3.13-4, Figure 3.13-5, and 3.13-6 show the resultant project assignment for the Existing (2013) and Cumulative (2035) conditions. It is important to note that the SR 49 intersection with Crestview Drive (Intersection #6) is a future intersection that is included in this analysis only with the addition of the project's west development area under Existing (2013) conditions and with the addition of the proposed project to Cumulative (2035) conditions.

PROJECT IMPACTS AND MITIGATION MEASURES

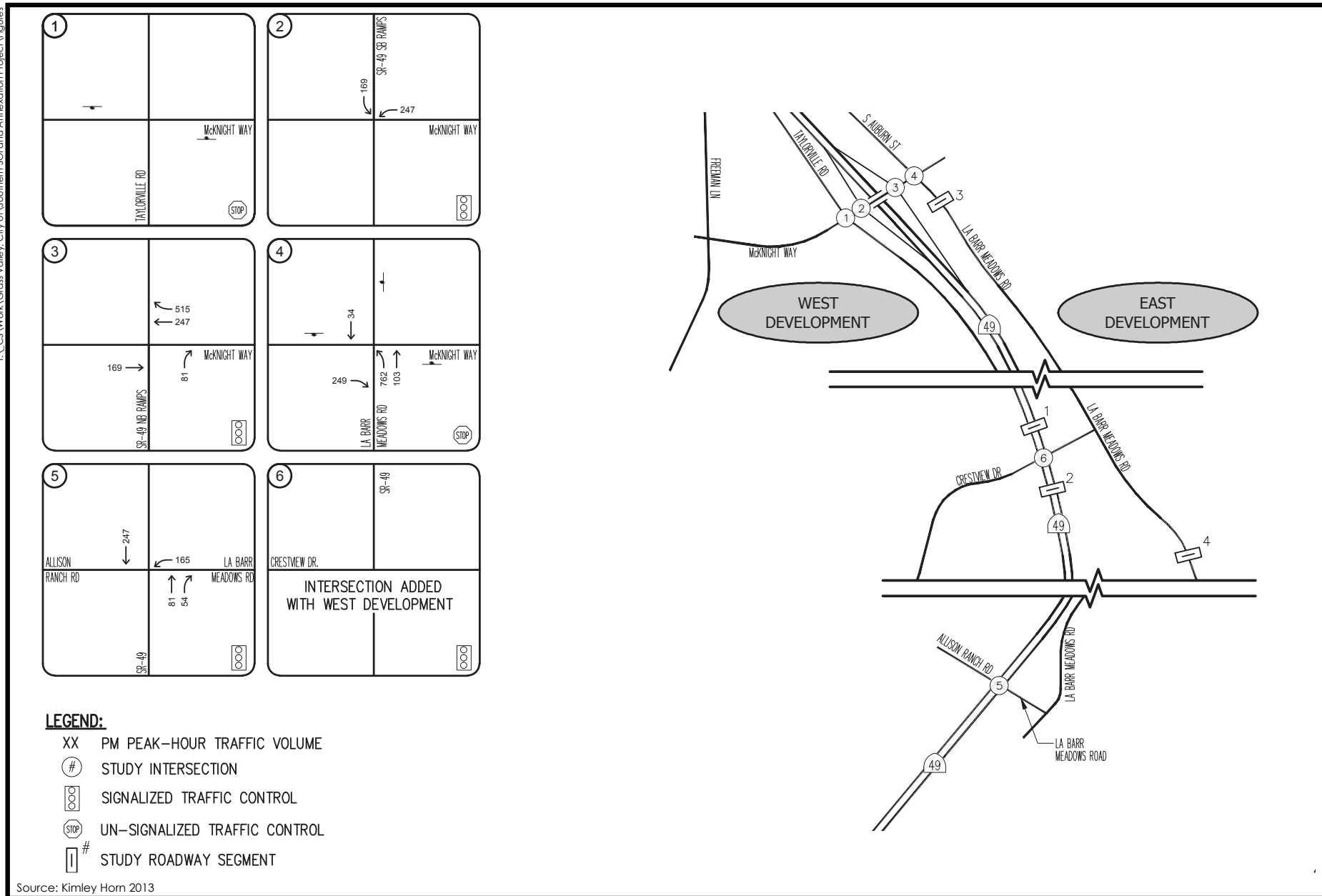
Existing (2013) plus Proposed Project Conditions (Standards of Significance 1 and 2)

Impact 3.13.1 Future development in the project area could conflict with plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. This impact is **significant**.

Intersections

As demonstrated in **Table 3.13-6**, assuming the maximum possible buildout potential for future development within the project area, the following three study intersections would experience unacceptable levels of service:

1. McKnight Way at Taylorville Road
2. McKnight Way at SR 49 SB Ramps
4. McKnight Way at S Auburn Street/La Barr Meadows Road

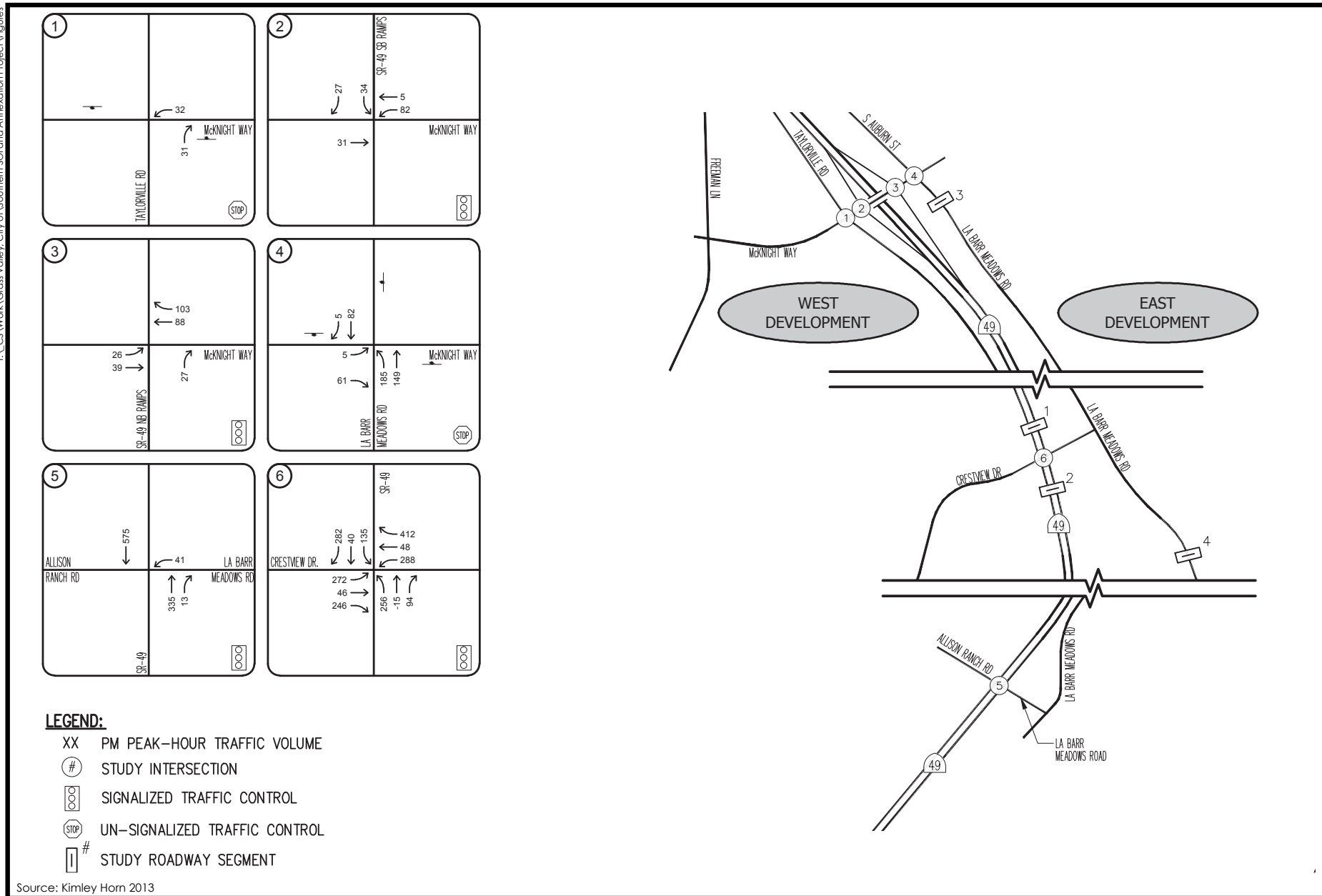


Source: Kimley Horn 2013

Not to Scale



Figure 3.13-4
Proposed Project Trip Assignment (East Development Only)

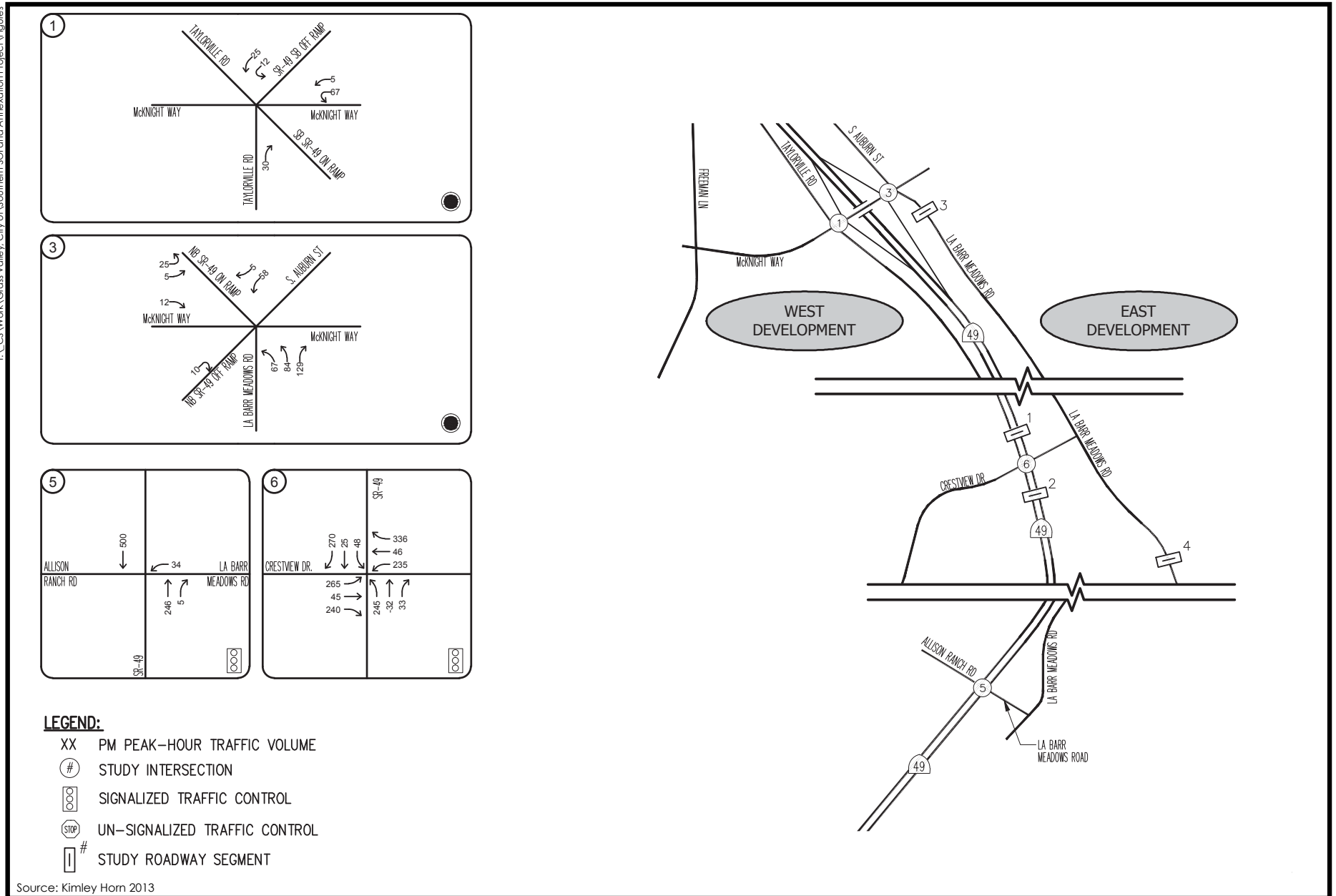


Source: Kimley Horn 2013

Not to Scale



Figure 3.13-5
Proposed Project Trip Assignment (East and West Development)



Not to Scale



Figure 3.13-6
Cumulative Project Trip Assignment (2035)

TABLE 3.13-6
EXISTING (2013) AND EXISTING (2013) PLUS PROPOSED PROJECT INTERSECTION LEVELS OF SERVICE

#	Intersection	Analysis Scenario ⁺	Traffic Control	PM Peak Hour	
				Delay (seconds)	LOS
1	McKnight Way at Taylorville Road	Ex	TWSC*	21.0 (331.0)	C (F)
		Ex + PP (1)		37.8 (620.7)	E (F)
		Ex + PP (2)		26.6 (316.6)	D (F)
2	McKnight Way at SR 49 SB Ramps	Ex	Signal	80.4	F
		Ex + PP (1)		127.8	F
		Ex + PP (2)		96.6	F
3	McKnight Way at SR 49 NB Ramps	Ex	Signal	15.5	B
		Ex + PP (1)		17.8	B
		Ex + PP (2)		14.7	B
4	McKnight Way at S. Auburn St/La Barr Meadows Rd	Ex	TWSC*	6.3 (12.7)	A (B)
		Ex + PP (1)		134.1 (415.1)	F (F)
		Ex + PP (2)		52.8 (182.3)	F (F)
5	SR 49 at La Barr Meadows Rd	Ex	Signal	9.7	A
		Ex + PP (1)		18.3	B
		Ex + PP (2)		15.5	B
6	SR 49 at Crestview Dr	Ex	<i>Not applicable for this scenario</i>		
		Ex + PP (1)	<i>Not applicable for this scenario</i>		
		Ex + PP (2)	Signal	50.5	D

Source: Kimley Horn 2013

⁺ Ex = Existing (2013), Ex + PP (1) = Existing (2013) plus Proposed Project (Scenario 1, east only), EX + PP (2) = Existing (2013) plus Proposed Project (Scenario 2, east and west)

* TWSC presented as overall intersection (worst minor approach movement)

Bold = Substandard per City

Shaded cells indicate significant impact as defined by City

McKnight Way at Taylorville Road

As shown in **Table 3.13-6**, with full development of the eastern side of SR 49, future development within the project area would result in LOS E overall. However, this level of service would improve to LOS D overall with the development of the western side of SR 49, which assumes the development of an at-grade signalized intersection on SR 49 at Crestview Drive.

McKnight Way at SR 49 SB Ramps

Maximum buildout of the project area would result in LOS F at the intersection of McKnight Way and the southbound SR 49 ramps for both development of the eastern and the western sides of SR 49. In this case, future development of the at-grade intersection of SR 49 and Crestview Drive would improve the delay time by approximately 30 seconds during the PM peak hour, but this would still be considered LOS F.

McKnight Way at South Auburn Street/La Barr Meadows Road

Development of the project area on both sides of SR 49 would reduce operations at this intersection from LOS A (or LOS B) to LOS F. Similar to the other intersections, development of the

3.13 TRANSPORTATION AND CIRCULATION

at-grade intersection of SR 49 at Crestview Drive would improve the delay at this intersection during the PM peak hour, but it would continue to operate at LOS F, which exceeds the City's standards.

The two other existing study intersections would continue to operate within the City's acceptable standards. The intersection of McKnight Way and the northbound SR 49 ramps would continue to operate at LOS B following development of both the eastern and western sides of SR 49. The intersection of SR 49 and La Barr Meadows would experience a slight delay in conditions, going from LOS A under existing conditions to LOS B following development of both the eastern and western sides of SR 49; however, this is still well within the City's level of acceptable conditions.

The sixth study intersection is the currently undeveloped at-grade intersection of SR 49 and Crestview Drive. The need for this new intersection would be triggered by development of the western side of SR 49. Following development of the western side of SR 49, this intersection is anticipated to have an LOS D.

McKnight Way Intersection Improvements

The provision of dual roundabouts on McKnight Way at the SR 49 intersection would improve operation of the intersection to acceptable levels. This improvement would combine the McKnight Way/La Barr Meadows Road/Auburn Street and McKnight Way/SR 49 Northbound Ramps intersection into one intersection, and the McKnight Way/Taylorville Road and McKnight Way/SR 49 Southbound Ramps intersections into one intersection. Due to the close intersection spacing and the coordinated operation of the intersections, the roundabouts would need to be installed simultaneously in order to adequately accommodate traffic flows. This improvement is identified project number 4 in the Nevada County Regional Transportation Mitigation Fee Capital Improvement Program. While included in the RTMF, it is not certain that construction of the improvements would occur prior to development within the project area. Further, it is likely that some development will occur that is too small to require full improvements be installed at this intersection as part of project conditions and that only payment of fees or other minor improvements would be feasible. Mitigation measure **MM 13.3.1** requires one of several actions to mitigate project impacts at this study intersection (see text of mitigation measure below).

Because the improvements will be funded as development occurs, it is likely that the level of service at this intersection may decrease below acceptable levels while the City collects sufficient funds to construct the improvements. Because a funding mechanism is in place, and additional improvements will be required as projects in the City develop, the impact is considered temporary as the improvements will eventually be made at this location.

Mitigation Measures

MM 3.13.1 The project proponent or successor in interest is responsible for project improvements at the SR 49/McKnight Way intersection as follows:

1. If the project would result in more than 63 total PM peak hour trips and add more than 10 PM peak-hour trips at the intersection of McKnight Way at Taylorville Road, McKnight Way at SR 49 SB Ramps and/or at McKnight Way at S. Auburn St/La Barr Meadows Road, a traffic study shall be prepared to determine the extent of impact(s) and appropriate mitigation responsibility assigned as a condition of approval. As a result of the study, the project could:

- a) Be required to install the improvements at the SR 49/McKnight Way intersection; or
 - b) Pay the project's proportionate share of the SR 49/McKnight Way intersection improvements; or
 - c) Construct some associated improvement that would address project impacts at the SR 49/McKnight Way intersection; or
 - d) Be required to complete some combination of the above to address project impacts at the SR 49/McKnight Way intersection identified in the traffic study.
2. If the project would result in less than 63 total PM peak-hour trips and less than 10 PM peak-hour trips at this intersection, the project proponent or successor in interest shall pay the associated mitigation fees.

Timing/Implementation: Prior to occupancy of development within the project area

Enforcement/Monitoring: City of Grass Valley Planning Division and Public Works Department

While implementation of mitigation measure **MM 3.13.1** would provide some mitigation for the reduction in level of service at the three study intersections, the impact remains significant and unavoidable. This impact remains significant because it is unknown when the intersection improvements would occur, and the construction of the complete improvement may not be feasible for a single project. Furthermore, the City of Grass Valley does not have sole jurisdiction over the approval of construction or timing of when the improvements would occur.

In addition, this impact would require an overriding consideration since the impact experienced prior to Cumulative (2035) conditions may be unavoidable due to the following factors: (1) the intersection will exceed LOS standards at some unknown time before the Cumulative (2035) conditions, which is when the intersection improvements are presumably in place; (2) the proposed intersection improvements require further analysis as well as the analysis of other alternatives; and (3) the collection of mitigation fees to fund the improvements is not guaranteed to be assigned to the needed intersection improvements. Further traffic analysis will be required to evaluate the effects of each individual development within the project area that satisfy the requirements for traffic analysis as detailed in the City's Improvement Standards. When improvements are determined to be feasible, each of these individual development projects will be conditioned to mitigate their impacts accordingly. Therefore, this impact is considered **significant and unavoidable**.

Roadway Segments

As shown in **Table 3.13-7**, one of the roadway segments studied would experience deficient level of service. As shown, Segment #3 (La Barr Meadows Road south of the project) currently experiences LOS A with a daily volume of 9,260. Assuming full buildout of the eastern side of SR 49, traffic congestion would increase to LOS F with a daily volume of 20,740, which exceeds the City's standard of LOS E. Following full development of the western side of SR 49, which assumes the development of a new at-grade intersection on SR 49 at Crestview Drive, the level of service would decrease to LOS E with a volume of 14,030. LOS E does not meet City standards.

3.13 TRANSPORTATION AND CIRCULATION

The other study area roadway segments would operate at LOS A or LOS B with the development of both the eastern and western sides of SR 49.

TABLE 3.13-7
ROADWAY SEGMENT LEVELS OF SERVICE

#	Location	Analysis Scenario ⁺	Roadway Type	# Lanes	Daily Volume	LOS
1	SR 49 between McKnight Way and Crestview Dr	Ex	Highway*	2	21,690	A
		Ex + PP (1)			24,970	A
		Ex + PP (2)			32,950	B
2	SR 49 south of Crestview Dr	Ex	Highway*	2	21,690	A
		Ex + PP (1)			24,970	A
		Ex + PP (2)			30,790	B
3	La Barr Meadows Rd south of McKnight Way	Ex	Arterial	2	9,260	A
		Ex + PP (1)			20,740	F
		Ex + PP (2)			14,030	E
4	La Barr Meadows Rd south of project	Ex	Arterial	2	7,200	A
		Ex + PP (1)			9,390	B
		Ex + PP (2)			7,740	A

Source: Kimley Horn 2013

* Ex = Existing (2013), Ex + PP (1) = Existing (2013) plus Proposed Project (Scenario 1, east only), EX + PP (2) = Existing (2013) plus Proposed Project (Scenario 2, east and west)

* Considered as "Interstate & Freeway" classification

Bold = Substandard per City

Shaded cells indicate significant impact as defined by City

Mitigation Measures

None available for portions of La Barr Meadows Road. However, where feasible, portions of La Barr Meadows Road should be widened or modified to meet minimum City safety standards.

The significant impact on this roadway segment cannot be mitigated by widening the segment from two to four lanes (which, if possible for the entire roadway length, would result in LOS A or LOS B) due to the road's proximity to existing buildings and State Route 49. Therefore, this impact cannot be mitigated and is **significant and unavoidable**.

Increased Hazards (Standard of Significance 4)

Impact 3.13.2 The project could substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). This impact is considered **less than significant**.

All improvements will be designed to City of Grass Valley or Caltrans standards. The only additional roadway or intersection that is known to occur as a result of development in the project area is that of SR49 and Crestview Drive. This new intersection will first be designed as a signalized at-grade intersection on SR 49 south of the existing Crestview Drive intersection, and will relocate Crestview Drive to connect to the proposed intersection. This new intersection will provide access to the west side of SR 49 and through a short new roadway connection from SR 49 to La Barr Meadows Road. The City anticipates that this new intersection and roadway will

result in a shift in existing traffic patterns, primarily on SR 49, La Barr Meadows Road, and McKnight Way, and improve the overall level of service in the area. Because this new intersection is partially within Caltrans right-of-way, the design must meet Caltrans standards for safety. As the new intersection must meet state standards for safety and will improve the levels of service at other intersections impacted by the proposed project, this impact is considered **less than significant**.

Mitigation Measures

None required.

Emergency Access (Standard of Significance 5)

Impact 3.13.3 The project could result in inadequate emergency access. This impact is considered **less than significant**.

The primary roadways that would provide access to the project area include La Barr Meadows Road and State Route 49. Several other roadways in the project vicinity are likely to be used by project traffic, including the future Crestview Drive intersection with SR 49 and the improved McKnight Way. Future development within the project area may contribute more traffic to the main evacuation routes in the area (SR 49 and La Barr Meadows Road, and farther away, SR 20) in the event evacuations are ordered in the vicinity of the project area. However, all future development within the project area will be required to comply with City requirements for emergency access, and development plans would need to be checked and approved by the fire department to ensure adequate emergency access during construction and implementation. Therefore, future development within the project area is expected to maintain adequate emergency access and access to evacuation routes. This is considered to be a **less than significant** impact.

Mitigation Measures

None required.

Adopted Policies, Plans, or Programs (Standard of Significance 6)

Impact 3.13.4 The project could conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. This impact is considered **less than significant**.

Transit

The primary mode of transportation to/from the project area will be the automobile; however, given the range of potential uses and the existing development, there is likely to be some demand for transit. Currently, the transit routes serving the area are Gold Country Stage Route 3, which travels on Freeman Lane, McKnight Way, SR 49, Whiting Street, and South Auburn Street, and Route 5, which operates between Grass Valley and Auburn on SR 49. Route 3 operates on weekdays between 7:00 AM and 5:30 PM, with limited service available on Saturdays. Route 5 operates Monday through Saturday from 6:00 AM to 10:00 AM and from 1:00 PM to 5:00 PM with two-hour headways (the time between buses). There are no current plans to expand transit service to this area.

3.13 TRANSPORTATION AND CIRCULATION

Bicycle and Pedestrian Access

The Nevada County Transportation Commission updated the Nevada County Bicycle Master Plan that addresses both bicycle and pedestrian facilities in July 2013, which was adopted by the City of Grass Valley on July 17, 2013. The plan identifies a Class III facility with multi-use shoulder along La Barr Meadows Road from McKnight Way to the City limits and a Class II bike lane along Freeman Lane from McKnight Way to Boston Ravine on the west side of SR 49.

City of Grass Valley standard roadway improvements require the installation of sidewalks along at least one side of a residential street (Standard ST-15) and on both sides of all other public streets (ST-14, ST-16 through ST-23). All new streets must be consistent with City design standards. The Bicycle Master Plan also addresses retrofitting sidewalks along two existing roadways in the project area: East and West McKnight Way and Freeman Lane.

All development within the proposed project area must be consistent with City standards and with the adopted Bicycle Master Plan. As individual projects are proposed within the project area, the street improvements will be required to connect to existing facilities and construct new facilities consistent with the City's design guidelines. This impact is considered **less than significant**.

Mitigation Measures

None required.

3.13.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The Traffic Impact Analysis used the City's travel demand model to determine future traffic conditions within the City and the City's Sphere of Influence in 2035. The traffic consultant also accounted for development projects that were not already accounted for in the City's traffic model and assumed roadway network changes as shown in Appendix D of the Traffic Impact Analysis (**Appendix 3.13-1**).

The tables below present the cumulative conditions for intersection level of service (**Table 3.13-8**) and roadway segment level of service (**Table 3.13-9**). As shown in **Table 3.13-8**, all of the study intersections operate at LOS B during the PM peak hour. As shown in **Table 3.13-9**, the study roadway segments operate at LOS A, with the exception of La Barr Meadows Road south of McKnight Way, which operates at LOS C. Each of the intersections and roadway segments meets the City's operating standards in the cumulative-only scenario.

TABLE 3.13-8
CUMULATIVE (2035) INTERSECTION LEVELS OF SERVICE

#	Intersection	Traffic Control	PM Peak Hour	
			Delay (seconds)	LOS
1	McKnight Way at Taylorville Rd/SR 49 SB Ramps	Roundabout	15.0	B
2	<i>Intersection consolidated with interchange reconfiguration</i>			
3	McKnight Way at SR 49 NB Ramps/S Auburn St/La Barr Meadows Rd	Roundabout	13.3	B
4	<i>Intersection consolidated with interchange reconfiguration</i>			
5	SR 49 at La Barr Meadows Rd	Signal	11.5	B
6	SR 49 at Crestview Dr	<i>Not applicable for this scenario</i>		

Source: Kimley Horn 2013

Bold = Substandard per City

TABLE 3.13-9
CUMULATIVE (2035) ROADWAY SEGMENT LEVELS OF SERVICE

#	Location	Roadway Type	# Lanes	Daily Volume	LOS
1	SR 49 between McKnight Way and Crestview Dr	Highway*	2	24,170	A
2	SR 49 south of Crestview Dr	Highway*	2	24,170	A
3	La Barr Meadows Rd south of McKnight Way	Arterial	2	11,800	C
4	La Barr Meadows Rd south of project	Arterial	2	8,295	A

Source: Kimley Horn 2013

* Considered as "Interstate & Freeway" classification

Bold = Substandard per City

As shown in **Table 3.13-8**, all intersections operate at LOS B in the cumulative scenario without buildout of the project area. Peak-hour roadway segment operations would be LOS A and LOS C (**Table 3.13-9**).

METHODOLOGY

Because the City's travel demand model assumed trips associated with assumed development within the eight TAZs included in the proposed project boundary, the assessment of the addition of the proposed project required calculation of the "delta," or the net change in trips for the project area. To this end, as reflected in **Table 3.13-10**, it was necessary to first approximate the proportion of each TAZ within the project boundary. Ranging from 100 percent to 50 percent, these proportions were then used to calculate the model trips that are essentially replaced by the proposed project.

3.13 TRANSPORTATION AND CIRCULATION

TABLE 3.13-10
TAZ TRIP COMPARISON

% of TAZ in project	TAZ	Model Daily Trips	Rezone Daily Trips	Model PM Trips	Rezone PM Trip
100%	350	612	1,196	68	149
50%	351	491	1,178	55	138
75%	352	68	1,195	8	132
50%	353	212	455	24	63
85%	366	525	3,606	47	439
100%	374	1,221	50	82	23
85%	375	1,469	2,200	125	423
50%	407	378	11,858	42	1,045
	Total:	4,975	21,738	450	2,411
	East:	4,597	9,880	408	1,366
	West:	378	11,858	42	1,045

As an example, for TAZ 353, 50 percent of the TAZ is within the project boundary. As such, one half of the model PM peak-hour trips were calculated (24) and this value was compared to the project's trips for this TAZ (63). This "delta" (39) was the peak-hour volume analyzed in this scenario for this TAZ. Repeating this calculation for each TAZ resulted in the addition of a total of 1,961 PM peak-hour trips (2,411-450). As depicted in **Table 3.13-10**, the addition of the proposed project results in a net increase of 959 PM peak-hour trips (1,366-408) within the east development area and 1,003 (1,045-42) additional PM peak-hour trips within the west development area. These "net" trips were then added to the Cumulative (2035) volumes, and levels of service were determined at the study facilities.

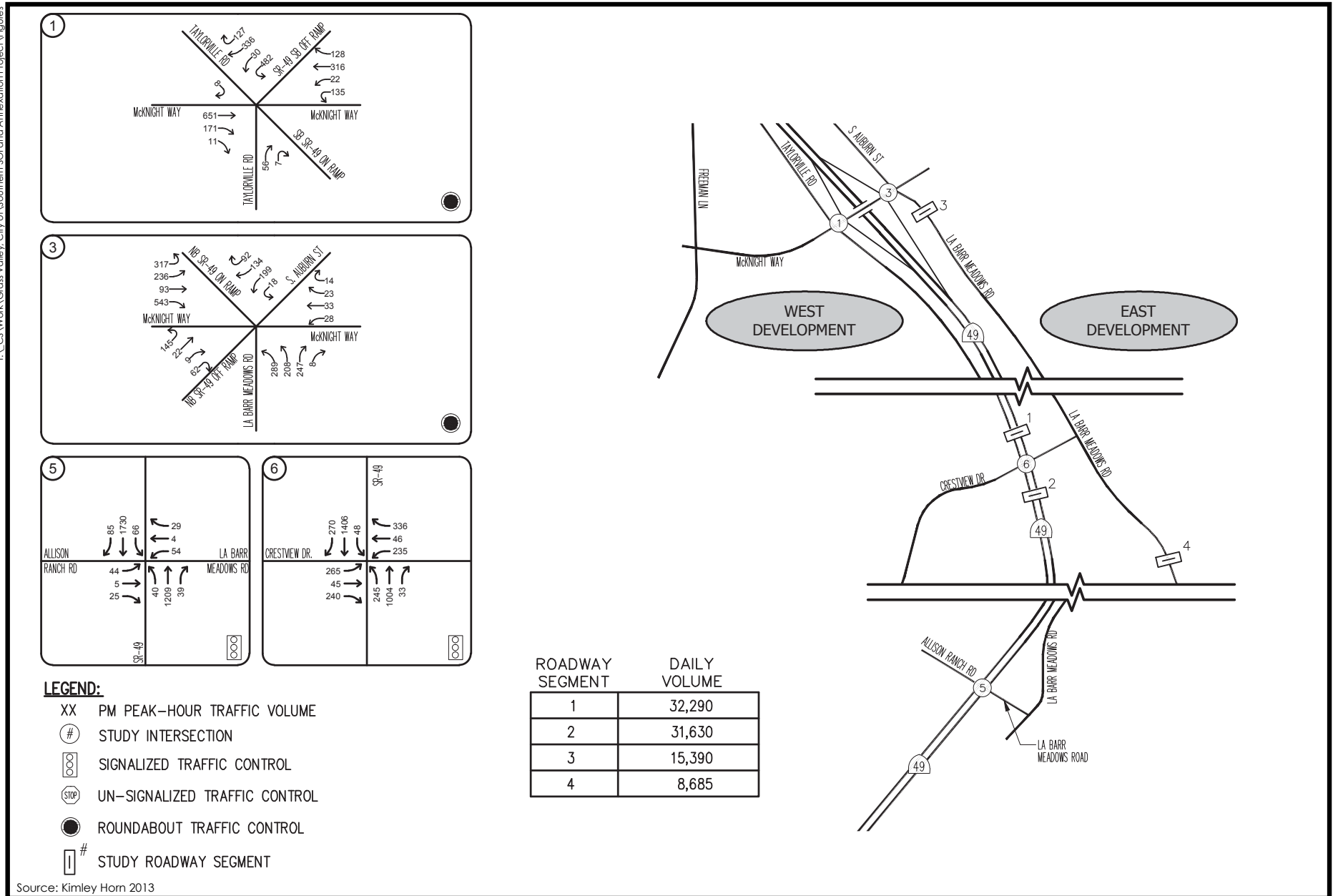
Weekday PM peak-hour turn movement and roadway segment volumes for this analysis scenario are shown in **Figure 3.13-7** and in the Traffic Impact Analysis (**Appendix 3.13-1**).

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Traffic Impacts at Intersections

Impact 3.13.5 When combined with cumulative conditions, future development within the project area could cause an increase in traffic that is substantial in relation to the existing traffic load and carrying capacity of the street system, or may exceed established level of service (LOS) standards at study area intersections. This impact is **less than cumulatively considerable**.

Table 3.13-11 presents the cumulative peak-hour intersection operating conditions for the study intersections, when combined with traffic that could result from full buildout of the project area. As shown in the table, the study intersections would all operate from LOS B to LOS D during the PM peak hour. Therefore, none of the study intersections would operate at unacceptable levels, per the City's traffic standards. This impact is **less than cumulatively considerable**.



Not to Scale



Figure 3.13-7
Cumulative (2035) Plus East and West Development Area Traffic Volumes

TABLE 3.13-11
CUMULATIVE (2035) AND CUMULATIVE (2035) PLUS PROPOSED PROJECT INTERSECTION LEVELS OF SERVICE

#	Intersection	Analysis Scenario ⁺	Traffic Control	PM Peak Hour	
				Delay (seconds)	LOS
1	McKnight Way at Taylorville Road/SR 49 SB Ramps	Cum	Roundabout	15.0	B
		Cum + PP		18.4	C
2	Intersection consolidated with interchange reconfiguration				
3	McKnight Way at SR 49 NB Ramps/S Auburn St/ La Barr Meadows Rd	Cum	Roundabout	13.3	B
		Cum + PP		21.9	C
4	Intersection consolidated with interchange reconfiguration				
5	SR 49 at La Barr Meadows Rd	Cum	Signal	11.5	B
		Cum + PP		13.9	B
6	SR 49 at Crestview Dr	Cum	Not applicable for this scenario		
		Cum+PP	Signal	49.6	D

Source: Kimley Horn 2013

⁺ Cum = Cumulative (2035), Cum + PP = Cumulative (2035) plus Proposed Project

Bold = Substandard per City

Shaded cells indicate significant impact as defined by City.

Mitigation Measures

None required.

Cumulative Traffic Impacts on Roadway Segments (Standards of Significance 1 and 2)

Impact 3.13.6 When combined with cumulative conditions, future development within the project area could cause an increase in traffic that is substantial in relation to the existing traffic load and carrying capacity of the street system, or may exceed established level of service (LOS) standards at study area roadway segments. This impact is **cumulatively considerable**.

As indicated in **Table 3.13-12**, the study roadway segments operate from LOS A to LOS E during the PM peak hour under the cumulative plus project scenario. Unlike the study intersection analysis, full buildout of the project area would result in an unacceptable operating condition of LOS E on La Barr Meadows Road south of McKnight Way. Without full buildout of the project area, this roadway segment would operate at LOS C under the cumulative-only traffic scenario. Therefore, this is a **cumulatively considerable** impact.

3.13 TRANSPORTATION AND CIRCULATION

**TABLE 3.13-12
CUMULATIVE (2035) AND CUMULATIVE (2035) PLUS
PROPOSED PROJECT ROADWAY SEGMENT LEVELS OF SERVICE**

#	Location	Analysis Scenario ⁺	Roadway Type	# Lanes	Daily Volume	LOS
1	SR 49 between McKnight Way and Crestview Dr	Cum	Highway*	2	24,170	A
		Cum + PP			33,290	B
2	SR 49 south of Crestview Dr	Cum	Highway*	2	24,170	A
		Cum + PP			31,630	B
3	La Barr Meadows Rd south of McKnight Way	Cum	Arterial	2	11,800	C
		Cum + PP			15,390	E
4	La Barr Meadows Rd south of project	Cum	Arterial	2	8,295	A
		Cum+PP			8,685	A

Source: Kimley Horn 2013

⁺ Cum = Cumulative (2035), Cum + PP = Cumulative (2035) plus Proposed Project

* Considered as "Interstate & Freeway" classification.

Bold = Substandard per City

Shaded cells indicate significant impact as defined by City

The only possible way to mitigate this impact would be by widening the study roadway segment of La Barr Meadows Road south of McKnight Way from two to four lanes. This improvement would result in LOS A or LOS B. However, this mitigation is infeasible due to the road's proximity to existing buildings and State Route 49. Because full buildout of the project area would trigger this unacceptable condition, the project's contribution is **cumulatively considerable** and **significant and unavoidable**.

Mitigation Measures

No feasible mitigation measures are available.

Cumulative Emergency Access Impacts (Standard of Significance 5)

Impact 3.13.7 Full buildout of the project area, in combination with cumulative development in Grass Valley and the surrounding areas, would not result in inadequate emergency access. This cumulative impact is **less than cumulatively considerable**.

In 2035, La Barr Meadows Road and SR 49 would continue to provide primary emergency access to the project area and surrounding areas. At this time, it is anticipated that the Crestview Drive intersection with SR 49 and McKnight Way would be developed, which would provide additional emergency access. All future development within the project area, as well as all cumulative development within the City, is required to comply with City requirements for emergency access, and development plans would need to be checked and approved by the fire department to ensure adequate emergency access during construction and implementation. Developments within Nevada County would be required to go through a similar plan check process with Nevada County, and due to the proximity to Grass Valley, the City would have the opportunity to cooperate with Nevada County to ensure that adequate emergency access can be provided to the project area and vicinity. Therefore, future

development within the project area, in combination with cumulative development in the project vicinity, is expected to maintain adequate emergency access and access to evacuation routes. This is considered to be a **less than cumulatively considerable** impact.

Mitigation Measures

None required.

Crestview Drive Improvements (Standard of Significance 2)

Impact 3.13.8 Full buildout of the project area could conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. This cumulative impact is **less than cumulatively considerable**.

Although not part of the project, the project would eventually result in the construction of a signalized at-grade intersection on SR 49 near the existing Crestview Drive intersection, and connection to future roadways west of SR 49 and east to La Barr Meadows Road. This will have the benefit of reducing overall traffic impacts at the McKnight Way/SR 49 intersection and interchange. The City and Caltrans have previously discussed the potential for an interchange at the Crestview Drive intersection. While not currently warranted by traffic associated with the proposed project, there is a potential that cumulative development in the City and Nevada County could require an interchange in the future. A significant impact would occur if future development in the project area were allowed to construct buildings near the new Crestview Drive intersection in an area that would preclude future development of an interchange. At this time no development is proposed. **Figure 3.13-8** shows the approximate right-of-way needed to support an interchange at the Crestview Drive intersection. Mitigation measure **MM 3.13.7** ensures that no new development will occur within the area illustrated in **Figure 3.13-8**.

Mitigation Measures

MM 3.13.8 The City of Grass Valley shall establish an alignment and development setback for new development proposed within the area depicted on **Figure 3.13-8** intended for the future Crestview Drive interchange with State Route 49. As part of the setback area, the City will determine the extent of any development that can occur within the interchange setback area.

Timing/Implementation: Prior to approval of development within Crestview Drive intersection within the project area

Enforcement/Monitoring: City of Grass Valley Planning Division and Public Works Department

Implementation of mitigation measure **MM 3.13.8** will ensure that future development is precluded from impeding the development of an interchange with SR 49 at Crestview Drive. While the City cannot guarantee the ability to construct the interchange because it lacks both the funding and the jurisdiction, providing a building setback to ensure that a future interchange could be constructed is wholly within the City's ability. Compliance with this mitigation measure would ensure that impacts to the future Crestview Drive interchange are **less than cumulatively considerable**.

3.13 TRANSPORTATION AND CIRCULATION

REFERENCES

- Caltrans (California Department of Transportation). 2002. *Guide for the Preparation of Traffic Impact Studies*.
- . 2012. Caltrans Traffic and Vehicle Data Systems Unit. <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2011all/index.html>.
- City of Grass Valley. 1999. *City of Grass Valley 2020 General Plan*.
- . 2004. *City of Grass Valley Street System Master Plan*.
- . 2009. *City of Grass Valley Design Standards, Construction Standards, and Standard Details*. Updated 2012.
- ITE (Institute of Transportation Engineers). 2004. *Trip Generation Handbook, Second Edition*.
- . 2012. *Trip Generation, 9th Edition*.
- Kimley Horn and Associates, Inc. 2013. *Traffic Impact Analysis, Southern Sphere of Influence EIR, Grass Valley, California*.
- NCTC (Nevada County Transportation Commission). 2011. *2010 Nevada County Regional Transportation Plan*.
- . 2013. *Nevada County Bicycle Master Plan*. Updated July 2013.
- Transportation Research Board. 2000. *Highway Capacity Manual 2000*.

4.0 PROJECT ALTERNATIVES

The purpose of this section is to identify and describe alternatives to the proposed project. Project alternatives are developed to reduce or eliminate the significant or potentially significant adverse environmental effects identified as a result of the proposed project, while still meeting most if not all of the basic project objectives.

4.1 INTRODUCTION

An environmental impact report (EIR) must evaluate a reasonable range of alternatives to the proposed project or to the location of the proposed project that could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (CEQA Guidelines Section 15126.6). An EIR need not evaluate the environmental effects of alternatives in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project. The California Environmental Quality Act (CEQA) provides the following guidelines for discussing alternatives to a proposed project:

The specific alternative of the "no project" shall also be evaluated along with its impacts....If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. (CEQA Guidelines Section 15126.6, subd.[e] [(2)])

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 proposed objectives, or would be more costly. (CEQA Guidelines Section 15126.6, subd.[b])

If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. (CEQA Guidelines Section 15126.6, subd.[d])

The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice....The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making....An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. (CEQA Guidelines Section 15126.6 subd.[f])

The requirement that an EIR evaluate alternatives to the proposed project or alternatives which address the location of the proposed project is a broad one; the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding, the environmental impacts of the proposed project. Alternatives that are included and evaluated in the EIR must be feasible alternatives. However, the Public Resources Code and the CEQA Guidelines direct that the EIR need "set forth only those alternatives necessary to permit a reasoned choice." The CEQA Guidelines provide a definition for "a range of reasonable alternatives" and thus limit the number and type of alternatives that need to be evaluated in a given EIR. According to the CEQA Guidelines (Section 15126.6[f]):

4.0 PROJECT ALTERNATIVES

The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project.

First and foremost, alternatives in an EIR must be feasible. In the context of CEQA, "feasible" is defined as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

Further, the following factors may be taken into consideration in the assessment of the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control (Section 15126.6[f][1]). Finally, an EIR is not required to analyze alternatives when the effects of the alternative "cannot be reasonably ascertained and whose implementation is remote and speculative (Section 15126.6[f][3]).

The selection of alternatives takes into account the project objectives provided in Section 2.0, Project Description. The project objectives include:

1. Increase the amount of industrially zoned land in the City to provide opportunities for growth in the "primary jobs" sector (industrial/manufacturing sector jobs).
2. Create an urban rather than rural land use development form to the south of the City.
3. Protect existing industrial uses from incompatible land uses. Place compatible land uses and buffers next to existing industry.
4. Preserve the hillsides and habitat corridors in open space and incorporate into the overall land use plan.
5. Address the City's retail leakage by providing opportunities for commercial development that allows residents to shop local and meet their entire range of retail needs.
6. Create opportunities to provide for a full range of jobs to meet the existing and long-term needs of the community.
7. Annex the 120 acres to better position the City to seek infrastructure grants for the extension of the sewer collection system and assist with road improvements, which are tied to job creation.

This allows the City to cluster the existing rural residentially designated lands and increase residential densities to allow for an urban form and sustainable development pattern, allowing for efficient infrastructure and preservation of forestland and views of hillsides.

Equally important to attaining the project objectives is the reduction of some or all significant impacts, particularly those that could not be mitigated to a level below the threshold of significance. The project-specific and cumulative significant and unavoidable impacts of the proposed project, after mitigation, are shown below.

PROJECT-SPECIFIC SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126.6(a) states that an environmental impact report shall describe and analyze a range of reasonable alternatives to a project. These alternatives should feasibly attain most of the basic objectives of the project, while avoiding or substantially lessening one or more of the significant environmental impacts of the project. An EIR need not consider every conceivable alternative to a project, nor is it required to consider alternatives that are infeasible. The discussion of alternatives shall focus on those which are capable of avoiding or substantially lessening any significant effects of the project, even if they impede the attainment of the project objectives to some degree or would be more costly (CEQA Guidelines Section 15126.6[b]). The following are the significant and unavoidable impacts identified for the project:

Air Quality

- Impact 3.2.1** Subsequent land use activities associated with implementation of the proposed project could result in short-term construction emissions that could violate or substantially contribute to a violation of federal and state standards for ozone and coarse and fine particulate matter. This is considered a **significant and unavoidable** impact.
- Impact 3.2.2** Subsequent land use activities associated with implementation of the proposed project could result in long-term operational emissions that could violate or substantially contribute to a violation of federal and state standards for ozone and coarse and fine particulate matter. This is considered a **significant and unavoidable** impact.
- Impact 3.2.6** Long-term operation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development in the Mountain Counties Air Basin, would contribute to cumulative increases in emissions of ozone-precursor pollutants (ROG and NO_x) and PM₁₀ that could contribute to future concentrations of ozone and PM₁₀, for which the region is currently designated nonattainment. This impact would be considered **cumulatively considerable** and **significant and unavoidable**.

Greenhouse Gases

- Impact 3.4.1** Implementation of the proposed project will result in greenhouse gas emissions that would further contribute to significant impacts on the environment. This is considered a **cumulatively considerable** and **significant and unavoidable** impact.

Noise

- Impact 3.9.2** As development in the project area occurs, traffic volumes would increase and result in an increase in traffic noise levels on the local roadway system. This project-generated traffic is expected to increase traffic noise levels by more than 1.5 dB for roadways that already exceed 65 dB. This impact is considered **significant and unavoidable**.
- Impact 3.9.6** The proposed project would contribute to the cumulative traffic noise environment at nearby land uses. The project's contribution to this impact would be **cumulatively considerable** and **significant and unavoidable**.

4.0 PROJECT ALTERNATIVES

Transportation and Circulation

- Impact 3.13.1** Future development in the project area could conflict with plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. This impact is **significant and unavoidable**.
- Impact 3.13.6** When combined with cumulative conditions, future development within the project area could cause an increase in traffic that is substantial in relation to the existing traffic load and carrying capacity of the street system, or may exceed established level of service (LOS) standards at study area roadway segments. This impact is **significant and unavoidable**.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

Consistent with CEQA, primary consideration was given to alternatives that would reduce significant impacts while still meeting most of the project objectives. Those alternatives that would have impacts identical to or more severe than the proposed project, or that would not meet most of the project objectives, were rejected from further consideration.

Alternative Location

The project area is located adjacent to State Route (SR) 49 in an area that is already partially developed and currently envisioned in the City's General Plan to include industrial, commercial, and residential uses adjacent to SR 49. As discussed below, the General Plan land use designations and rezoning districts requested under the proposed project are similar to those under the existing Nevada County General Plan. The proposed project area has been designated and planned for this type of growth since adoption of the General Plan. Based on a review of lands in the City, there are no other sites of sufficient size and similar access that could accommodate all of the uses proposed under the proposed project. While the uses proposed under the project could be accommodated on a number of sites throughout the City, the ability to develop an area equivalent to the proposed project would be infeasible. Consequently, an off-site alternative is not considered in this EIR.

Increased Intensity of Commercial Uses

Because a part of the project includes commercial and employment uses, an alternative that includes an intensification of these uses was briefly considered. The intent of this alternative would be to increase business and employment opportunities and reduce the vehicle miles travelled for residents of the proposed project and immediate vicinity. A reduction in vehicle miles travelled would lessen air quality, greenhouse gas and traffic impacts associated with the proposed project. Intensification of the uses would also expand the draw of the commercial and employment uses and the increased traffic associated with a larger regional draw would likely offset any reduction in impacts gained as a result of the internalization of trips from the more intense uses. Therefore, larger commercial and employment uses would not substantially reduce traffic impacts associated with the project and an increased density alternative was not analyzed.

ALTERNATIVES CONSIDERED IN THIS EIR

As discussed below, the most notable impact associated with the project is related to the capacity of the existing interchange at SR 49 and traffic impacts that would occur until such time as a new interchange is constructed. Therefore, a reduced level of development that could reduce traffic impacts was used as the basis for reduced intensity alternatives. The following alternatives include scenarios intended to reduce the severity of impacts associated with implementation of the proposed project. Impacts that would result from the proposed project include those generally related to the physical area being impacted, or footprint impacts, and those related to the intensity of the project.

- Alternative 1 – No Project
- Alternative 2 – Reduced Commercial Alternative
- Alternative 2 – Reduced Residential Density and Reduced Industrial Alternative

It is assumed that development under each of these alternatives, like the proposed project, would be required to comply with all applicable laws and regulations, which would have the same mitigating effects as for the proposed project.

4.2 ALTERNATIVE 1 – NO PROJECT ALTERNATIVE

Alternative 1 is the No Project Alternative. CEQA Guidelines Section 15126.6(e)(1) states that a no project alternative shall be analyzed. The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. A “No Development Alternative,” which differs from a No Project Alternative, describes an alternative in which no development would occur on the project area and the uses on the project area would remain the same as under existing conditions. Under a No Development Alternative, the project area would continue to be used as it is currently developed, and the site-specific impacts of a No Development Alternative are best described by the existing conditions presented in the environmental setting sections of Section 3.0 of this Draft EIR.

The No Project Alternative analysis is not the baseline for determining whether the environmental impacts of a proposed project may be significant, unless the analysis is identical to the environmental setting analysis that does establish that baseline. In contrast to a No Development Alternative, the No Project Alternative assumes that development could occur in the future based on existing land use and zoning designations for the project area.

CHARACTERISTICS

Under this alternative, the proposed project would not be adopted and no General Plan amendments, rezoning, or annexation would occur. The property would continue to be available for development consistent with the existing Nevada County General Plan land use designations and zoning districts. The Nevada County zoning ordinance provides development standards for future development of the area, so the existing zoning for the project area is used to determine development potential based on existing zoning. The existing Nevada County zoning for the project area includes Business Park (BP), Community Commercial (C2), Light Industrial (M1), Medium Density Residential (R2), and Residential Agriculture (RA). The approximate acreage by zoning district, along with development potential under the existing Nevada County zoning, is shown in **Table 4.0-1**.

4.0 PROJECT ALTERNATIVES

Development potential for residential districts is based on development standards contained in the Nevada County Zoning Regulations: R2 zoning allows up to 6 dwelling units per acre, and RA zoning allows one unit for every 1.5 acres. Although the Nevada County Zoning Regulations include floor area ratio (FAR) standards for C2 (0.33), there are no such standards for BP and M1. Therefore, the same development assumptions used for the proposed project were applied to Nevada County zoning: 0.25 FAR for commercial and business park uses, and 0.15 FAR for industrial uses.

TABLE 4.0-1
EXISTING NEVADA COUNTY ZONING

Zoning	Acres	Potential Square Footage	Potential Residential Units
Business Park (BP)	83	903,870	
Community Commercial (C2)	13	141,570	
Light Industrial (M1)	58	378,972	
Medium Density Residential (R2)	36		216
Residential Agriculture (RA)	226.3		151
	416.3	1,424,412	367

Source: City of Grass Valley 2013

Based on the development potential under existing Nevada County zoning compared to development under the proposed project (see **Table 2.0-2**), the No Project Alternative would result in approximately 779,724 additional square feet of business park, approximately 160,792 square feet less commercial space, and approximately 656,013 square feet less industrial development, 167 fewer residential units, and 117 fewer acres of open space than the proposed project.

COMPARATIVE IMPACTS

The No Project Alternative would result in development in the same area as the proposed project, so the specific location of a particular land use developed under the No Project Alternative would generally not have a different effect than the proposed project in terms of the potential for footprint-related effects (i.e., agriculture, biological resources, cultural resources, geology, hazards, hydrology, and mineral resources). For instance, on any particular site, there is the same potential to encounter biological resources when developing the project area, whether it is for a commercial development or industrial use. Similarly, the same site-specific constraints, such as those related to geology, hazards, or hydrology, would have to be considered and mitigated whether a residential or nonresidential use is developed. While these impacts would generally be considered the same, irrespective of land use, as noted above, the proposed project includes 117 acres of open space. Therefore, the No Project Alternative would have the potential to impact 117 more acres than the proposed project, so its impacts would be somewhat more severe.

With regard to aesthetic impacts, because the intensity, type, and location of development under the proposed project and the No Project Alternative would be similar, there would not be a substantial difference in the aesthetics effects.

Construction-related air emissions were found to be significant and unavoidable for the proposed project. Because the No Project Alternative would result in a similar amount of development, the construction emissions would be similar and also significant and unavoidable.

An increased number of vehicle trips on local roads resulting in level of service that exceeds standards was found to be a significant impact for the project. As discussed above, the No Project Alternative would result in fewer residential units, and slightly less nonresidential uses, compared to the proposed project. However, the existing zoning allows for substantially more business park use, which has a higher trip generation per square foot than industrial uses. Consequently, as shown in **Table 4.0-2**, the No Project Alternative would result in approximately 22,552 daily trips, which is slightly higher than the proposed project, which was estimated to generate approximately 21,739 daily trips. Therefore, the impact would be slightly more severe than the proposed project. Similarly, the operational air quality and greenhouse gas emissions associated with those vehicle trips would be slightly more severe than that of the proposed project.

TABLE 4.0-2
TRAFFIC GENERATION, NO PROJECT ALTERNATIVE

Zoning	Acres	Potential Square Footage	Potential Residential Units	No Alternative ADT
Business Park (BP)	83	903,870		10,322
Community Commercial (C2)	13	141,570		6,045
Light Industrial (M1)	58	378,972		2,588
Medium Density Residential (R2)	36		216	2,056
Residential Agriculture (RA)	226.3		151	1,510
	416.3	1,424,412	367	22,522

The No Project Alternative would generate more vehicle trips than the proposed project, but it is assumed that noise impacts would not substantially change from that under the proposed project. Noise impacts under the No Project Alternative would be similar and would be less than significant.

The proposed project would not result in significant land use or population impacts. The No Project Alternative would not result in any land use changes, so the impact would also be less than significant. The No Project Alternative would result in 167 fewer residential units, but it would not displace any housing or result in the need for housing elsewhere, so this is also a less than significant impact.

The No Project Alternative would result in increased demand for public services and utilities. Although development associated with the No Project Alternative would be under the jurisdiction of Nevada County, and thus different service providers would serve the development, as discussed in the technical sections of this Draft EIR, the resources are available to serve the project area. Because the project area is planned for development in the Nevada County General Plan, it is assumed that Nevada County service providers can adequately serve the project area under the No Project Alternative. The impact would be similar to the proposed project.

4.0 PROJECT ALTERNATIVES

No Project Alternative Summary

While the No Project Alternative would result in similar impacts related to aesthetics, agricultural resources, land use, population, public services, and utilities, it would result in more severe footprint impacts because the proposed project includes 117 acres of open space. The increased amount of business park use in the No Project Alternative would also generate more traffic than the proposed project, which would also contribute to more severe air quality and greenhouse gas impacts. Because the No Project Alternative would result in development of the project area in Nevada County jurisdiction, it would not achieve the goals of the project to develop the project area within Grass Valley.

4.3 ALTERNATIVE 2 – REDUCED COMMERCIAL ALTERNATIVE

CHARACTERISTICS

Under this alternative, the allowable retail commercial area would be reduced from approximately 300,000 square feet to 200,000 square feet. The intent of the reduction is to reduce traffic associated with retail uses and to evaluate a project that is more consistent with the findings in the Glenbrook Basin Redevelopment Infill Study prepared for the City in 2010. A reduction in retail uses would result in fewer vehicle trips and less impact to air quality, greenhouse gas emissions and traffic. Assuming trip generation of 42.7 trips per 1,000 square feet of commercial uses, the Reduced Commercial Alternative would result in a reduction of 4,270 daily trips compared to the proposed project's 23,671 daily trips, a reduction of approximately 20 percent. The remainder of the project area would be developed in a fashion and density identical to that of the proposed project.

COMPARATIVE IMPACTS

The Reduced Commercial Alternative would result in development in the same area as the proposed project, so the specific location of a particular land use developed under the Reduced Commercial Alternative would have similar effects as the proposed project in terms of the potential for footprint-related effects (i.e., agriculture, biological resources, cultural resources, geology, hazards, hydrology, and mineral resources). If the commercial area were to develop on an area proportionate to the reduced commercial square footage (e.g., develop only two-thirds of the area proposed for commercial under the proposed project, or approximately 18.5 acres), this alternative would develop approximately 9.5 fewer acres for commercial use. This would be a less severe impact than the proposed project.

The Reduced Commercial Alternative would result in development of less land than the proposed project, so the overall aesthetic impacts would be slightly less than that of the proposed project.

With a reduction in square footage developed under this alternative, there would be less ground disturbance and a reduction in emissions from vehicles associated with construction. Therefore, significant and unavoidable construction-related air emissions would be less severe than the proposed project, though they would also be significant for the Reduced Commercial Alternative, like the proposed project.

The 100,000-square-foot reduction in commercial square footage under the Reduced Commercial Alternative would result in a proportional reduction in vehicle trips compared to the proposed project, a decrease of one-third. While this would be a substantial reduction

compared to project trips, mitigation identified for the project would likely still be required to ensure traffic impacts can be reduced. This impact would also be significant and unavoidable.

Because the Reduced Commercial Alternative would result in less trip generation than the proposed project, the operational air quality and greenhouse gas emissions associated with those vehicle trips would be less severe than that of the proposed project. However, like the proposed project, these impacts would be significant and unavoidable.

The Reduced Commercial Alternative would generate fewer vehicle trips than the proposed project, so there would be a reduction in vehicle-generated noise. While the difference in noise generated by this alternative may not be distinguishable by the human ear, noise impacts would be less severe than for the proposed project and would also be less than significant.

The proposed project would not result in significant land use or population impacts. The Reduced Commercial Alternative would be the same as the proposed project with the exception of the amount of commercial development. The land use impacts would be the same as the proposed project. The Reduced Commercial Alternative would result in the same number of residential units, and it would not displace housing or result in the need for housing elsewhere, so this is also a less than significant impact.

The Reduced Commercial Alternative would result in reduced demand for public services and utilities due to the reduction in commercial development. Impacts related to services and utilities were found to be less than significant for the proposed project. Because the Reduced Commercial Alternative would result in less demand, the impact would also be less than significant and would be less severe than the proposed project.

Reduced Commercial Alternative Summary

The Reduced Commercial Alternative would result in less severe impacts than the proposed project due to a slight reduction in developed acreage and a reduction in overall operational impacts due to decreased intensity of use in the area compared to the proposed project. The Reduced Commercial Alternative would be able to achieve the objectives of the project.

4.4 ALTERNATIVE 3 – REDUCED RESIDENTIAL DENSITY AND REDUCED INDUSTRIAL ALTERNATIVE

CHARACTERISTICS

Under the Reduced Residential Density and Reduced Industrial Alternative, the 57.6 acres of Two-Family Residential (R-2) would be rezoned for Single Family Residential (R-1). R-2 zoning allows for up to 8 units per acre, whereas R-1 zoning allows 4 units per acre. The result of this change in zoning would be a reduction in residential potential of 230 units, for a total residential potential of 304 units. In addition, this alternative includes a reduction in the amount of General Industrial (M-2). This change results in a reduction of approximately 100,000 square feet of industrial use and would allow approximately 16.5 acres of additional open space on land assumed for development of industrial uses in the proposed project. The reduction in residential and industrial development is intended to reduce the overall vehicle trip generation from the proposed project, which would include a reduction in truck traffic associated with the industrial use. Assuming a reduction of 230 residential units at 9.52 daily trips per unit, this alternative would result in 2,190 fewer daily trips from residential uses and 163 fewer daily industrial trips, assuming 1.5 daily trips per 1,000 square feet.

4.0 PROJECT ALTERNATIVES

COMPARATIVE IMPACTS

The Reduced Residential Density and Reduced Industrial Alternative would reduce the footprint compared to the proposed project by approximately 16.5 acres. Consequently, this alternative would result in a reduction in footprint effects compared to the proposed project. This would be a less severe impact than the proposed project.

Like the Reduced Commercial Alternative, although the Reduced Residential Density and Reduced Industrial Alternative would result in development of less land than the proposed project, the overall aesthetic impacts may not be discernable from that of the proposed project, but because there would be less industrial development and more open space, this alternative's impact would be slightly less than the proposed project.

With a reduction in homes and industrial square footage developed under this alternative, there would be less ground disturbance and a reduction in emissions from vehicles associated with construction. Therefore, significant and unavoidable construction-related air emissions would be less severe than the proposed project, though they would also be significant for the Reduced Residential Density and Reduced Industrial Alternative, like the proposed project.

The reduction of 230 residential units and approximately 100,000 square feet of industrial use under the Reduced Residential Density and Reduced Industrial Alternative would result in a reduction in daily vehicle trips compared to the proposed project. While this would be a substantial reduction compared to project trips, mitigation identified for the project would likely still be required to ensure traffic impacts can be reduced. This impact would also be significant and unavoidable.

Because the Reduced Residential Density and Reduced Industrial Alternative would result in less trip generation than the proposed project, including truck trips, the operational air quality and greenhouse gas emissions associated with those vehicle trips would be less severe than that of the proposed project. However, like the proposed project, these impacts would be significant and unavoidable.

The Reduced Residential Density and Reduced Industrial Alternative would generate fewer vehicle trips than the proposed project, including truck trips, so there would be a reduction in vehicle-generated noise. While the difference in noise generated by this alternative may not be distinguishable by the human ear, noise impacts would be less severe than for the proposed project and would also be less than significant.

The proposed project would not result in significant land use or population impacts. The Reduced Residential Density and Reduced Industrial Alternative would alter the residential density to include only R-1; however, this would not result in any land use impacts. In addition, the reduction in the amount of industrial development would not result in any land use impacts, so the land use impacts would be the same as with the proposed project. The Reduced Residential Density and Reduced Industrial Alternative would result in 230 fewer residential units. However, it would not displace housing or result in the need for housing elsewhere, so this is also a less than significant impact.

The Reduced Residential Density and Reduced Industrial Alternative would result in reduced demand for public services and utilities due to the reduction in residential and industrial development. Impacts related to services and utilities were found to be less than significant for the proposed project. Because the Reduced Residential Density and Reduced Industrial

Alternative would result in less demand, the impact would also be less than significant and would be less severe than the proposed project.

Reduced Residential Density and Reduced Industrial Alternative Summary

The Reduced Residential Density and Reduced Industrial Alternative would result in less severe impacts than the proposed project due to a reduction in developed acreage and a reduction in overall operational impacts due to the decreased intensity of use in the area compared to the project. The Reduced Residential Density and Reduced Industrial Alternative would be able to achieve the objectives of the project.

4.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table 4.0-3 provides a summary of the potential impacts of the alternatives evaluated in this section, as compared with the potential impacts of the proposed project. The Reduced Commercial Alternative (Alternative 2) and the Reduced Residential Density and Reduced Industrial Alternative (Alternative 3) would result in less severe impacts in each of the issue areas as compared to the proposed project. Both alternatives would result in a reduction in the amount of development compared with proposed project and a reduced footprint, and both would generate fewer vehicle trips than the proposed project. However, the Reduced Commercial Alternative is considered to be the environmentally superior alternative. The Reduced Commercial Alternative would result in a greater reduction in vehicle trips, which would improve roadway level of service compared to the project and would have a corresponding decrease in criteria pollutant emissions as well as greenhouse gas emissions.

**TABLE 4.0-3
COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT**

Issue Area	Proposed Project	No Project Alternative	Reduced Commercial Alternative	Reduced Residential/Industrial Alternative
Aesthetics and Visual Resources	LS	Similar	Reduced	Reduced
Air Quality	SU	Greater	Reduced	Reduced
Biological Resources	LS	Greater	Reduced	Reduced
Climate Change and Greenhouse Gases	SU	Greater	Reduced	Reduced
Cultural and Paleontological Resources	LS	Greater	Reduced	Reduced
Geology, Soils, and Mineral Resources	LS	Greater	Reduced	Reduced
Hazards and Hazardous Materials	LS	Greater	Reduced	Reduced
Land Use, Agricultural and Forest Resources	LS	Similar	Reduced	Reduced
Noise	LS	Greater	Reduced	Reduced
Public Services	LS	Similar	Reduced	Reduced

4.0 PROJECT ALTERNATIVES

Issue Area	Proposed Project	No Project Alternative	Reduced Commercial Alternative	Reduced Residential/ Industrial Alternative
Public Utilities	LS	Similar	Reduced	Reduced
Transportation and Circulation	SU	Greater	Reduced	Reduced

Notes:

SU = Significant and Unavoidable – if any impact was identified as significant and unavoidable in the technical analysis.

LS = Less than Significant – if all impacts were identified as less than significant in the technical analysis.

NI = No impact would occur when compared to the proposed project.

Similar = Level of significance is equal or similar to the proposed project.

Greater = Level of significance is greater than the proposed project.

Reduced = Level of significance is reduced compared to the proposed project, but not necessarily to a less than significant level.

5.0 OTHER CEQA REQUIREMENTS

This section discusses additional topics statutorily required by the California Environmental Quality Act (CEQA) for inclusion in environmental impact reports. The topics discussed include growth-inducing impacts, significant irreversible environmental effects, and significant and unavoidable environmental impacts.

5.1 CUMULATIVE IMPACTS

CEQA requires that an environmental impact report (EIR) contain an assessment of the cumulative impacts that could be associated with the proposed project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (as defined by Section 15130). As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR, together with other projects causing related impacts. A cumulative impact occurs from:

...the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In addition, Section 15130(b) identifies that the following three elements are necessary for an adequate cumulative analysis:

- 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. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.*
- 4) *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; and*
- 5) *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.*

Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but is to briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

This EIR utilizes the "general plan" approach in the cumulative analysis.

5.0 OTHER CEQA CONSIDERATIONS

CUMULATIVE SETTING

A general description of the cumulative setting for each issue area is provided in each technical section (Sections 3.1 through 3.13). It is recognized that many resources and environmental topics do not share the same cumulative setting due to the nature of the issues. For example, the streets and intersections in the project vicinity that may be impacted constitute a different area of potential impact than the groundwater basin that might be considered concerning cumulative impacts on water supply. Furthermore, as the name implies, global climate change is a global issue and it may be construed that the cumulative setting is the whole world. Whereas greenhouse gases (GHGs) may be considered as global pollutants, criteria air pollutants and toxic air contaminants are primarily pollutants of regional and local concern, respectively.

Therefore, each environmental issue evaluated in this EIR identifies its own particular cumulative setting. For the purposes of this EIR, buildout of the City of Grass Valley's 2020 General Plan and the projects and improvements anticipated in that document are used for the analysis of most of the sections, unless a particular issue area warrants a different context for the analysis of cumulative impacts. Most of the cumulative settings also include potential projects in Nevada County, since portions of the project area would remain under the jurisdiction of Nevada County until they are eventually annexed to the City of Grass Valley and because the project area will remain adjacent to unincorporated Nevada County lands.

CUMULATIVE IMPACT ANALYSIS

Cumulative impacts are addressed in Sections 3.1 through 3.13 of this EIR. Below is a brief description of the potential cumulative impacts. See the appropriate section for a specific cumulative analysis of each issue area.

3.1 Aesthetics and Visual Resources

Section 3.1 addressed how future development within the project area could affect the cumulative conversion of undeveloped land to developed land and how that could affect scenic resources. The analysis also looked at the potential for cumulative effects associated with daytime glare and nighttime lighting. The analysis determined that future development within the project area would result in **less than cumulatively considerable** impacts on scenic resources and daytime glare and nighttime lighting because existing policies and ordinances regulating design will apply to all future projects.

3.2 Air Quality

Cumulative air quality impacts were analyzed in the context of the Mountain Counties Air Basin. As stated in Section 3.2, the region is currently in nonattainment for emissions of ozone precursors (ROG and NO_x) and PM₁₀. The analysis determined that the project, in combination with foreseeable development in the Mountain Counties Air Basin, would contribute to future concentrations of ozone and PM₁₀. The project's short-term construction emissions and operational emissions would exceed significance thresholds; the condition would worsen when combined with other foreseeable development in the region. Therefore, the analysis determined that the project would have a **cumulatively considerable** contribution to the significant impact. In addition, there is no mitigation available to reduce this impact, so the cumulative impact is **significant and unavoidable**.

3.3 Biological Resources

Section 3.3 analyzed how future development within the project area, in combination with other cumulative development in the region, could potentially result in mortality and loss of habitat for special-status species, wetlands, and waters of the United States. The analysis determined that the impact of future development within the project area would be **less than cumulatively considerable** after the required implementation of mitigation measures **MM 3.3.1** through **MM 3.3.7**.

3.4 Climate Change and Greenhouse Gases

As stated in Section 3.4, climate change is a cumulative issue. Therefore, the analysis contained in this section is more cumulative in nature and focuses on whether or not the project's contribution to adverse impacts associated with climate change would be considerable. The analysis determined that future development associated with maximum buildout of the project area would result in greenhouse gas emissions at a cumulatively considerable level. Mitigation measure **MM 3.4.1** would require that future developments within the project area prepare Greenhouse Gas Reduction Plans, which would help to reduce the potential for greenhouse gas emissions from the project area. However, because most of the expected greenhouse gas emissions generated by future development within the project area would be from mobile sources, reduction of these emissions would be beyond the regulatory authority of the City, and the impact would therefore be **cumulatively considerable** and **significant and unavoidable**.

3.5 Cultural and Paleontological Resources

Section 3.5 addressed cumulative impacts associated with undiscovered prehistoric and historic resources and human remains, as well as paleontological resources. The cumulative analysis determined that the possible cumulative impact of future development within the project area, in combination with other cumulative development in the region, on prehistoric resources, historic resources, human remains, and paleontological resources would result in a potentially significant cumulative impact. However, implementation of mitigation measures **MM 3.5.1a** through **MM 3.5.1e** and **MM 3.5.2** would mitigate the proposed project's contribution to the potential cumulative impacts, and this cumulative impact would therefore be **less than cumulatively considerable**.

3.6 Geology, Soils, and Mineral Resources

Section 3.6 pointed out that geotechnical impacts in many cases are site-specific in nature. The analysis stated that annexation of and future development within the project area would not be likely to expose structures and people to substantial adverse cumulative impacts associated with rupture of a fault, strong seismic ground shaking, seismic-related ground failure, or landslides. This impact was determined to be **less than cumulatively considerable**.

This section also looked at cumulative impacts on mineral resources and determined that implementation and future development of the proposed project would not result in loss of access to mineral resources. This impact was determined to be **less than cumulatively considerable**.

3.7 Hazards and Hazardous Materials

The hazards and hazardous materials analysis found in Section 3.7 of this EIR evaluated whether future development within the project area would contribute to a cumulative increase in the

5.0 OTHER CEQA CONSIDERATIONS

transport, handling, use, and disposal of hazardous materials in the region and determined that with required regulations providing controls and oversight, this impact would be **less than cumulatively considerable**.

Section 3.7 also analyzed the potential for development on lands within the project area that are known to be past release sites of hazardous materials. Implementation of mitigation measures **MM 3.7.2a** through **MM 3.7.2c** would ensure that areas within the project area are fully remediated prior to any possible future development activities. This impact was determined to be **less than cumulatively considerable**.

3.8 Hydrology and Water Quality

Section 3.8 looked at cumulative hydrology and water quality impacts within the Wolf Creek watershed and the Grass Valley Sphere of Influence (SOI). The analysis determined that construction and operation of future development within the project area could degrade long-term water quality, but with implementation of City standards for stormwater management practices and erosion control measures for each future development project within the SOI, cumulative impacts on water quality would be controlled and mitigated, making this impact **less than cumulatively considerable**.

Section 3.8 also looked at the potential for cumulative flooding impacts. The analysis determined that the City's Storm Drain Master Plan would ensure future developments would individually mitigate impacts on the City's storm drainage system by requiring that each future development detain stormwater flows on-site and that runoff rates do not exceed existing site conditions. The analysis determined that with implementation of City policies and standards regarding stormwater detention and flow rates, cumulative impacts would be **less than cumulatively considerable**.

3.9 Noise

The noise section (Section 3.9) evaluated the potential for cumulative impacts associated with traffic noise and exposure of sensitive receptors to excessive stationary noise levels that could occur as a result of maximum buildout of the project area. Impact 3.9.6 determined that future traffic levels on State Route (SR) 49 were expected to exceed 70 dB, which would exceed City standards and create a significant cumulative impact without any development in the project area. Development within the project area would increase traffic on SR 49 by approximately 40 percent between McKnight Way and Crestview Drive, which would result in increased traffic noise and therefore be considered a **cumulatively considerable** contribution to the significant impact. General Plan Policy 4-NI would require that noise analyses be prepared for future development throughout the City, but existing sensitive receptors would be exposed to increased noise levels from increased traffic. The cumulative impact was determined to be **significant and unavoidable**.

Impact 3.9.7 analyzed the potential for operation of the proposed project to contribute to the noise and vibration environment of nearby land uses. The analysis states that the proposed project does not propose any noise-sensitive land uses near any existing stationary noise sources. The proposed project would reduce the potential for noise conflicts by shifting lands designated for future residential development from the area east of SR 49 adjacent to existing industrial land uses and clustering new residential areas in the area west of SR 49. The western portion of the project area would place residential designated lands adjacent to vacant industrial land, which could be developed with stationary noise sources in the future. However, General Plan policies and the subdivision and development review process would ensure that specific development

proposals would undergo noise and vibration analysis, which would allow possible adverse noise impacts to be corrected. The analysis determined that the cumulative impact associated with the potential exposure of sensitive receptors to noise and vibration is **less than cumulatively considerable**.

3.10 Land Use, Agricultural and Forest Resources

Section 3.10 determined that the proposed project would not result in any significant increase in land use incompatibilities, and the impact would be less than cumulatively considerable. The section also determined that the project would not result in the cumulative loss of agricultural or forest land, in part because the project would result in the designation of 116 acres of open space, which would add to the region's open space areas. There would be **no impact**.

The project area also does not contain any designated important farmland, so implementation of the project would not contribute to the cumulative loss of important farmland, and there would be **no impact**.

Similarly, the project area is planned as an area for future urban growth, and there are no commercialized or intensive timber production areas within or immediately surrounding the project area. This impact is **less than cumulatively considerable**.

3.11 Public Services

Section 3.11 determined that cumulative development in the City and Sphere of Influence would result in increased demand for all public services. Future development areas, including the project area, were considered in the City's General Plan, so development of Grass Valley's growth areas has been anticipated. Each future development would be guided by the General Plan, Development Code, and other applicable planning and policy documents, which would help to ensure that future growth is orderly and that adequate service can be provided. In addition, all future development would result in contribution to annual service revenues, which would help to offset increased demand for public service. The City's 2011 Sphere of Influence Plan confirms that the City is able to provide and meet public service needs for projected growth and that existing and planned police and fire facilities are adequate to meet demands, so no new facilities would be required to meet cumulative needs. The proposed project's impact was determined to be **less than cumulatively considerable**.

3.12 Public Utilities

As shown in the City's General Plan, the City has proposed areas for urban development throughout its Sphere of Influence. Future development within the City will be guided by the City General Plan, Development Code, and other associated planning and policy documents. Each project will be subject to the City's planning and environmental review processes. As part of the planning and environmental process, the payment of appropriate fees by all development projects would be required to mitigate any impacts on public utilities and minimize cumulative impacts on a project-by-project basis. The City Public Works Department, Nevada Irrigation District, Waste Management, PG&E, and other utility providers will be involved in the development review process for all projects in the City and would continue to provide input into the review of new projects to ensure they comply with all federal, state, and local regulations and ordinances protecting utility services, including complying with all water conservation measures and solid waste reduction measures implemented by the City or state. As explained in Section 3.12, the City and the NID can provide and meet the public wastewater and water

5.0 OTHER CEQA CONSIDERATIONS

needs, respectively, of the anticipated growth in the City. Therefore, the cumulative public utility impacts would be considered **less than cumulatively considerable**.

3.13 Transportation and Circulation

The cumulative analysis of transportation and circulation in Section 3.13 was based on the Traffic Impact Analysis prepared by a traffic consultant. The cumulative analysis was based on the City's travel demand model, which was used to determine future traffic conditions within the City's SOI in 2035. The cumulative analysis also assumed that the future Crestview Drive improvements would be in place, since it is assumed by the City's traffic model. Impact 3.13.5 determined that all of the study intersections would operate at acceptable levels of service (LOS) under cumulative plus project conditions, so this impact was determined to be **less than cumulatively considerable**.

However, Impact 3.13.6 determined that full buildout of the project area would result in an unacceptable operating condition of LOS E on La Barr Meadows Road south of McKnight Way. Without development within the project area, under the cumulative-only traffic scenario, this roadway segment would operate at LOS C. Therefore, the project would result in a significant cumulative impact along this roadway segment. The only way to mitigate the impact would be to widen the study roadway from two to four lanes, which is infeasible due to the road's proximity to existing buildings and SR 49. Therefore, this impact was determined to be **cumulatively considerable and significant and unavoidable**.

The cumulative traffic analysis also looks at the potential for future development within the project area, along with other cumulative development, to trigger the need for improvements at Crestview Drive. The cumulative analysis determined that a significant cumulative impact would occur if future development associated with the proposed project would result in the construction of buildings near the Crestview Drive intersection that would preclude the future development of an interchange at that location. Mitigation measure **MM 3.13.8** would establish an alignment and development setback for future development within the project area that would ensure that future improvements to Crestview Drive at SR 49 could be built. Compliance with mitigation measure **MM 3.13.8** ensures that the impact would be **less than cumulatively considerable**.

5.2 GROWTH-INDUCING IMPACTS

CEQA Guidelines Section 15126.2(d) requires that an environmental impact report (EIR) evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

...the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth...It must not be assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

The EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth. Under CEQA, this growth is not to be considered necessarily detrimental, beneficial, or of

significant consequence. Induced growth would be considered a significant impact if it can be demonstrated that the potential growth, directly or indirectly, significantly affects the environment. A project would have growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, a project would induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project that provides an increased water supply in an area where water service historically limited growth could also be considered growth inducing.

The CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide land use development patterns and growth policies that allow the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service. A project that would induce "disorderly" growth (conflict with local land use plans) could indirectly cause additional adverse environmental impacts and other public service impacts. Thus, to assess whether a growth-inducing project would result in adverse secondary effects, it is important to assess the degree to which the growth accommodated by a project would or would not be consistent with applicable land use plans.

COMPONENTS OF GROWTH

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 nonresidential 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.

GROWTH INDUCEMENT POTENTIAL

The City of Grass Valley's 2020 General Plan explicitly recognizes that growth and development are inevitable. It further emphasizes the fact the General Plan is structured to achieve development in order to foster economic development. Though it also notes the need to balance this economic development with protection of the environment and character of Grass Valley, it nevertheless places a strong emphasis on accommodating and expecting growth in the City's Sphere of Influence. As it pertains to the project area, both the City and Nevada County General Plans plan this area for, and include land use designations that create, an urban development land use pattern. The entire project area is within the City's Sphere of Influence (SOI). The SOI represents the area the City anticipates annexing in order to meet the long-term economic, environmental, and social needs of the community. As noted in the project description and in the project objectives, the proposed land use changes will result in a more efficient and sustainable urban land use form, will create over 116 acres of open space in the most environmentally sensitive areas in the project area, and will address the need to accommodate job opportunities in the region. Therefore, this project will continue the planned

5.0 OTHER CEQA CONSIDERATIONS

urban development for the area and will result in a more efficient land use pattern since it will reduce urban sprawl and the suburban land use form that can currently take place under the existing General Plans.

As described in Section 2.0, Project Description, the project proposes a mix of residential, commercial, industrial, business park, and open space land use designations. At buildout, the proposed project could result in the development of up to 534 housing units, as well as commercial, industrial, and business park buildings that could total as much as approximately 1,460,893 square feet. The related population growth associated with the residential uses would be approximately 1,073 people. Projected development under the current Nevada County and City General Plans would result in similar nonresidential acreages, which would rely on similar floor area ratios, and approximately 150 less housing units. Therefore, future development in the project area is not expected to indirectly induce growth in areas not currently planned for growth.

Development of the project would result in the alteration of the project area from that of limited development and vacant lands to an urban development form. As development occurs in the project area, there will be a corresponding need for the extension and expansion of infrastructure facilities (such as water and wastewater), as well as the expansion of public services and roadways into currently undeveloped portions of the project area. The extension and sizing of the infrastructure will be based on the needs to serve the development within the SOI, so it will not be sized to induce future growth.

GROWTH EFFECTS OF THE PROJECT

The project area is within the Sphere of Influence for the City of Grass Valley, and the 120 acres proposed for annexation are within the near-term annexation time horizon. Most of the remaining properties not proposed for annexation as part of this project are also within the near-term annexation time horizon. Eventually, the remaining project areas are anticipated to also be annexed to the City. As noted previously, the project area has been planned for urban development by both the City and Nevada County. Both the City and Nevada County General Plans currently show much of the project area planned for industrial, business park, commercial, and a mix of residential land uses. This plan adjusts that land use mix, but would not directly support or stimulate growth in an area that is not already planned for growth in the City of Grass Valley and Nevada County General Plans. As identified in the City's General Plan, this area is designated for future and anticipated growth. This EIR provides an evaluation of environmental effects of that planned growth.

The City of Grass Valley General Plan Land Use Element designates land areas (in addition to the project area) outside of the City's SOI for future development, designated as the Planning Area. The City's intent for creating the Planning Area in its 1999 General Plan update was to consider other lands outside the existing SOI since they could affect, or be affected by, future City actions. Environmental effects of growth on adjacent properties would be similar to the proposed project, which includes impacts associated with transportation and circulation, noise, air quality, hydrology and water quality, hazards and hazardous waste, community services, utilities and service systems, cultural resources, biological resources, land use, and visual resources.

In conclusion, and consistent with the growth-inducing findings from the 2020 General Plan EIR, the proposed project proactively implements the General Plan by amending it to address the community's job and economic needs and does so by regulating growth to achieve the desired benefits as noted in the project objectives. The project preserves open space, which the current

General Plans do not, and it balances the growth potential in a consistent manner as envisioned in the City's General Plan. The project would create opportunities for the private sector to create jobs for local residents and to foster economic development by providing for a range of commercial, business park and industrial businesses needed both now and into the future. This project is expected to remove obstacles to growth in the project area by expanding the necessary infrastructure into the project area; however, no growth-related impacts beyond those noted in Sections 3.1 through 3.13 of this EIR are anticipated.

5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS

CEQA Sections 21100(b)(2) and 21100.1(a) require that EIRs prepared for the adoption of a plan, policy, or ordinance of a public agency must include a discussion of significant irreversible environmental changes of project implementation. In addition, CEQA Guidelines Section 15126.2(c) describes irreversible environmental changes as:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Implementation of the proposed project would result in the conversion of undeveloped land to commercial, industrial, business park, and residential uses. Once land is annexed, it is expected that some of the developed properties will redevelop or expand once infrastructure facilities become available. Future development in the project area would constitute a long-term commitment to urban land uses. Once developed for urban uses, it is unlikely that circumstances would arise that would justify the return of the land to its original condition.

Development of the project would also irretrievably commit building materials and energy to the construction and maintenance of buildings and infrastructure. Nonrenewable and limited resources that would likely be consumed as part of project area development would include, but are not limited to, oil, gasoline, lumber, sand and gravel, asphalt, water, steel, and similar materials. In addition, development of the project would result in increased demand on public services and utilities (see Section 3.11, Public Services, and Section 3.12, Public Utilities).

5.4 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. In addition, Section 15093(a) of the CEQA Guidelines allows the decision-making agency to determine that the benefits of a proposed project outweigh the unavoidable adverse environmental impacts of implementing the project. The City of Grass Valley can approve a project with unavoidable adverse impacts if it prepares a Statement of Overriding Considerations setting forth the specific reasons for making such a judgment.

The EIR identifies the project as having the following impacts that cannot be reduced to a less than significant level through mitigation measures applied to the project. The detail of each impact, and an explanation of why mitigation is unable to reduce the impact to a less than significant level, is discussed in Sections 3.1 through 3.13 of this EIR.

5.0 OTHER CEQA CONSIDERATIONS

- Impact 3.2.1** Subsequent land use activities associated with implementation of the proposed project could result in short-term construction emissions that could violate or substantially contribute to a violation of federal and state standards for ozone and coarse and fine particulate matter. This is considered a **significant and unavoidable** impact.
- Impact 3.2.2** Subsequent land use activities associated with implementation of the proposed project could result in long-term operational emissions that could violate or substantially contribute to a violation of federal and state standards for ozone and coarse and fine particulate matter. This is considered a **significant and unavoidable** impact.
- Impact 3.2.6** Long-term operation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development in the Mountain Counties Air Basin, would contribute to cumulative increases in emissions of ozone-precursor pollutants (ROG and NO_x) and PM₁₀ that could contribute to future concentrations of ozone and PM₁₀, for which the region is currently designated nonattainment. This impact would be considered **cumulatively considerable** and **significant and unavoidable**.
- Impact 3.4.1** Implementation of the proposed project will result in greenhouse gas emissions that would further contribute to significant impacts on the environment. This is considered a **cumulatively considerable** and **significant and unavoidable** impact.
- Impact 3.9.2** As development in the project area occurs, traffic volumes would increase and result in an increase in traffic noise levels on the local roadway system. This project-generated traffic is expected to increase traffic noise levels by more than 1.5 dB for roadways that already exceed 65 dB. This impact is considered **potentially significant** and is **significant and unavoidable**.
- Impact 3.9.6** The proposed project would contribute to the cumulative traffic noise environment at nearby land uses. The project's contribution to this impact would be **cumulatively considerable** and **significant and unavoidable**.
- Impact 3.13.1** Future development in the project area could conflict with plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. This impact is **significant and unavoidable**.
- Impact 3.13.6** When combined with cumulative conditions, future development within the project area could cause an increase in traffic that is substantial in relation to the existing traffic load and carrying capacity of the street system, or may exceed established level of service (LOS) standards at study area roadway segments. This impact is **cumulatively considerable** and **significant and unavoidable**.

REFERENCES

DOF (California Department of Finance). 2008. *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001–2008, with 2000 Benchmark*.

6.0 REPORT PREPARERS

This EIR was prepared by the City of Grass Valley with assistance from PMC and Kimley-Horn & Associates.

CITY OF GRASS VALLEY

Tom Last.....Community Development Director

PMC

Mark TeagueEIR Project Director/Manager

Patrick Hindmarsh.....EIR Project Manager

Jessica Heuer Environmental Planner

Seth Myers Environmental Planner

Kristin Faoro Environmental Planner

Leslie Parker Biologist

Suzanne Wirth.....Technical Editor

Jolene Miller..... Publication

KIMLEY-HORN & ASSOCIATES, INC.

Matthew Weir..... Traffic Impact Analysis

