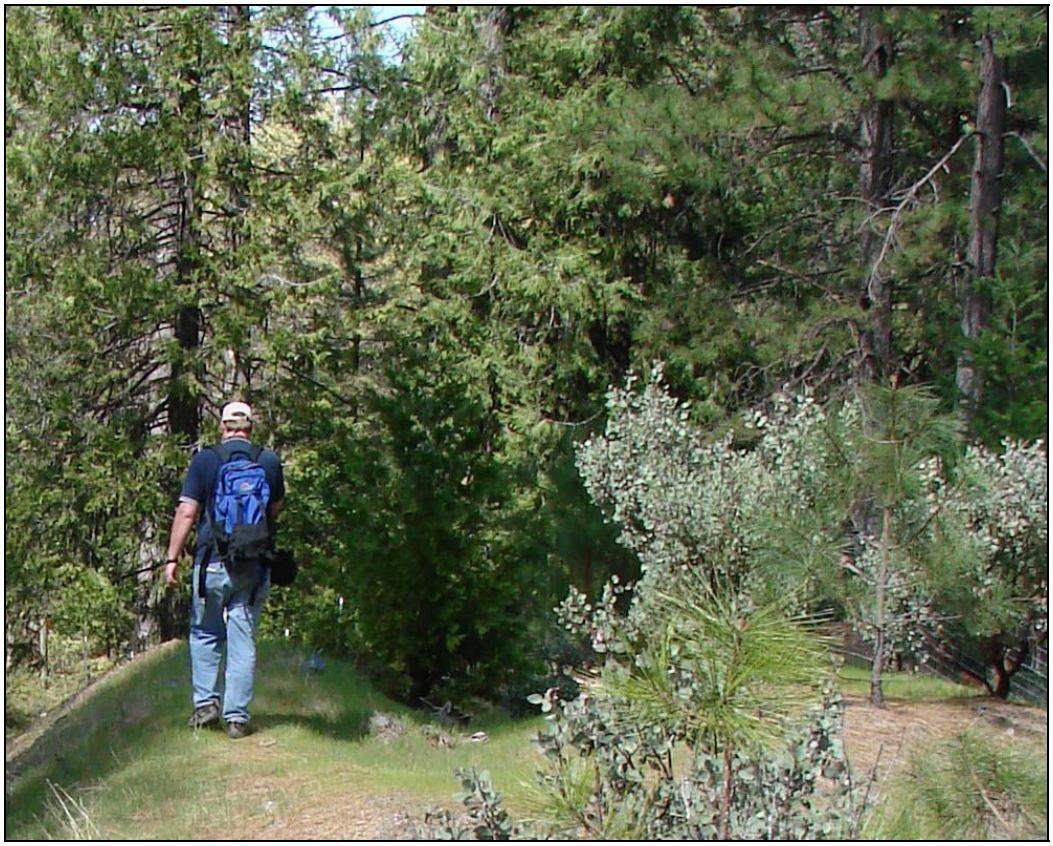
DRAFT

INITIAL STUDY
MITIGATED NEGATIVE DECLARATION

OSBORNE HILL
TRAIL NETWORK PROJECT



November 2008

State of California
DEPARTMENT OF PARKS AND RECREATION
Acquisition and Development
One Capitol Mall
Sacramento, CA 95814

MITIGATED NEGATIVE DECLARATION

PROJECT: **OSBORNE HILL TRAIL NETWORK PROJECT**

LEAD AGENCY: California Department of Parks and Recreation

AVAILABILITY OF DOCUMENTS: The Initial Study for this Mitigated Negative Declaration is available for review at:

- Northern Service Center
  California Department of Parks and Recreation
  One Capitol Mall - Suite 410
  Sacramento, CA 95814

- Sierra District Headquarters
  California Department of Parks and Recreation
  7360 West Lake Blvd.
  Tahoma, CA 96142

- Empire Mine State Historic Park
  10791 East Empire Street
  Grass Valley, CA 95945

- Grass Valley Library
  207 Mill Street
  Grass Valley, CA 95945

- Madelyn Helling Library
  980 Helling Way
  Nevada City, CA 95959

- *California Department of Parks and Recreation Internet Website*
  http://www.parks.ca.gov/?page_id=980

PROJECT DESCRIPTION:
The Department of Parks and Recreation proposes to renovate the recreational trail network in the Osborne Hill area of Empire Mine State Historic Park to minimize erosion and sedimentation of soil and elevated metals on road/trail surfaces. The following is a brief summary of proposed work:

- Reconstruct existing official roads/trails and construct new roads/trails along sustainable topographic grades.
- Close select official roads/trails with unsustainable alignments or elevated metals.
- Close or improve user created trails to DPR trail standards and maintain them as official roads/trails.

- Replace and install new accessory trail equipment such as public entry gates, signs, and fences.
- Relocate one public access point.
- Remove existing fences in areas closed due to elevated levels of metals once road/trail reconstruction is completed.
- Replace/install new fences or install other closure equipment at mine shafts.

A copy of the Initial Study is attached. Questions or comments regarding this Initial Study/Mitigated Negative Declaration should be submitted in writing to:

Heidi West – Environmental Coordinator
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall - Suite 500
Sacramento, CA 95814

Email Address: CEQANSC@parks.ca.gov
(Include 'Empire Trails' on the subject line)

Fax: (916) 445-9081

Submission must be in writing and postmarked or received by fax or e-mail no later than December 24, 2008. The original of any faxed document must be received by regular mail within ten (10) working days following the deadline fro comments, along with proof of successful fax transmission.

Pursuant to Section 21082.1 of the California Environmental Quality Act, the California Department of Parks and Recreation (DPR) has independently reviewed and analyzed the Initial Study and Negative Declaration for the proposed project and finds that these documents reflect the independent judgment of DPR. DPR, as lead agency, also confirms that the project mitigation measures detailed in these documents are feasible and will be implemented as stated in the Negative Declaration.

Original Signed By: _____ *11/19/2008*
Heidi West Date
Environmental Coordinator

Original Signed By Gary Waldron for: _____ *11/19/2008*
Kathleen Amann Date
Assistant Deputy Director,
Acquisition and Development

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CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION AND REGULATORY GUIDANCE

The Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Osborne Hill Trail Network Project at Empire Mine State Historic Park (SHP), Nevada County, California. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 *et seq*., and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 *et seq*.

An Initial Study is conducted by a lead agency to determine if a project may have a significant effect on the environment [CEQA Guidelines §15063(a)]. If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the lead agency determines that revisions in the project plans or proposals made by or agreed to by the applicant mitigate the potentially significant effects to a less-than-significant level, a Mitigated Negative Declaration may be prepared instead of an EIR [CEQA Guidelines §15070(b)]. The lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/MND conforms to the content requirements under CEQA Guidelines §15071.

1.2 LEAD AGENCY

The lead agency is the public agency with primary approval authority over the proposed project. In accordance with CEQA Guidelines §15051(b)(1), "the lead agency will normally be an agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." The lead agency for the proposed project is DPR. The contact person for the lead agency is:

Dan Millsap
Construction Supervisor II
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall, Suite 500
Sacramento, CA 95814
(916) 445-8737

Questions or comments regarding this Initial Study/Mitigated Negative Declaration should be submitted to:

Heidi West – Environmental Coordinator

California Department of Parks and Recreation
Northern Service Center
One Capitol Mall, Suite 500
Sacramento, California 95814

Email Address: CEQANSC@parks.ca.gov
(Include 'Empire Trails' on the subject line)

Fax: (916) 445-9081

Submission must be in writing and postmarked or received by fax or e-mail no later than December 24, 2008. The original of any faxed document must be received by regular mail within ten (10) working days following the deadline for comments, along with proof of successful fax transmission.

1.3 PURPOSE AND DOCUMENT ORGANIZATION

The purpose of this document is to evaluate the potential environmental effects of the proposed Osborne Hill Trail Network Project at Empire Mine State Historic Park. Mitigation measures have also been incorporated into the project to eliminate any potentially significant impacts or reduce them to a less-than-significant level.

This document is organized as follows:

- Chapter 1 - Introduction.
  This chapter provides an introduction to the project and describes the purpose and organization of this document.

- Chapter 2 - Project Description.
  This chapter describes the reasons for the project, scope of the project, and project objectives.

- Chapter 3 - Environmental Setting, Impacts, and Project Requirements and Mitigation Measures.
  This chapter identifies the significance of potential environmental impacts, explains the environmental setting for each environmental issue, and evaluates the potential impacts identified in the CEQA Environmental (Initial Study) Checklist. Project requirements and mitigation measures are incorporated, where appropriate, to reduce potentially significant impacts to a less-than-significant level.

- Chapter 4 - Mandatory Findings of Significance.
  This chapter identifies and summarizes the overall significance of any potential impacts to natural and cultural resources, cumulative impacts, and impact to humans, as identified in the Initial Study.

- Chapter 5 - Summary of Project Requirements and Mitigation Measures.

This chapter summarizes the project requirements and mitigation measures incorporated into the project as a result of the Initial Study.

- Chapter 6 - References.
  This chapter identifies the references and sources used in the preparation of this IS/MND.

- Chapter 7 - Report Preparation
  This chapter provides a list of those involved in the preparation of this document.

1.4 SUMMARY OF FINDINGS

Chapter 3 of this document contains the Environmental (Initial Study) Checklist that identifies the potential environmental impacts (by environmental issue) and a brief discussion of each impact resulting from implementation of the proposed project.

Based on the IS and supporting environmental analysis provided in this document, the proposed Osborne Hill Trail Network Project would result in less-than-significant impacts for the following issues: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities and service systems.

In accordance with §15064(f) of the CEQA Guidelines, a MND shall be prepared if the proposed project will not have a significant effect on the environment after the inclusion of mitigation measures in the project. Based on the available project information and the environmental analysis presented in this document, there is no substantial evidence that, after the incorporation of mitigation measures, the proposed project would have a significant effect on the environment. It is proposed that a Mitigated Negative Declaration be adopted in accordance with the CEQA Guidelines.

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CHAPTER 2
PROJECT DESCRIPTION

2.1 INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Osborne Hill Trail Network Project at Empire Mine State Historic Park (SHP), located in Nevada County, California. The proposed project would renovate the trail system at Osborne Hill to minimize erosion and sedimentation of soil and remediate areas where metals exceeded safety levels for human health (i.e., elevated metals) on road/trail surfaces. Additionally, the project would replace and install new accessory trail equipment such as public entry gates, signs, and fences, move one point of public access, remove existing fences in areas previously closed due to elevated metals for trails that are re-constructed, and close mine shafts.

2.2 PROJECT LOCATION

Empire Mine SHP is situated approximately sixty miles northeast of Sacramento in Nevada County. The park unit is located at 10791 East Empire Street twenty-four miles north of Auburn and just south of the Grass Valley city boundary (Appendix A: Figures 1 and 2). The park unit features approximately 853 acres (DPR 2008a, Kim Snyder 2008) of plant habitats consisting of mixed conifer species, manzanita, black oak, and other woody and herbaceous vegetation in the foothills of the northern Sierra Nevada Mountain Range. Osborne Hill is a geographic feature that comprises the southernmost portion of Empire Mine SHP. The Osborne Hill project site is south of Little Wolf Creek, which runs through the park unit from east to west and includes trails that are currently closed in the vicinity of the Prescott Hill, Daisy Hill, and Conlon mines. Osborne Hill is bounded on the east, west, and south sides by private land, much of it containing homes on large lots in wooded areas.

2.3 BACKGROUND AND NEED FOR THE PROJECT

Currently, DPR is preparing a park-wide Programmatic EIR for a project to remediate elevated metal concentrations in various areas of Empire Mine SHP that resulted from historic mining activities. The project consists of remediation activities required to abate risks in areas of Empire Mine SHP addressed under a Cleanup and Abatement Order and an Imminent and/or Substantial Endangerment Determination and Partial Consent Order that DPR and Newmont USA Ltd. entered into with the Department of Toxic Substance Control (DTSC) and Central Valley Regional Water Quality Control Board (CVRWQCB).

DPR is preparing this IS/MND under *independent utility* to evaluate and address impacts to the Osborne Hill trail network. The decision by DPR to prepare a separate environmental document for Osborne Hill Trail Network Project is described further in Section 2.10, Related Projects.

The existing Osborne Hill trail network is comprised of unpaved roads/trails dating as far back as the mid-1800's. Some roads/trails have unsustainable grades on excessively steep slopes and/or elevated metals (e.g. arsenic) from historic mining operations. Water quality testing and field observations by qualified DPR staff have determined that, over time water from heavy rain storms has concentrated on trails with unsustainable grades, causing erosion,

incision of the tread surface below adjacent terrain, and the transport of mine and mill materials to water bodies such as Little Wolf Creek. In late 2006 and 2007, existing and proposed roads/trails within the park unit were sampled to determine the level of metal concentrations (MFG 2006, 2008). As a result, exclusion fences or aggregate rock covers were installed in identified locations where metals exceeded safety levels for human health (i.e., elevated metals). The public responded to the fenced closure of several trail segments with concerns about the reduction of important multi-use recreational trail routes.

Without the project, trails closed by exclusion fences in 2006 and 2007 would remain closed to the public. DPR would continue to operate and maintain the remaining trails at Osborne Hill that have been evaluated to have a sustainable grade and levels of metals below hazardous levels. Should DPR close any other trails with elevated metal concentrations for health and safety, DPR would further reduce recreational opportunities for park visitors.

2.4 PROJECT OBJECTIVES

The mission of DPR is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality recreation.

The intent of the proposed Osborne Hill Trail Network Project is to:

- Protect DPR personnel and the public from elevated levels of metals in the soil in the soil on road/trail surfaces;
- Correct erosion and sedimentation issues caused by unsustainable road/trail grades;
- Minimize interruption of natural hydrologic drainage patterns and provide long term stability to the road/trail tread surface; and
- Provide recreational trail facilities for the public.

2.5 PROJECT DESCRIPTION

DPR proposes to renovate the recreational trail network at Osborne Hill in Empire Mine SHP to minimize erosion and sedimentation of soil and remediate elevated metals on road/trail surfaces. Currently, the trail network is comprised of official roads/trails that are maintained by DPR and trails that were not installed or maintained by DPR, also known as user created or volunteer trails.

The project scope includes reconstruction of existing official roads/trails and construction of new roads/trails to minimize erosion and sedimentation of soil and elevated metals on road/trail tread surfaces. DPR would close some official roads/trails with unsustainable alignments or elevated metals. In addition, DPR would either close user created trails with unsustainable alignments or elevated metals, or improve them to DPR trail standards and maintain them as official trails. Following is a description of road/trail treatments.

Reconstruct Existing Roads/Trails: DPR would (a) remove vegetation, including but not limited to trees and shrubs, overgrown into the road/trail alignment and adjacent road berm, (b) remove berms adjacent to the alignment if metals are not elevated beyond acceptable levels, and/or (c) cover tread surface with an aggregate rock cap. The roads/trails would be contoured to provide outslope sheet drainage or crowned for lateral sheet drainage instead

of allowing drainage to flow along the alignment of the road/trail tread.

Construct New Roads/Trails: DPR would install new routes along alignments with sustainable grades. These routes would either contain metals below hazardous levels or would be covered with an aggregate rock cap to contain any soils with elevated metals on site. Construction would involve removal of vegetation, including but not limited to trees and shrubs, and grading and contouring of the alignment to provide outslope sheet drainage.

Closure: Several road/trail segments, such as the Daisy Hill Mine Trail and several user created trails, are identified for closure. DPR would close road/trail segments by blocking their entrances with plant material obtained from the vegetation removed during reconstruction or new construction. To the extent feasible, DPR would restore closed alignments to their natural conditions for topography, hydrology, and vegetation.

Road measurements include (a) nine foot wide tread width, (b) ten foot wide brush clearance, and (c) ten foot high brush clearance. Trail measurements include (a) four foot wide tread width, (b) seven foot wide brush clearance, and (c) ten foot high brush clearance. Cutback slopes would range from one to four feet wide.

DPR would treat reconstructed and new roads/trails with up to twelve inches of compacted fill; soil would be from road berms where metals are not elevated and from certified clean imported fill from outside the park unit. DPR would apply non-mineralized aggregate rock (Cal Trans ¾ inch Class II road base specifications) on roads/trails requiring an aggregate cover to contain elevated metals in the soil. Clean imported fill would be used, where needed, for road/trail sections identified for closure activities such as removal and restoration. Freshly uncovered native soil located on the project site would be tested to ensure that DPR does not use materials with elevated metal concentrations. Data for metal concentrations in native soil would be obtained in-situ directly on the trail surface utilizing field X-ray fluorescence (XRF) equipment.

Also included in the project scope are the following:

Public Access Points: DPR would replace metal access gates at nodes D, H, and I to prevent motorized recreation vehicles from entering the park unit (Appendix A: Figures 1 and 2). At Node I, the access point would be moved approximately fifty feet north of the existing location so that the public no longer enters through the public entry gate directly onto the trail.

Trail Exclusion Fences: DPR would remove trail exclusion fences erected in 2006 and 2007 along any re-constructed trails in the vicinity of the Prescott Hill, Daisy Hill, and Conlon mines.

Road/Trail Signage: DPR would install directional and interpretive signage throughout the renovated Osborne Hill trail network, as needed. All signs would be attached to ground mounted, six foot high redwood posts.

Road/Trail Fencing: DPR would install fences adjacent to road/trail routes to prevent park visitors from leaving roads/trails and entering areas that contain elevated levels of metals.

Mine Shaft Safety Equipment: DPR and the California Department of Conservation would survey and inspect existing mine shaft safety fences and mines that are not closed with

safety equipment within the project site. DPR would install new safety fences or other closure equipment that meet current standards at mine shafts that do not meet Department of Mines and Safety standards.

2.6 PROJECT IMPLEMENTATION

The Osborne Hill Trail Network Project would take place from December 2008 through March 2009. Work would occur during daylight weekday hours. However, weekend work could be implemented to accelerate repair or installation of roads/trails, their accessory equipment, and other project components.

DPR would use construction crews utilizing hand tools and equipment such as an excavator and dump truck for project related activities. Vehicles used to transport crews, material, and equipment would also be present intermittently. Vehicle, equipment, and materials staging areas would be located at the Equipment Yard north of Little Wolf Creek and on an existing disturbed area at Node H off of Osborne Hill Road (Appendix A: Figure 2). A transportation plan will be utilized for the transport of potentially hazardous materials such as excess native soil generated during project construction from areas with metal concentrations above clean-up goals, from the project site to an appropriate disposal facility.

Best Management Practices (BMPs) would be incorporated into the project design and Construction Storm Water Pollution Prevention Plan (See Section 2.9 Discretionary Approvals and Chapter 3, Section VIII. Hydrology and Water Quality) to ensure that metals present in soils at the project site are not transported via surface water runoff. Additionally, BMPs would ensure that natural and cultural resources in and around the project sites are adequately protected during and after construction activities. The BMPs discussed in this document and used in the implementation of the project are obtained from the California Stormwater Quality Association (CSQA) *Stormwater Best Management Practices Construction Handbook* (CSQA 2003). Temporary BMPs would be used to keep sediment on-site throughout the duration of the project. During construction work BMPs would be checked daily, maintained, and modified as needed. In addition, permanent BMPs would be used after construction work to stabilize the site and minimize erosion.

DPR has consistently referenced CSQA BMPs and has identified them as an acceptable standard for use in all park units of the State Park System. The BMPs which apply to this project and which would be implemented include but are not limited to erosion/sediment control, as well as hazardous waste and contaminated soil management.

2.7 VISITATION TO EMPIRE MINE STATE HISTORIC PARK

Empire Mine SHP receives an average of 93,292 visitors per year. The proposed project is designed to provide an adequate recreational trail system for current and projected visitation levels and is not expected to increase visitation.

Fiscal Year	Paid Day Use	Free Day Use	Overnight Camping	Total Attendance
1995-1996	57,639	24,061	0	81,700
1996-1997	50,868	23,634	16,642	91,144
1997-1998	50,459	22,616	16,675	89,750
1998-1999	51,325	20,683	0	72,008
1999-2000	53,884	17,870	18	71,772
2000-2001	43,892	29,201	0	73,093
2001-2002	48,431	47,410	0	95,841
2002-2003	44,593	72,965	0	117,558
2003-2004	39,149	68,627	0	107,776
2004-2005	44,408	65,334	0	109,742
2005-2006	41,003	61,801	0	102,804
2006-2007	41,468	64,848	0	106,316
Total Attendance	567,119	519,050	33,335	1,119,504
Average Attendance	47,260	43,254	2,778	93,292

(DPR 2008b)

2.8 CONSISTENCY WITH LOCAL PLANS AND POLICIES

All project components would be implemented entirely within the boundaries of Empire Mine SHP. The project is consistent with the DPR mission and its management directives aimed at creating opportunities for high-quality outdoor recreation. The proposed project is consistent with local plans and policies currently in effect. Please see Chapter 3, Section IX, Land Use and Planning, for further details.

2.9 DISCRETIONARY APPROVALS

DPR retains approval authority for the proposed Osborne Hill Trail Network Project at Empire Mine SHP. The project also requires approval from the following government agencies:

- California Department of Fish and Game (1602 Notification of Lake or Streambed Alteration),
- U.S. Army Corps of Engineers (Clean Water Act Section 404 Nationwide Permit),
- Central Valley Regional Water Quality Control Board (Clean Water Act Section 401 Water Quality Certification),
- California State Water Resources Control Board (Construction Storm Water Pollution Prevention Plan (SWPPP)), and
- California Department of Toxic Substances Control.

DPR has sought technical assistance from the U.S. Fish and Wildlife Service about special status species that could be located in the area. DPR will acquire all necessary reviews and permits prior to implementing any project components requiring regulatory review.

2.10 RELATED PROJECTS

DPR often has other smaller maintenance programs, restoration, and interpretive projects planned for a park unit. At this time, no other projects of these kinds are planned to occur in Empire Mine SHP when the proposed Osborne Hill Trail Network Project is scheduled. However, the proposed project is part of a series of inter-related projects for mine remediation at this park unit.

Remediation work already completed in various areas of the park unit under an Emergency Notice of Exemption (NOE) includes capping or fencing off certain trail segments containing elevated metal concentrations, capping the Red Dirt Pile, and park residence clean-up. Currently, DPR is preparing a park-wide Programmatic Environmental Impact Report (PEIR) for a project to remediate elevated metal contamination in various areas of the park unit that resulted from historic mining activities. These areas include the Cyanide Plant and adit, the Sand Dam, DPR personnel residences, historic buildings and mine yard, historic mine and mill facilities, Little Wolf Creek/conveyance corridor, Empire Shaft, and Magenta Drain. The project consists of remediation activities required to abate risks in areas of Empire Mine SHP addressed under a Cleanup and Abatement Order and an Imminent and/or Substantial Endangerment Determination and Partial Consent Order that DPR and Newmont USA Ltd. entered into with the Department of Toxic Substance Control (DTSC) and Central Valley Regional Water Quality Control Board (CVRWQCB).

DPR is preparing this IS/MND under *independent utility* to evaluate and address impacts to the Osborne Hill trail network. In considering whether to treat a the Osborne Hill Trail Network Project as a de facto part of a larger project (PEIR remediation activities) rather than as a separate project under *independent utility*, DPR determined that the potential later activities covered under the PEIR would not be reasonably foreseeable consequences of the limited Osborne Hill Trail Network remediation activities (Remy *et al*. 2007).

CHAPTER 3
ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION

1. Project Title: Osborne Hill Trail Network Project

2. Lead Agency Name & Address: California Department of Parks and Recreation

3. Contact Person & Phone Number: Dan Millsap (916) 445-8737

4. Project Location: Empire Mine State Historic Park, Nevada County

5. Project Sponsor Name & Address: California Department of Parks and Recreation
Acquisition and Planning Division
Northern Service Center
One Capitol Mall - Suite 500
Sacramento, California 95814

6. General Plan Designation: State Historic Park (December 1978)

7. Zoning: Open Space (Nevada County 1996)

8. Description of Project:
The Department of Parks and Recreation proposes to renovate the recreational trail network in the Osborne Hill area of Empire Mine State Historic Park to minimize erosion and sedimentation of soil and elevated metals on road/trail surfaces. The following is a brief summary of proposed work:
   - Reconstruct existing official roads/trails and construct new roads/trails along sustainable topographic grades.
   - Close select official roads/trails with unsustainable alignments or elevated levels of elevated metals.
   - Close or improve user created trails to DPR trail standards and maintain them as official roads/trails.
   - Replace and install new accessory trail equipment such as public entry gates, signs, and fences.
   - Relocate one public access point.
   - Remove existing fences in areas closed due to elevated levels of metals once road/trail reconstruction is completed.
   - Replace/install new fences or install other closure equipment at mine shafts.

9. Surrounding Land Uses & Setting: Refer to Chapter 3 of this document (Section IX, Land Use Planning)

10. Approval Required from Other Public Agencies: Refer to Chapter 2 of this document (Section 2.9: Discretionary Approvals)

1. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact", as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	☐ Mandatory Findings of Significance	☒ None

DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment and a **NEGATIVE DECLARATION** will be prepared. ☐

I find that, although the original scope of the proposed project **COULD** have had a significant effect on the environment, there **WILL NOT** be a significant effect because revisions/mitigations to the project have been made by or agreed to by the applicant. A **MITIGATED NEGATIVE DECLARATION** will be prepared. ☒

I find that the proposed project **MAY** have a significant effect on the environment and an **ENVIRONMENTAL IMPACT REPORT** or its functional equivalent will be prepared. ☐

I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated impact" on the environment. However, at least one impact has been adequately analyzed in an earlier document, pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis, as described in the report's attachments. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the impacts not sufficiently addressed in previous documents. ☐

I find that, although the proposed project could have had a significant effect on the environment, because all potentially significant effects have been adequately analyzed in an earlier EIR or Negative Declaration, pursuant to applicable standards, and have been avoided or mitigated, pursuant to an earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, all impacts have been avoided or mitigated to a less-than-significant level and no further action is required. ☐

Original Signed By: _____ *11/19/2008*

Heidi West — Date

Environmental Coordinator

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers, except "No Impact", that are adequately supported by the information sources cited. A "No Impact" answer is adequately supported if the referenced information sources show that the impact does not apply to the project being evaluated (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on general or project-specific factors (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must consider the whole of the project-related effects, both direct and indirect, including off-site, cumulative, construction, and operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether that impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate when there is sufficient evidence that a substantial or potentially substantial adverse change may occur in any of the physical conditions within the area affected by the project that cannot be mitigated below a level of significance. If there are one or more "Potentially Significant Impact" entries, an Environmental Impact Report (EIR) is required.

4. A "Mitigated Negative Declaration" (Negative Declaration: Less Than Significant with Mitigation Incorporated) applies where the incorporation of mitigation measures, prior to declaration of project approval, has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact with Mitigation." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR (including a General Plan) or Negative Declaration [CCR, Guidelines for the Implementation of CEQA, § 15063(c)(3)(D)]. References to an earlier analysis should:

   a) Identify the earlier analysis and state where it is available for review.

   b) Indicate which effects from the environmental checklist were adequately analyzed in the earlier document, pursuant to applicable legal standards, and whether these effects were adequately addressed by mitigation measures included in that analysis.

   c) Describe the mitigation measures in this document that were incorporated or refined from the earlier document and indicate to what extent they address site-specific conditions for this project.

6. Lead agencies are encouraged to incorporate references to information sources for potential impacts into the checklist or appendix (e.g., general plans, zoning ordinances, biological assessments). Reference to a previously prepared or outside document should include an indication of the page or pages where the statement is substantiated.

7. A source list should be appended to this document. Sources used or individuals contacted should be listed in the source list and cited in the discussion.

8. Explanation(s) of each issue should identify:
   a) the criteria or threshold, if any, used to evaluate the significance of the impact addressed by each question **and**
   b) the mitigation measures, if any, prescribed to reduce the impact below the level of significance.

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ENVIRONMENTAL ISSUES

I. AESTHETICS

ENVIRONMENTAL SETTING

Empire Mine SHP is located in Nevada County south of the City of Grass Valley on the western slope of the Sierra Nevada Mountain Range between approximately 2,500 and 2,900 feet in elevation (DPR 1996). Overall, Nevada County is an area of scenic beauty that is comprised of picturesque towns, agricultural areas such as wineries and orchards, and scenic mountains, rivers, and valleys.

The scenic quality of the county is preserved through the establishment of permanent open space areas and public forests, conservation areas, agricultural zoning, and scenic highway designations. State Route (SR) 174, a state-designated scenic highway (Nevada County 1996), bisects Empire Mine SHP from about one quarter to one half mile north-northeast of the proposed Osborne Hill project site.

The project site is located in mixed evergreen forest predominantly consisting of second-growth ponderosa pines, incense cedar, and Douglas-fir (DPR 1996). Mining activities that took place in the 1800's and 1900's have altered the natural landscape throughout the park unit. Features such as old mining roads, shafts, and abandoned artifacts contribute to the historic character of the unit, including the Osborne Hill area.

Numerous official trails, as well as user created (i.e. volunteer) trails, traverse the Osborne Hill project site (DPR 2008), passing through forested areas and near historic mines. In particular, the Power Line Trail follows the alignment of a Pacific Gas and Electric Company (PG&E) power line easement in an east-west direction nearly over the summit of Osborne Hill. Heavy recreational use of this easement as a trail has resulted in the creation of erosion scars. The power lines and trail erosion are visible from some of the other Osborne Hill trails, such as the Osborne Loop Trail.

The General Plan for Empire Mine SHP (DPR 1978) identifies two Panoramic View overlooks within the proposed project site. Overlooks are designated locations for the public to observe expansive vistas of surrounding landscapes. One overlook within the project site is located on the west side of Osborne Hill near the park unit boundary; the second is located at the south side of Osborne Hill in the southernmost portion of the park unit. Since 1978, these overlooks have become overgrown with vegetation and do not provide visitors with expansive vistas.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Aesthetics is based on criteria **I a – d**, described in the environmental checklist above.

DISCUSSION

a) As stated in the Environmental Setting above, two Panoramic View overlooks are located within the proposed project site, but they have become overgrown since 1978. The southernmost Panoramic View overlook is still identified with a sign, but it is so overgrown with manzanita that the only view at this location is of the adjacent shrubby vegetation. The proposed project would have no impact on any existing scenic vistas with expansive vistas.

b) The Osborne Hill project site is not visible from the state-designated scenic highway, SR 174. Therefore, no scenic resources within view of a state scenic highway would be affected. No impact.

c) DPR would re-construct some existing official trails, construct new trails, and close others as part of the proposed project to reduce erosion and protect trail users from potential hazards. DPR would also install signage and fences at some trail locations. Overall, the visual character of the site after project completion would not be significantly different from existing aesthetic conditions, with the exception of the installation of permanent fences along some trails. DPR would install permanent fences at locations along trail alignments where elevated levels of metals are present in the soil in order to protect trail users. New fences could create a visual impact. The following measure will reduce any aesthetic impact caused by the presence of new fences to a less than significant level.

PROJECT REQUIREMENT AES-1: TRAIL FENCE COLOR
• To the greatest extent feasible, new fences will be constructed of material and be of a color that blends in with the natural surroundings.

d) No new lighting would be installed as part of the proposed project and all construction work for the proposed project would take place during daylight hours, eliminating the need for work lights. No Impact.

II. AGRICULTURAL RESOURCES

ENVIRONMENTAL SETTING

Empire Mine SHP is located in Nevada County, California. The Nevada County General Plan (1996) defines goals, objectives, and policies that support the conservation land designated as Open Space. County Open Space includes agricultural land, as well as areas with mineral and other natural resources and outdoor recreation values.

According to the Nevada County General Plan (1996), there are abundant agricultural resources within the county ranging from half-acre plots of specialized vegetables to cow/calf operations and timber sales. In some cases, agricultural operations are inter-dispersed throughout residential neighborhoods. Empire Mine SHP does not support any agricultural operations or farmland.

WOULD THE PROJECT*:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) 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 non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒

* In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997), prepared by the California Department of Conservation as an optional model for use in assessing impacts on agricultural and farmland.

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Agricultural Resources is based on criteria **II a – c**, described in the environmental checklist above.

DISCUSSION

a) As noted in the Environmental Setting above, Empire Mine SHP does not support agricultural operations or farmland. Implementation of the proposed project would not affect any category of California Farmland. No impact.

b) This project contains no component that would conflict with existing zoning for agricultural use. There is no land under Williamson Act contract within the park unit (California

Department of Conservation 2008). No impact.

c) No farmland is present in or near Empire Mine SHP, including the proposed project site. Therefore, implementation of the project would not result in the conversion of farmland to non-agricultural use. No impact.

III. AIR QUALITY AND CLIMATE CHANGE

ENVIRONMENTAL SETTING

The proposed project is located in the Mountain Counties Air Basin (MCAB) which consists of the seven counties Plumas, Sierra, Nevada, Amador, Calaveras, Tuolumne, Mariposa, and parts of Placer and El Dorado (California Air Resources Board 2007a). The MCAB is under the jurisdiction of the U.S. Environmental Protection Agency (USEPA) Region IX. A portion of the MCAB, including Nevada, Sierra, and Plumas counties, comprises the Northern Sierra Air Quality Management District (NSAQMD) (California Air Resources Board 2008a). The proposed project is located in western Nevada County.

Climate

Topography strongly influences climate in Nevada County. Elevations range from about 200 feet at the southwest corner of the county to 9,143 feet at the crest of the Sierra Nevada Range. The lower western county, therefore, has warmer average temperatures than the eastern county. Average annual precipitation increases with elevation ranging from approximately thirty inches in the western county to over sixty inches near the Sierra Nevada crest. The prevailing wind direction over Nevada County is westerly but topography causes high variability across the region (Nevada County 1995).

Empire Mine SHP is situated at approximately 2,500 to 2,900 feet in elevation. The Western Regional Climate Center has ninety-three years of climate data on file for Nevada City, which is about six miles north of the park unit. Data show that the area receives approximately fifty-five inches of rain annually and has January winter temperatures ranging from 50° Fahrenheit (F) maximum / 30° F minimum and July summer temperatures from 89° F maximum / 53° F minimum (Western Regional Climate Center 2008). In addition, snow depth averages about thirty inches per year, but rarely reaches more than eight inches at any one time (DPR, 1978).

Air Quality Designations

Land owners and managers within Nevada County are subject to air quality planning programs required by the federal Clean Air Act of 1970 (CAA), its 1990 amendments, and the California Clean Air Act of 1988 (CCAA). Both the federal and state clean air statutes provide for ambient air quality standards related to air pollutants, timetables for progressing toward achieving and maintaining ambient standards, and the development of plans to guide air quality improvement efforts by state and local agencies. Ambient air pollutants called criteria pollutants are pollutants for which acceptable levels of exposure can been determined and for which an ambient air quality standard has been set.

The USEPA is responsible for setting National Ambient Air Quality Standards (NAAQS) and established national area designations for six criteria pollutants after the passage of the Clean Air Act of 1970. These pollutants include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, particulate matter 10 microns or less in diameter (PM_{10}), and particulate matter 2.5 microns or less in diameter ($PM_{2.5}$). If an area does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant, it is designated as “non-attainment.” If an area meets the national primary or secondary ambient air quality standard for the pollutant,

it is designated in “attainment.” An area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant is designated “unclassifiable” (USEPA 2008).

The California Air Resources Board (CARB) is the lead state agency responsible for air quality and for assisting local air districts in California. CARB has set California area designations for ten criteria pollutants including ozone, PM_{10}, $PM_{2.5}$, CO, NO_2, SO_2, sulfates, lead, hydrogen sulfide, and visibility reducing particles (VRPs). If a pollutant concentration is lower than the standard, the area is classified as “attainment” for that pollutant. If an area exceeds the standard, the area is classified as “non-attainment” for that pollutant. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated “unclassified” (CARB 2008b).

NSAQMD is the local regulatory agency that develops and implements air quality plans to identify air pollution levels, sources of air pollution, and attainment strategies for the region where the proposed Osborne Hill Trail Network Project is located (NSAQMD n.d.).

Table III-1: Air Quality Standards Based on 2006 Nevada County Air Quality Designations

Pollutant	State Designation	National Designation
Ozone	Non-attainment	Non-attainment (western Nevada County) Unclassified/Attainment (eastern Nevada County)
PM_{10}	Non-attainment	Unclassified
$PM_{2.5}$	Unclassified	Unclassified/Attainment
Carbon Monoxide	Unclassified	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	Not Applicable (N/A)
Lead	Attainment	N/A
Hydrogen Sulfide	Unclassified	N/A
Visibility Reducing Particles	Unclassified	N/A

(CARB 2007b)

Sensitive Receptors

Air standards specify the concentration of pollutants the public could be exposed to without experiencing adverse health effects. Individuals or groups who are especially reactive to criteria pollutants are considered sensitive receptors. Sensitive receptors include children, the elderly, individuals susceptible to respiratory distress, and those who are acutely or chronically ill.

Six houses and two mobile home pads used for DPR park personnel housing are situated in Empire Mine SHP; currently four of the houses and one of the mobile home pads accommodate eight year-around residents (Clark 2008, Munson 2008a). The Equipment Storage Yard is approximately 0.25 mile south of the nearest park residence and the Osborne

Hill project site is about 0.50 mile south and east of the nearest park residences (Munson 2008b). In addition, private homes are located along Osborne Hill Road. Osborne Hill Road is a private, residential street situated to the east of Osborne Hill and the park unit boundary (Wells 2008, Appendix A: Figures 1 and 2).

Two public facilities where sensitive receptors could visit are situated within several hundred feet of the eastern park unit boundary and within 0.50 miles of Osborne Hill. The facilities include Grass Valley Seventh Day Adventist Church on Osborne Hill Road and Calvary Bible Church of Grass Valley on State Route (SR) 174 (Superpages.com 2008).

WOULD THE PROJECT*:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Conflict with or obstruct implementation of the applicable air quality plan or regulation?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations (e.g., children, the elderly, individuals with compromised respiratory or immune systems)?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

* Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make these determinations.

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Air Quality is based on criteria **III a – e**, described in the environmental checklist above.

DISCUSSION

a) Work proposed as part of the Osborne Hill Trail Network Project would not conflict with or obstruct the fulfillment of any applicable air quality plan for NSAQMD, or the MCAB. No impact.

b, c) The trail work associated with the Osborne Hill Trail Network Project would take place from December through March and not occur during the dry season. The proposed project

would not emit air contaminants at a level that, by themselves, would violate any air quality standard or contribute to a permanent or long term increase in any air contaminant. However, project implementation would generate short-term emissions of fugitive dust and involve the use of equipment that would emit ozone precursors. Increased emissions of fugitive dust and ozone precursors could contribute to existing non-attainment conditions, which could interfere with achieving the projected attainment standards. Along with **MITIGATION MEASURE HAZMAT-1**, incorporation of the following measure into the project design will reduce impacts to a less than significant level.

PROJECT REQUIREMENT AIR-1: DUST AND OZONE REDUCTION
• All active construction areas will be lightly sprayed at least twice daily during dry, dusty conditions to reduce dust without causing runoff. • All trucks or light equipment hauling soil, sand, or other loose materials on public roads will be covered or required to maintain at least two feet of freeboard. • All gasoline-powered equipment will be maintained in good mechanical condition (according to manufacturer's specifications), and in compliance with all State and federal requirements. • Excavation and grading activities will be suspended when sustained winds exceed 15 miles per hour (mph), instantaneous gusts exceed 25 mph, or dust from construction related activities could obscure driver visibility on public roads.

d. As stated in the Environmental Setting, sensitive receptors could be located in the vicinity of the proposed project. Any equipment use that could generate fugitive dust would be of limited duration, both in daily operation and as a percentage of the proposed work for this project. The construction areas would be closed to the public and work would generally occur during daylight hours. These conditions, combined with full implementation of the project requirements described in **PROJECT REQUIREMENT AIR-1** above, will result in a less than significant impact.

e. The proposed work would not result in the long-term generation of odors; however, construction related emissions could result in a short-term generation of odors, including diesel exhaust and fuel or solvent vapors. Some DPR park personnel and adjacent residents could consider these odors objectionable. However, construction activities would be short-term and odorous emissions would be limited and dissipate rapidly in the air with increased distance from the source. Less than significant impact.

Climate Change

California Assembly Bill (AB) 32 is California's roadmap to greenhouse gas (GHG) emission reduction by listing goals and timelines and giving new authority to existing agencies to meet these goals. The bill requires that statewide GHG emissions must be reduced to 1990 levels by the year 2020 and requires CARB to adopt rules and regulations. (Jones & Stokes 2007)

In California, there are no statewide significance criteria or approved mitigation methods concerning GHG emissions; therefore, this section will discuss climate change qualitatively with no significance conclusion.

In discussing climate change, three fundamental questions must be addressed:
1) How will the project affect climate change?
In general, a project would affect climate change if it altered the earth's radiative ability through direct emissions of GHG; indirect emissions of GHG; alteration of sinks of GHG; or changes in land albedo (i.e., reflectivity). The project would reconstruct the official trail network on Osborne Hill by rebuilding trails to sustainable specifications, adding new alignments, and decommissioning some unsustainable alignments and user created trails. The proposed Osborne Hill Trail Network Project would not increase the earth's radiative ability through direct or indirect emissions of GHG or change land reflectivity. The project could alter the sinks of GHG by removing trees that currently grow on or immediately adjacent to existing alignments and proposed new alignments. However, the project has been designed to minimize tree removal. In addition, the number of trees that could be removed as a result of the project would be a small proportion relative to the number of trees in the park unit and the region.

2) How will the project be affected by climate change?
In general, a project would be affected by climate change if there is a change in water availability and quality; an increase in the frequency and severity of extreme weather events; changes in cloud cover and rainfall patterns; and increases in frequency of ozone exceedances.

The proposed project would not be affected by a change in water availability and quality or sea level rise. The project could be affected by an increase in the frequency or severity of storm events or an increase in cloud cover and rainfall patterns. However, proposed trail reconstruction and new trail installation have been designed along sustainable grades, elevations, and with outslope drainage. The proposed project could be affected by exceedances of ozone because Nevada County is designated non-attainment of ozone, which in turn could pose limits to operations.

3) If the project contributions to climate change are considered a significant impact on the environment, what constitutes feasible 'fair share' mitigation?
As stated above, California has no statewide significance criteria; therefore, at this time DPR is unable to provide analysis and determination as to the significance of climate change in relation to this project and the overall environment or the feasibility of 'fair share' mitigation.

IV. BIOLOGICAL RESOURCES

ENVIRONMENTAL SETTING

Empire Mine SHP showcases one of the most productive and longest operating gold mines in the West from the gold mining era. The landscape still shows clear signs of past uses including roads, mines, tailing piles, waste rock piles, ditches, buildings, equipment, dams, approximately sixteen acres of formal gardens, and other alterations. The park unit is located in an urban environment surrounded by highways and private land, much of it containing homes on large lots in wooded areas.

In addition to being a highly significant historic site, Empire Mine SHP also provides valuable habitat for plants and animals. At 2500-2900 feet above sea level, the park unit is within a transition zone between the lower foothills flora and the higher Sierra Nevada Mountains flora. The entire area was once dominated by ponderosa pine (*Pinus ponderosa*) but sustained significant changes at the hands of early settlers during the mining operations.

The habitat types covering the Osborne Hill Area, today, are characterized as a Mixed Conifer Alliance with several patches of the White-leaf Manzanita Alliance (Sawyer and Keeler-Wolf 1995).

Mixed Conifer Alliance - Dominant upper story species at the project site include ponderosa pine (*Pinus ponderosa*), California black oak (*Quercus kelloggii*), and incense cedar (*Calocedrus decurrens*). Other tree species include sugar pine (*Pinus lambertiana*) and Douglas-fir (*Pseudotsuga menziesii*). Without the influence of frequent forest clearing and fire, much of the forested area has developed into a dense, closed canopy environment with well established shade tolerant species such as incense cedar. The shrub layer includes manzanita (*Arctostaphylos* spp.), deerbrush (*Ceanothus* spp.), coffee berry (*Rhamnus* spp.), poison oak (*Toxicodendron diversilobum*), wild honeysuckle (*Lonicera hispidula*), and blackberry and raspberry (*Rubus* spp.). The ground layer has species such as mountain misery (*Chamaebatia foliolosa*), blue wild rye (*Elymus glaucus* ssp. *glaucus*), bedstraw (*Galium* spp.), violets (*Viola* spp.), soap plant (*Chlorogalum pomeridianum*), vetch (*Vicia* spp.), bracken fern (*Pteridium aqualinum*), and Humboldt lily (*Lilium humboldtii* ssp. *humboldtii*).

White-leaf Manzanita Alliance – White-leaf manzanita (*Arctostaphylos viscida*) dominates segments of Osborne Hill. Due to fire exclusion and infrequent clearing, some dense stands of white-leaf manzanita have reached senescence (full maturity resulting in death). Other species found within this alliance include Mahala mat (*Ceanothus prostratus*), mountain misery, creeping sage (*Salvia sonomensis*), and poison oak.

Special-Status Species

Sensitive biological resources that occur or potentially occur in or near the proposed project site are discussed in this section. Sensitive species are defined as plants and animals that are legally protected or that are considered sensitive by federal, state, or local resource conservation agencies and organizations. Specifically, this includes species listed as state or federally Threatened or Endangered, those considered as candidates for listing as Threatened or Endangered, species identified by the United States Fish and Wildlife Service (USFWS)

and/or California Department of Fish and Game (DFG) as Species of Special Concern, animals identified by DFG as Fully Protected or Protected, other protected or sensitive animals, and plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered. Also included are habitats that are considered critical for the survival of a listed species or have special value for wildlife species and plant communities that are unique or of limited distribution.

All sensitive species and their habitats were evaluated for potential impacts from the proposed project. DPR personnel collected and reviewed available data to determine the proximity of sensitive plants, animals, and their habitats to the proposed project site. A query of the DFG's Natural Diversity Database (CNDDB) was conducted for sensitive species and habitats within the Grass Valley and eight surrounding 7.5 -minute U.S. Geological Society (USGS) quadrangle maps (DFG 2008). These nine maps were also used to generate a USFWS species list for the area and a CNPS[1] Inventory of Rare and Endangered Plants of California list of potentially occurring special-status plant species (CNPS 2008).

Seventeen special-status plant species and eighteen wildlife species are described below along with the likelihood of their potential to occur at the project site and the impacts the proposed project could cause to each species.

Plant Species

The Osborne Hill trail network runs through Mixed Conifer and White-leaf Manzanita alliances. The CNPS on-line inventory produced a list of fifteen plant species with the potential to occur within Grass Valley and the surrounding eight 7.5- minute quadrangle maps. Suitable habitats for five of the species on the CNPS list are not present within the project footprint. The online USFWS species list and CNDDB species list for Grass Valley and the surrounding eight 7.5-minute quadrangle maps did not produce any additional special-status plant species with the potential to occur at the project site.

DPR personnel conducted sensitive plant surveys throughout the Osborne Hill project site in March, April, and May of 2008 when the species were either blooming or in an identifiable life stage. Two CNPS List 4 species were identified on the project site during DPR sensitive plant surveys, bringing the total number of plant species evaluated for their potential to occur at the project site to seventeen.

The seventeen special-status plant species that have been documented in Empire Mine SHP are described below along with species that potentially could occur at or near the project site due to the proximity of previously recorded sightings (DFG 2008).

Plant Species Known To Occur in the Park Unit and on the Project Site

Humboldt lily (*Lilium humboldtii* ssp. *humboldtii*) – The Humboldt lily is a CNPS List 4.2 herbaceous bulb species found in chaparral, cismontane woodland, and openings in lower montane coniferous forest habitats. DPR biologists conducted botanical surveys of the project

[1] California Native Plant Society (CNPS) Lists: List 1A = presumed extinct in California; List 1B = rare or endangered in California and elsewhere; List 2 = rare or endangered in California, more common elsewhere; List 3 = need more information; List 4 = plants of limited distribution. New threat code extensions are: .1 = seriously endangered in California; .2 = fairly endangered in California; and .3 not very endangered in California.

site and determined that the lily occurs throughout the site under the forest canopy. Therefore, implementation potentially could impact this CNPS List 4.2 species.

True's manzanita (*Arctostaphylos mewukka* ssp. *truei*) - Blooming from February through May, this CNPS List 4.2 species occurs in chaparral and lower montane coniferous forest habitats. This grey-green evergreen shrub is found scattered throughout the proposed project site. Project implementation could potentially impact the True's manzanita occurrences on the project site.

Plant Species With Potential To Occur In or Near Empire Mine SHP, But Not Found During Project Plant Surveys

Brandegee's clarkia (*Clarkis biloba* ssp. *brandegeae*) - This chaparral or cismontane woodland dweller is a CNPS List 1B.2 species. Brandegee's clarkia is an annual herb blooming from May through July. There are records for this species within the Grass Valley 7.5-minute quadrangle map, however Brandegee's clarkia was not located at the project site during the sensitive plant surveys and, therefore, is not expected to be impacted by project implementation (DFG 2008).

Butte County fritillary (*Fritillaria eastwoodiae)* - Butte County fritillary is a CNPS List 3.2 herbaceous bulb species. It blooms from March through June and occurs in chaparral, cismontane woodland, and openings in lower montane coniferous forest habitats. During sensitive plant surveys, Butte County fritillary was not located within the project footprint; therefore, project implementation is not expected to impact this species.

Cantelow's lewisia (*Lewisia cantelovii*) - This perennial herb is a CNPS List 1B.2 species blooming from May through October. Cantelow's lewisia occurs in broadleaf upland forest, chaparral, cismontane woodland, and lower montane coniferous forest habitats. Despite suitable habitat, this species was not encountered during sensitive plant surveys; therefore project implementation is not expected to impact this species.

Cedar Crest popcorn-flower (*Plagiobothrys glyptocarpus* var. *modestus*) - Cedar Crest popcorn-flower is a CNPS List 3 annual herb blooming from July through August. This species occurs in cismontane woodland and valley and foothill grassland habitats. Suitable habitat for this species occurs at the project site; however, Cedar Crest popcorn-flower was not found during sensitive plant surveys and, therefore, project implementation is not expected to impact this species.

Follett's monardella (*Monardella follettii*) - This CNPS List 1B.2 plant species occurs in lower montane coniferous forest habitat. Follett's monardella is a shrub species that blooms from June through September. Although there are records for this species within the Grass Valley 7.5-minute quadrangle map in the CNDDB, the species was not observed within the project footprint; therefore project implementation is not expected to impact the species (DFG 2008).

Norris' beard-moss (*Didymodon norrisii*) - This moss species is a CNPS List 2.2 species that occurs within cismontane woodland or lower montane coniferous forest habitats. Norris' beard-moss was not observed during plant surveys; therefore the species would not be impacted by project implementation.

Pine Hill flannelbush (*Fremontodendron decumbens*) - Blooming from April through July, this evergreen shrub is a CNPS List 1B.2 as well as a Federal Endangered and State Rare species. Pine Hill flannelbush occurs in chaparral or cismontane woodland habitats. Although there are records for Pine Hill flannelbush within the Grass Valley 7.5-minute quadrangle map, this species was not observed at the project site during plant surveys; therefore project implementation is not expected to impact the species (DFG 2008).

Red Hills soaproot (*Chlorogalum grandiflorum*) - Red Hills soaproot is a CNPS List 1B.2 perennial herb flowering from May through June. This species occurs in chaparral, cismontane woodland, or lower montane coniferous forest habitats. Suitable habitat for this species occurs within the Osborne Hill trail network; however Red Hills soaproot was not observed during plant surveys and project implementation is not expected to impact this species.

Stebbin's morning glory (*Calystegia stebbinsii*) - This perennial rhizomatous herb is a CNPS List 1B.1 as well as a Federal and State Endangered species. Blooming from April through June this species occurs in chaparral openings and cismontane woodland habitats. Although Stebbin's morning glory is found within the Grass Valley 7.5-minute quad map, the species was not observed during plant surveys; therefore, project implementation is not expected to impact this species (DFG 2008).

Listed Plant Species Unlikely to Occur at the Project Site Due to Absence of Habitat or Species Out of Elevational Range

Bog club-moss (*Lycopodiella inundata*) - This CNPS List 2.2 perennial rhizomatous herb blooms from June through September. Bog club-moss occurs in bogs and fens and mesic lower montane coniferous forest habitats. Suitable habitat does not occur at the project site; therefore project implementation is not expected to impact this species.

Brownish beaked-rush (*Rhynchospora capitellata*) - Blooming from July through August, this perennial herb is a CNPS List 2.2 species. Brownish beaked-rush occurs in lower montane coniferous forest, meadows and seeps, marshes and swamps, and mesic upper montane coniferous forest habitats. Although the species is known to occur within the Grass Valley 7.5-minute quadrangle map, suitable habitat for this species does not exist at the project site; therefore project implementation is not expected to impact this species (DFG 2008).

Dubious pea (*Lathyrus sulphureus* var. *argillaceus*) - Located within the under story of cismontane woodland, lower montane coniferous forest, or upper montane coniferous forest habitats, this CNPS List 3 species is a perennial herb blooming from April through May. The top end of the elevation range for dubious pea is 1000 feet, which is over 1500 feet below the elevation of the park unit; therefore the project is not expected to impact this species.

Elongate club-moss (*Mielichhoferia elongata*) - Elongate club-moss is a CNPS List 2.2 moss species that occurs in vernally mesic cismontane woodland habitats. Although cismontane woodland habitat does occur within the project footprint it is not vernally mesic; therefore this species is not expected to be impacted by project implementation.

Red-anthered rush (*Juncus marginatus* var. *marginatus*) - This marsh and swamp dweller is a CNPS List 2.2 perennial rhizomatous herb species that blooms in July. Suitable habitat for this species does not occur at the project site; therefore, project implementation is not expected to impact the species.

Scadden Flat checkerbloom (*Sidalcea stipularis*) - Known records for this State Endangered and CNPS List 1B.1 species occur within the Grass Valley 7.5-minute quadrangle map (DFG 2008). Scadden Flat checkerbloom is a perennial rhizomatous herb that blooms from July through August within marshes and swamps. Due to the lack of suitable habitat within the project footprint, this species is not expected to be impacted by project implementation.

Wildlife Species

Wildlife is abundant in Empire Mine SHP considering the past land uses and close proximity to urban areas. The Empire Mine SHP Resource Management Plan lists a number of species found in the park unit, including: mule deer (*Odocoileus hemionus*), black-tailed jackrabbit (*Lepus californicus*), brush rabbit (*Sylvilagus bachmani*), western gray squirrel (*Sciurus griseus*), raccoon (*Procyon lotor*), turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), western scrub-jay (*Aphelocoma californica*), Stellar's jay (*Cyanocitta stelleri*) northern flicker (*Colaptes auratus*), and Pacific tree frog (*Hyla regilla*) (DPR, 1978).

The trail network in the Osborne Hills area runs through forest and chaparral habitats. DPR utilized the online USFWS species list and CNDDB species list for Grass Valley and the surrounding eight 7.5- minute quadrangle maps to obtain a list of special-status species for the proposed project; special-status wildlife species that have been documented in Empire Mine SHP or could potentially occur in or near the project site are described below.

Wildlife Species Known to Occur in Empire Mine SHP and Known to be Present on the Project Site

Nesting Raptors and Migratory Birds are protected by the federal Migratory Bird Treaty Act (16 U.S.C. 703-712), and by the state Department of Fish and Game Code (Sections §3503, §3503.5, and §3513). Under these laws, all raptors and migratory birds and their nests are protected. A wide variety of migratory birds and several raptor species potentially occur at the project site and construction activities, especially tree removal, could impact nesting birds if conducted during the breeding season.

California Spotted Owl (*Strix occidentalis occidentalis*). This California Species of Special Concern is resident in mixed-conifer and oak-conifer forests in the western slope region of the Sierra Nevada, often with a large tree component and in canyons or on north facing slopes in close proximity to water. California spotted owls are known to occur in Empire Mine SHP. Removing or fragmenting suitable habitat or conducting construction activities during the breeding season could result in potential impacts to this species.

Wildlife Species with Potential for Presence on the Project Site

Olive-sided Flycatcher (Contopus cooperi). This California Species of Special Concern nests in open canopy conifer forest near edge openings, usually at higher elevations. Suitable habitat is present at the project site and although trail construction in the non-breeding

season would not impact habitat suitability, tree removal during the breeding season could impact this species.

Yellow Warbler (*Dendroica petechia*). This California Species of Special Concern breeds typically in riparian vegetation such as willows or cottonwoods close to water, but also in montane chaparral (Shuford and Gardali 2008). A report from the early 1900's indicates that the yellow warbler was the most numerous warbler in the Grass Valley area (Richards 1924) but there are currently few documented nesting locations in Nevada County (Nevada County 2002, DFG 2008). Although no riparian vegetation would be disturbed, cutting trails in chaparral vegetation during the breeding season could impact this species.

Sensitive Bat Species. Empire Mine SHP is within the potential range of several sensitive bat species including the pallid bat (*Antrozous pallidus*), a California Species of Special Concern. Other species identified as medium to high conservation concern by the Western Bat Working Group with some potential to occur in or near the park unit include but are not limited to the hoary bat (*Lasiurus cinereus*), Yuma myotis (*Myotis yumanensis*), long-eared myotis (*Myotis evotis*), and long-legged myotis (Myotis volans). Roost trees and snags typical for tree roosting bat species are often large and in some stage of decay (Brigham et al. 1997) and the availability of trees fitting this description at the project site is limited. Closing open mine shafts could potentially impact cave roosting bat species. Tree removal during the maternal period or removal of large cavity trees or snags could impact sensitive tree roosting bat species.

Wildlife Species Potentially Occurring in or Near Empire Mine SHP, but Unlikely to Occur on the Project Site

California Red-legged Frog (Rana aurora draytonii). This Federal Threatened species and California Species of Special Concern is currently known to occur in a very limited number of sites in the Sierra Nevada, including one location in Nevada County over 8 miles from the project site (DFG 2008). Habitat for the California red-legged frog (CRLF) is characterized by dense, shrubby riparian vegetation associated with deep, still or slow-moving water (Jennings and Hayes, 1994). Two locations outside of the proposed project site, but within the boundary of Empire Mine SHP, could potentially provide habitat for CRLF. There is one small, old catchment pond in the park unit by the residences and Maintenance Yard north of the project site. The pond could provide marginal breeding habitat for CRLF, but no red-legged frogs have been recorded in this location during prior surveys. The Sand Dam area also could provide marginally suitable non-breeding habitat. There are no wetland areas in the proposed project site and no suitable breeding areas in close proximity to the southern boundary of the park unit, so the project site does not lie in a dispersal corridor between potential breeding sites. Because there would be no impacts to potential breeding or non-breeding habitat and the project site does not lie in a path between potential breeding areas, no impacts to CRLF are expected.

California Horned Lizard (*Phrynosoma coronatum frontale*). The California horned lizard is a California Species of Special Concern that feeds largely on native ants and other insects. There are no documented records of this species in Empire Mine SPH, but there are limited records near Grass Valley (DFG 2008). Horned lizards occur in several habitat types ranging from areas with an exposed gravel or sand substrate containing scattered shrubs, to clearings in riparian woodlands, to dry uniform chamise chaparral, to annual grassland with scattered

perennial seepweed or saltbush (Jennings and Hayes, 1994). They typically occur in open areas with loose, sandy soil where basking opportunities and abundant native ant populations are found (Jennings and Hayes 1994). Suitable habitat is very limited in the project area and no California horned lizards were detected during focused surveys in the project area or other locations in Empire Mine SHP in the summer of 2008 by a DPR biologist and private biological consultants with Vestra Resources. No impact.

Foothill Yellow-legged Frog (*Rana boylii*). This California Species of Special Concern occurs in clear west-side Sierra Nevada rivers and creeks with gravel or rock substrate and sunny banks in forest or woodland habitats. Foothill yellow-legged frogs are known to occur in a number of Nevada County drainages but have not been documented in Empire Mine SHP or any nearby streams (DFG 2008, Nevada County 2002). Suitable habitat for the highly aquatic foothill yellow-legged frog does not occur in or adjacent to the project site and project activities are anticipated to have long-term benefits to water quality feeding downstream from the park unit. No impact.

Northwestern Pond Turtle (*Emys* [=Clemmys] *marmorata*). This California Species of Special Concern inhabits still or slow moving aquatic habitats with submergent or emergent vegetation and also requires open basking areas and sandy or loose soil sites to lay eggs (Jennings and Hayes 1994). No aquatic habitat would be impacted and suitable egg-laying sites do not occur at the project site. No impact.

Purple Martin (*Progne subis*). This California Species of Special Concern is a social cavity-nesting swallow that breeds mainly in open conifer forests of northwestern California but also in scattered locations throughout other areas of California, including in the western Sierra Nevada (Williams 2002, Shuford and Gardali 2008). Purple martins were known to nest in the town of Grass Valley in the past but this population, along with many others throughout the state, is no longer extant (Richards 1924, Williams 2002). Nest site competition with European starlings (*Sturnus vulgaris*) and reduced availability of large snags on ridges and upper slope areas suitable for nesting are thought to be major contributors to the large decline in breeding purple martins in California (Shuford and Gardali 2008). There are no known purple martin colonies in or near the project site and there would be no negative impacts to potential nesting habitat. No impact.

Northern Goshawk (*Accipiter gentilis*). This California Species of Special Concern is resident in mature and old-growth forest stands generally above 2500 feet elevation in the Sierra Nevada (Shuford and Gardali 2008). There are documented nesting territories in Nevada County, but not in or near the project site (DFG 2008). The limited areas of habitat suitable for northern goshawks would not be negatively impacted by project activities and no suitable nest trees would be removed. No impact.

Yellow-breasted Chat (*Icteria virens*). This California Species of Special Concern nests locally along low and middle elevation streams of the western Sierra Nevada, including in Nevada County (Shuford and Gardali 2008). Typical nesting habitat is dominated by willows and alders and contains a dense shrub layer. Nesting has been documented along Little Wolf Creek (Nevada County 2002) and there is suitable nesting habitat in the Sand Dam area of the

park unit. No riparian vegetation or suitable nesting habitat would be impacted by project activities. No impact.

Little Willow Flycatcher (*Empidonax traillii brewsteri*). This State Endangered subspecies nests in riparian areas, willow thickets, and wet meadows in the western Sierra Nevada. Although little willow flycatchers are not known to occur in or near Empire Mine SHP, potentially suitable habitat occurs in the Sand Dam area. No riparian vegetation or suitable nesting habitat would be impacted by project activities. No impact.

Wildlife Species Not Known from Empire Mine SHP and Unlikely to Occur on the Project Site Due to Absence of Habitat or Species Out of Elevational Range

Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus). This Federal Threatened beetle occurs in association with blue elderberry (*Sambucus mexicana*) shrubs in riparian and oak savannah habitat at elevations generally below 3000 feet. There are no elderberry plants in or near the project site. No impact.

Delta Smelt (*Hypomesus transpacificus*). The delta smelt is a Federal and State Threatened fish that occurs in the Sacramento and San Joaquin Delta and is not known to occur in Nevada County. No impact.

Central Valley Steelhead (*Oncorhynchus mykiss irideus*). This Federal Threatened anadromous fish occurs in the Sacramento and San Joaquin rivers and their tributaries. Steelhead breed in areas with cold water flowing over gravel beds. A spillway and dam occur downstream from the project site and this eliminates any potential for anadromous fish to be present. No impact.

Central Valley Chinook Salmon, winter run and spring run (*Oncorhynchus tshawytscha*). The winter run of this anadromous fish is Federal and State Endangered and the spring run is Federal and State Threatened. The winter run spawns in the Sacramento River and the spring run spawns in the Sacramento River and large perennial tributaries. Cold, clear water flowing over suitable gravel beds is required for spawning. A spillway and dam occur downstream from the project site and this eliminates any potential for anadromous fish to be present. No impact.

California Black Rail (*Laterallus jamaicensis coturniculus*). This State Threatened species occurs in coastal marshes, but also rarely in freshwater marshes of the western foothills of the Sierra Nevada. Suitable habitat does not occur at the project site and does not appear to be present in the park unit and there would be no impacts to wetland habitats. No impact.

Sensitive Natural Plant Communities

Sensitive natural plant communities are communities that are especially diverse, regionally uncommon, or of special concern to local, state, and federal agencies. Removal or substantial degradation of these communities would constitute a significant adverse impact under CEQA. A search of the CNDDB did not result in any records for sensitive natural plant communities within the Grass Valley and surrounding eight 7.5-minute quadrangle maps (DFG 2008).

Tree Preservation and Protection Ordinance

Since DPR is a State entity, it is exempt from city and county ordinances. However, DPR biologists reviewed and took into account local ordinances during the project planning phase. The Nevada County Zoning Regulations aim to minimize tree removal through protection and preservation (Nevada County 2007). The County strives to minimize development projects in landmark and heritage groves (Nevada County 2007). These are defined respectively as groves associated with a historically significant structure or groves of historical value, those that have unusual species, or those that have outstanding specimens (Nevada County 2007). The Grass Valley Ordinance requires a tree removal permit if the trees scheduled for removal are over eighteen inches diameter-at-breast-height (dbh) on any public land (City of Grass Valley 2004).

An exemption exists within the Grass Valley Ordinance that permits tree removal for "activities associated with the establishment or alteration of any public park" (City of Grass Valley 2004). The proposed DPR project is not a development project; the project would reconstruct existing, construct new, and close road/trail alignments that are undergoing heavy erosion, or that pass through sites with elevated metals. Dominant tree and large shrub species within the Osborne Hill trail network include incense cedar, ponderosa pine, Douglas-fir, black oak, and stands of mature manzanita. There are no landmark or heritage groves at the project site or that would be affected by project implementation. New road/trail alignments would circumnavigate trees that are equal to or greater than fifteen inches dbh, based on DPR standards for this area of the Sierra Nevada foothills.

Wetlands and Waters of the United States

The U.S. Army Corps of Engineers (ACOE) defines wetlands as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The majority of ACOE jurisdictional wetlands meet three wetland delineation criteria: (a) hydrophytic vegetation, (b) hydric soil types, and (c) wetland hydrology.

There are no jurisdictional wetlands at the proposed project site. The park road that could be used to access the project site crosses Little Wolf Creek which is considered a "Waters of the United States" under ACOE jurisdiction. DPR biologists identified Little Wolf Creek as a "Waters of the United States" by the presence of a scoured streambed and ordinary high water mark. Sediment entering Little Wolf Creek at the crossing location or flowing downhill from the project site could enter the creek, the riparian strip upstream and downstream of the crossing, or downstream where the creek flows through the Sand Dam area.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a sensitive, candidate, or special status species in local or regional plans, policies, or regulations, or by the California Department of	☐	☒	☐	☐

Fish and Game or the U.S. Fish and Wildlife Service?				
b) 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 California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands, as defined by §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?	☐	☐	☒	☐
d) 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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Biological Resources is based on criteria **IV a – f**, described in the environmental checklist above.

DISCUSSION

a) The proposed project would reconstruct existing roads/trails, construct new roads/trails, and close certain road/trail alignments throughout the Osborne Hill trail network. In order to reduce impacts to sensitive, candidate, or special status species to a less than significant level, the following proposed measures would be implemented.

Humboldt lily is a locally important and CNPS List 4.2 plant species found throughout the Osborne Hill trail network. The following measure will minimize potential effects to this species to a less than significant level.

MITIGATION MEASURE BIO-1: HUMBOLDT LILY
• During all trail work, DPR will remove excavated soil along the trail segments. No excavated soils will be side cast into the surrounding habitat in order to minimize impacts to the Humboldt lily. DPR will use excess excavated soil that does not contain elevated metals to raise the tread along other trail alignments where needed or remove it from the project site.

True's manzanita is another locally important plant and a CNPS List 4.2 species that is found along some of the proposed alignments. To prevent impacts to this species, the following avoidance measure will reduce potential effects to the True's manzanita to a less than significant level.

MITIGATION MEASURE BIO-2: TRUE'S MANZANITA
• Prior to the start of construction, a DPR-qualified biologist will flag all True's manzanita found along the trail alignments. • DPR will install and maintain fence around all flagged True's manzanita plants to avoid impacts during construction and will remove any fencing after construction activities are completed.

The California red-legged frog (CRLF) is a Federal Threatened species that is currently known to occur in a very limited number of locations in the Sierra Nevada Range. Although the closest documented occurrence is greater than eight miles from the project site, limited potentially suitable habitat occurs in Empire Mine SHP. In addition to wetland and riparian habitat avoidance, the following measures will reduce potential impacts to CRLF to a less than significant level.

MITIGATION MEASURE BIO-3: CALIFORNIA RED-LEGGED FROG (CRLF)
• Prior to construction, a USFWS-approved biologist will conduct a training session to familiarize all construction personnel with identification of California red-legged frogs (CRLF) and other sensitive species, their habitat, general provisions and protections afforded by the Endangered Species Act, measures implemented to protect the CRLF and other sensitive species, and a review of project boundaries. During this training, all construction personnel will be provided with species identification cards (that include species photos) for the CRLF. All construction personnel will complete the training before they are authorized to work on the project site. • DPR will designate an official point of contact (POC) to be onsite during construction activities in case a CRLF is found. If a CRLF is found onsite, all work in that location will be halted until the DPR Project Manager is contacted and the USFWS-approved biologist and the USFWS are consulted for further direction. • A USFWS-approved biologist will be present at all times during installation and removal of the temporary stream crossing at Little Wolf Creek. • All work will occur during daylight hours.

A pair of California spotted owls is known to occur in Empire Mine SHP. Other raptors and sensitive birds (e.g., yellow warbler, olive-sided flycatcher) could also be present at the project site and could be nesting in the vicinity of the project. Raptors and their nests are protected under the Fish and Game Code §3503.5 and the Migratory Bird Treaty Act (MBTA). As described in the Environmental Setting, new road/trail alignments would circumnavigate trees with a dbh equal to or greater than fifteen inches, based on DPR standards for this area. The following measures will prevent the disturbance or loss of an active nest and reduce impacts to nesting raptor and sensitive bird habitat to less than significant.

MITIGATION MEASURE BIO-4: NESTING RAPTORS AND SENSITIVE BIRDS

- To the extent possible, all outside construction activities and tree removal will occur outside the breeding season (breeding season is March 1 – August 31) for nesting raptors and sensitive birds.
- If construction activities are required during the California spotted owl breeding season (March 1 – August 31), protocol-level surveys to determine nesting status will be required. If the owl pair is determined to be non-breeding, construction activities will be permitted. If the owl pair is determined to be breeding, no tree removal or construction activities with the potential to create noise disturbance will be allowed within 1000 feet of the active nest until after the young have fledged and have the ability to fly out of the area of disturbance, as determined by a DPR-qualified biologist.
- If tree removal or initiation of construction activities which could potentially cause take of other nesting raptors or sensitive birds (as determined by a DPR-qualified biologist) are necessary during the breeding season (March 1 – August 31), pre-construction surveys will be required. If nesting raptors or sensitive birds are found at the project site, a buffer area of 250 feet will be established around the nest(s) and no activities which could potentially cause nest failure will be permitted until the nest is vacated and the juveniles have fledged, as determined by a DPR-qualified biologist.
- DPR trail crews will avoid placing trail alignments within the Structural Root Zone (i.e., three times diameter at breast height (dbh)) of trees that are equal to or greater than fifteen inches dbh (12 inches dbh for deciduous trees) where possible. If excavation work within the Structural Root Zone is required, no roots larger than two inches in diameter will be severed.
- No trees equal to or greater than fifteen inches dbh will be removed unless inspected by a DPR-qualified biologist and determined to be unsuitable as nesting habitat for California spotted owls and other sensitive birds.
- Construction of new road/trail alignments will be monitored at the discretion of a DPR-qualified biologist to ensure that impacts to California spotted owl and sensitive bird species nesting habitat is minimized.

Migratory Birds are protected under the MBTA and Fish and Game Code §3503.5. Potential exists for a variety of migratory birds to be nesting at the project site and vegetation removal during the breeding season could impact nesting migratory birds. The following project requirements will reduce impacts to these species to a less than significant level.

PROJECT REQUIREMENT BIO-5: NESTING MIGRATORY BIRDS
• To the extent possible, all outside construction activities and habitat removal will occur outside the breeding season (breeding season is March 16 – August 15) for nesting migratory birds. • If nesting habitat removal or initiation of construction activities which could potentially cause take of nesting migratory birds (as determined by a DPR-qualified biologist) are necessary during the breeding season (March 16 – August 15), pre-construction surveys will be required. • If nesting migratory birds are found at the project site, a buffer area of 100 feet will be established around the nest(s) and no activities which could cause nest failure will be permitted until the nest is vacated and the juveniles have fledged (as determined by a DPR-qualified biologist).

Empire Mine SHP lies in the range of several sensitive bat species. Removal of trees that provide suitable roosting habitat could impact sensitive bat species. Closure of open mine shafts that provide suitable cave roosting habitat could also impact sensitive bat species. The following project requirements will reduce potential impacts to sensitive bat species to a less than significant level.

PROJECT REQUIREMENT BIO-6: SENSITIVE BAT SPECIES
• No removal of trees which could provide roosting or maternity colony habitat for bats (as determined by a DPR-qualified biologist) will occur between March 1 – August 15. • Any open mine shafts proposed for closure will be assessed for bat roosting or maternity colony suitability by a DPR-qualified biologist prior to closure. If mines proposed for closure are suitable for bats, then bat-friendly closure methods will be utilized (such as using a gate to close access from the public but still allow bat entry).

b) There are no sensitive plant communities present that could be impacted by project implementation at the project site. Riparian habitat bordering Little Wolf Creek could be impacted by erosion and sedimentation caused by project related ground disturbing activities for construction of new roads/trails and reconstruction of existing roads/trails. Implementation of **PROJECT REQUIREMENTS HAZMAT-2** and **HYDRO-1** will reduce potential impacts from erosion and sedimentation to a less than significant level.

c) No wetlands would be directly impacted as a result of the proposed project activities. DPR would use Best Management Practices (BMPs) and other protection measures to prevent sediments or construction related contaminants from entering Little Wolf Creek or the Sand Dam Area. **PROJECT REQUIREMENTS HYDRO-1** through **HYDRO-3** will be incorporated into the project design to avoid indirect impacts from sediments or construction related contaminants entering Little Wolf Creek. Less than significant impact.

d) The proposed project would not impede fish passage or wildlife movement. The proposed temporary creek crossing over Little Wolf Creek would include a culvert system to allow fish passage. The existing condition includes a network of fences to keep the public off of existing trails where testing has indicated elevated levels of metals in the soil. Openings to allow wildlife movement have been established in these fences. Potential impacts from the proposed project would have a less than significant impact on fish passage and wildlife movement.

e,f) As discussed in the Environmental Setting above, the proposed project would be designed to ensure there are no conflicts with any local ordinances, adopted conservation plans, or policies. No impact.

V. CULTURAL RESOURCES

ENVIRONMENTAL SETTING

Located on the western slope of the Sierra Nevada Mountain Range in Nevada County, California, Empire Mine SHP lies approximately 62 miles northeast of Sacramento and encompasses approximately 853 acres (DPR 2008, Kim Snyder 2008). Added to the State Park System in 1975, the Empire Mine property contains numerous historic (i.e., cultural) resources which vary from dilapidated mining structures and overgrown mining and stamp milling sites, to the Willis Polk designed stone cottage constructed for former mine owner W.B. Bourn Jr.

Ethnographic Context

The following ethnographic and prehistoric cultural contexts are provided by Sierra District Archaeologist Denise Jaffke and excerpted from *Archaeological Survey report and Extended Field Investigation for Memorial Trail, Empire Mine State Historic Park, Grass Valley, CA. Memorial Park Connector Project, April 2006*, except where otherwise noted.

Empire Mine SHP is within the territory of the Hill Nisenan, or Southern Maidu, a "sub-tribe" of the Maidu language/culture group. Nisenan territory once included the lands encircling the lower reaches of the Yuba, the American, and the Feather rivers to the east bank of the Sacramento River and extending to the 10,000-foot Sierra crest. The Nisenan territory bordered that of the Konkow, Patwin, Miwok, Washoe, and Maidu.

The Hill Nisenan are thought to have subsisted on a diet comprised of about 50% vegetal, 30% terrestrial wildlife (e.g., mammals, terrestrial reptiles, insects), and 20% aquatic resources (e.g. fish and other aquatic animals). Typical of the California cultural area (excluding the Sacramento-San Joaquin river basins), the Nisenan would be included in Baumhoff's "California acorn-game adaptation" (Baumhoff 1963). The settlement-subsistence strategy characteristic of this type of adaptation consisted of sedentary groups living in a seasonally structured environment, dependent on stored foods, primarily acorns, for winter sustenance. Small logistical groups would participate in task specific expeditions to acquire resources throughout the remainder of the annual cycle (Baumhoff 1963). Black oak acorns provided the staple food, supplemented by berries, seeds, deer, fowl, fish, rabbit, and occasionally larger animals such as black bears. Nisenan exported black oak acorns, pine nuts, manzanita berries, skins, bows and bow wood to surrounding territories. Imports from the Sacramento Valley included fish, roots, certain grasses, shells, beads, salt and feathers. The Hill Nisenan traded acorns and shells for Washoe seed beaters and dried fish (Wilson and Towne 1978).

The Hill Nisenan lived in multi-family villages or in extended-family hamlets, several of which could be grouped together under coordination of a leader who generally occupied the largest village. Villages tended to be located below 3,000 feet in elevation, usually in small valleys and open canyons. Families aggregated in villages for the winter, but generally were dispersed to logistical camps at various times from the spring through fall. This pattern of seasonal aggregation and dispersal was characteristic of most Native American peoples living along the western slope of the Sierra Nevada (Wilson and Towne 1978).

The Hill Nisenan were overrun by gold seekers flocking to the foothills during the Gold Rush that began in 1849. Within a period of two to three years, Hill Nisenan suffered widespread death and destruction with few surviving Nisenan living at the margins of foothill towns. Those who remained found work in agricultural, logging, ranching and domestic industries (Wilson and Towne 1978). Rapid disruption of the Native American central Sierra territories during the Gold Rush precludes precise pre-contact population estimates. Kroeber (1925) estimates about 9,000 persons while Cook (1964) approximates a figure of 8,000 individuals, although these estimates pertain to the entire Maidu population, including Nisenan.

Prehistoric Context

The prehistory of the Empire Mine SHP follows the cultural sequence of the northern Sierra Nevada. The Native American occupation of the area begins more than 10,000 years before present (B.P.). The revised cultural chronology for the northern Sierra region recognizes five phases beginning with "Pre-Martis" (> 5,000 B.P.); Early Martis (ca. 5,000-3,000 B.P.) is often identified by Martis Contracting Stem and Martis Split Stem points; Late Martis (ca. 3,000-1,300 B.P.) is distinguished by Martis Corner Notched, Elko Corner Notched and Elko Eared series points; Late Archaic is divided into the Early Kings Beach Phase (ca. 1,300-800 B.P.) and typified by Rosegate and Gunther Series projectile points, and; Late Kings Beach Phase (ca. 800-150 B.P.) is marked by Desert Side-notched and Cottonwood series projectile points (Elston et al. 1994). Martis and Kings Beach populations utilized upland and lowland resources based upon seasonal rounds. The lowland resource areas were predominately used during the fall and winter, while upland resources were exploited during the spring and summer before and after seasonal snow.

Artifacts from the Pre-Martis tend to consist of stone-tools and basalt projectile points of the split stem Pinto and Humboldt Concave Base series (Elston et al. 1994, 1977, Markley and Henton 1985, Moratto 1984). Dating archaeological materials to the Pre-Martis Phase is problematic as the overall sample size of Pinto and Humboldt projectile points is relatively small and the range of dates assigned to them varies greatly between the regions in which they are found (Elston et al. 1994).

The Martis Complex (ca 5,000-1,300 B.P.), commonly referred to as the "Middle Archaic," was first identified at site CA-Pla-5 in The Martis Valley, south of Truckee. The Martis Phase is defined by a heavy reliance on basalt flaked stone scrapers, drills, large dart points, and hand and milling stones, and appears to reflect an economic focus on hunting and seed-gathering. Martis Phase projectile point types consist of large atlatl points of the Martis and Elko series. Additional artifacts include key-shaped drills, large bifaces and retouched flakes (Elston et al. 1994:16, 17; Markley and Henton 1985:36, 46-48; Moratto 1984:294-298). The distribution of Martis artifacts within the Sierra Nevada Mountain Range is not fully understood and it has been noted that projectile points from prehistoric sites as far west as the Sacramento Valley of California are similar in both style and material type (Markley and Henton 1985, Wohlgemuth 1984).

The later King's Beach Phase (ca. 1,300-150 B.P.), in contrast, was characterized by chert and obsidian toolstone, bedrock mortars, smaller projectile points (presumably arrow points), and an economic emphasis on fishing and seed-gathering. The King's Beach Complex is usually attributed to the ethnographic Washoe. CA-Pla-9 on the north shore of Lake Tahoe is the type

site for the Kings Beach Complex.

The general trend of cultural development is expressed through the gradual elaboration of the technological and subsistence bases with a progressive refinement of social, political and ceremonial aspects of culture. Three key technological shifts are expressed in the northern Sierra archaeological record, the first of which was the replacement of the atlatl by the bow and arrow around 1300 B.P. Secondly, milling equipment and features become increasingly abundant after 500 B.P. which suggests intensified exploitation of acorn as a staple food source. Lastly, the use of basalt and slate as tool stone reduces while exotic materials, such as obsidian increase. The amplified use of obsidian likely indicates improved trade relations and expanding networks (Jaffke 2006).

Historic Context

In 1848, shortly after Marshall's discovery of gold in Coloma, prospectors from California and Oregon explored the region and by 1849, mining camps began to grow at locations of the rich strikes. Soon, miners from around the world spread out across the foothills of the Sierra Nevada Range with individual mining claims. During this time, placer gold was found in Wolf Creek, at present day Grass Valley, Nevada County, and extracted using tools such as picks, shovels, and pans. As miners depleted the easily obtained placer deposits, prospectors continued their quest for deeper and more dispersed deposits throughout the region. In 1850, George McKnight discovered gold bearing quartz on the Gold Hill Ledge about one mile west of what would become the Empire Mine. This discovery and the flurry of hard rock mine prospecting that followed helped Grass Valley become one of California's premier hard-rock mining districts in California. Other quartz ledges included Massachusetts Hill, Ophir Hill, and Rich Hill; Ophir Hill ledge, also discovered by George McKnight, would eventually become Empire Mine. The workings of mines such as Empire Mine consistently set the production standard in California for over a century (McQuiston 1986, Selverston 2008).

The shift from placer mining to hard-rock mining led to new techniques that required a major transformation in business organization and technology. Hard-rock mining required an experienced work force and capital investments to fund exploration, equipment, and operations. Absentee investors primarily owned mining corporations and provided capital for them to purchase equipment, construct tunnels, shafts, arrastras and mills and hire men to work the mines. Although the hard-rock mining industry hired individual prospectors, turning them into wage laborers, more experienced miners were needed (Selverston 2008).

Early hard-rock miners were of Mexican descent, who had honed their skills in the gold, silver or copper mines of Northern Mexico. In time the Mexican Miners were supplanted by tin miners arriving from England and by the mid 1860s, Irish and Cornish miners also known as "Cornishmen or Cousin Jacks" made up the majority of miners in large hard-rock mining camps and boarding houses in the area. By 1861 most hard-rock mining in the Grass Valley area was carried out by the Cornish (Lingenfelter 1974, Selverston 2008).

The influx of the Cornish miners brought new technology. One of most valuable contributions these miners would bring to hard-rock mining was the Cornish pump. Cornish pumps were used to clear the water from the deep mine shafts and to continuously keep those mines operational. In 1855, "the first Cornish pump was built and installed at the Gold Hill Mine" in

Grass Valley. The Cornish pump employed by the Empire Mine was capable of pumping out as much as 18,000 gallons of water per hour.

In addition to the Cornish Pump, the stamp mill played a major role in the extraction of ore from the hard rock. Pulverizing the gold-laden ore proved to be a far more complex process for men who had until then only engaged in the simpler technique of placer mining. Some chose to utilize a device that had proven successful for centuries, the primitive, mule-driven, *arrastras*. Though effective, it could not crush rock fast enough for men impatient to crush large amounts quickly. This impatience led to the development of the "California Stamp mill." In time with innovative technology such as the Cornish pump and stamp mills, the quartz mines of the Grass Valley-Nevada City area became the most productive in California and eventually ranked as third most productive in the United States (Holliday 1999, McQuiston 1986).

Empire Mine became one of the most successful mines. In its first twenty years, the Empire Mine would change ownership several times. George D. Roberts held the original Ophir claim for less than a year, selling it in 1851 to Woodbury, Parks and Company who consolidated it with other nearby claims under the Ophir name. Poor management and ore processing problems resulted in the sale of the property at auction in 1852. John P. Rush purchased one-half interest in the mine and the Empire Quartz Hill Company purchased the other half. Two years later, in 1854, Rush sold his one-half interest in the mine to the Empire Quartz Hill Company and the mine was incorporated as the Empire Mining Company. The Incorporated Empire Mining Company's board included lode-mining pioneers C.K. Hotaling, James O'Neil, B.B. Laton, Fred Jones, Silas Lent, James H. Wilcox, Thomas Barnstead, W. W. Wright, James Beauchamp, Richard Groat and John Southwick. In 1855 the company employed 34 miners and six surface workers and by 1856 the company had constructed a new steam-powered six-stamp mill. Gold production from initial discovery in 1850 to May 1854 was estimated to be about 15,000 ounces which was worth approximately $300,000. With the help of organized labor and technological improvements, the Empire Mine produced 28,100 tons of gold quartz ore from May 1854 through December 1863. (McQuiston 1986, Selverston 2008).

In 1864, Empire Mine again changed hands with Captain S.W. Lee and A.H. Houston assuming ownership. In Grass Valley alone, 30 quartz mills were dropping 284 stamps and crushing 72,000 tons of ore per year with an average yield of $30 to $35 per ton. There were 1600 men working in the industry (McQuiston 1986). At this same time, 1867, half-interest in the Empire Mining Company was sold to a group of San Francisco investors. More importantly, it was also the period when William Bowers Bourn, a San Francisco capitalist who had been buying stock for several years, began to increase his holdings. By 1869, Bourn had acquired control of the company (McQuiston 1986).

As a young man, William Bowers Bourn (1813 – 1874) entered the banking business in New York but moved to San Francisco in 1850 to help his father-in-law, Captain George Chase, in the maritime shipping industry. Shortly after arriving in San Francisco, Bourn re-entered the banking business and became an active trader in the local exchanges (McQuiston 1986). As a trader in the 1860s, Bourn invested heavily in the Empire Mine and by 1869 he controlled the Empire Mining Company. In September 1870 a fire destroyed the 30-stamp mill that had been constructed in 1865. By the end of 1871, the company built a 20-stamp mill of an advanced design and it was functioning at a rate more productive than that of the 30-stamp mill, which by

this time had been destroyed. By the end of 1873 the company employed 80 miners and 11 men working at the mill (McQuiston 1986, Selverston 2008).

In 1874, William Bowers Bourn, Senior, passed away leaving the Empire Mine Company in the control of his estate until 1878 when his 21 year-old son, William Jr., assumed control of the business. Within a year, Bourn Jr. had reorganized the mine under the Original Empire Mill and Mining Company and by 1883 the Empire Mine was once again profitable (McQuiston 1986, Steinfeld 1996).

By 1888, Bourn Jr. sold a controlling interest in all his holdings to James D. Hague (McQuiston 1986). Under new ownership the Empire Mine experienced years of diminishing return and operated at a loss before Bourn, would once again demonstrate his faith in the mine. In 1896, Bourn repurchased control of the Empire Mine and reorganized it as the Empire Mines and Investment Company (McQuiston 1986). Bourn suffered a debilitating stroke in 1922, and with the death of his only daughter in 1929 he sold his interests to Newmont Empire Mines Company, a subsidieary of Newmont Mining Corporation, marking the end of 52 years of family ownership (McQuiston 1986). Empire-Star Mines Company was formed to own and operate the Empire Mine, as well as the North Star Mine, which was purchased soon thereafter.

The Great Depression had a negligible impact upon the Empire Mine, as Empire-Star Mines Company continued to acquire and develop additional gold mines. In 1930, as a result of the merger of the Empire and North Star Mining properties, Empire-Star Mines Company was the number one gold producer in California. This merger incorporated other important mines in the area, and from 1920 to 1941 the district was enormously productive, employing nearly 4,000 miners. From 1929 to 1954, Empire-Star Mines Company increased the depth of the Empire Mine and added more holdings in and around Grass Valley and Nevada City (McQuiston 1986, Selverston 2008).

The Gold Reserve Act of 1934 strengthened the reliance on U.S. currency notes over gold, allowing the country to regain a gold standard. The rising value of gold led to a resurgence in mining in the area that lasted from 1936 until 1941. The mines were shut down during World War II and reopened soon afterward, but with decreasing productivity. The Empire-Star Mines Company, Ltd., one of the largest operators, closed in 1957. In 1958, the entire holdings of Empire Mine were sold at public auction, and it took until December of 1961 for the last vestiges of the company to be liquidated and for the last remaining employees to leave the premises. Eight years later, in 1969, the headframe was identified as a safety hazard and demolished (McQuiston 1986, Selverston 2008).

In 1974, DPR acquired 770 acres of land for the creation of Empire Mine SHP. The $1.43 million acquisition included the remaining Empire holdings such as all standing buildings, structures and the remnants of mining operations that spanned over 100 years. The purchase price, however, excluded mineral rights up to 250 feet deep in some places. In Spring 1975, the property, at that time named Empire Mine State Park, became a unit of the State Park System. DPR reclassified the unit as a state historic park in 1976 and nominated it for listing on the National Register of Historic Places. The areas of significance noted on the nomination are identified as historic archaeology, architecture, and industry. The nomination focused on the historic architecture and buildings within the park unit, but also elaborated on the

continuous mining operations from 1850-1956 (DPR 1978).

While Empire Mine and its various operations were the predominant mines in the area, other mines also had various levels of success. In the 1860s, Captain Stephen W. Lee of Grass Valley and Alex Houston of San Francisco, who had also invested in Empire Mine, were actively acquiring a number of adjacent mines including the Betsy by 1861, the Heuston Hill by 1863, and the Osborne Hill by 1867. By the 1870's there were approximately a dozen mines operating on Osborne Hill with each knoll on the ridge extending south of Little Wolf Creek having its own name such as Prescott Hill, Daisy Hill, and King Hill. Mines bearing the names of the knolls were not officially patented until the late 1880s (Selverston 2008).

Specific examples of mines on Osborne Hill include the Sebastopol and the Betsy mines. In 1858 John Judd, Benjamin Macauley and William and Robert Watt worked the Sebastopol Mine located on the north side of Osborne Hill. Betsy Mine (i.e., Wheal Betsy) (Betsy Mine) was located on the western side of Osborne Hill. By 1867 the Betsy Mine already included hoisting works and pumping machinery. Eventually, the Orleans Mining Company would patent the Prescott Hill quartz claim, Heuston Hill, Madison Hill, Fillmore and the Betsy Mines (Selverston 2008).

Land survey maps from the U.S. Department of the Interior General Land Office (GLO) show that road alignments, buildings, and other mining structures existed on claims in the Osborne Hill area. Selverston (2008) states that the survey plats depict pre-1885 mining related construction activities including numerous roads and mining excavations on both sides of Wolf Creek; some large waste rock dumps on the south side (i.e., Betsy Mine and Heuston Hill); a stone powder house by the Betsy; hoisting works over the Prescott Hill incline shaft; the caved-in Heuston Hill incline shaft south of the creek and its drain tunnel on the north; the Orleans Quartz Mill in the Fillmore claim near the creek; two houses on either side of the mill; and the Empire Ditch depicted in the Heuston and Madison claims. The mineral survey also depicts several contemporaneous and caved shafts including Conlon's 300-foot tunnel with tramway and dump; the Norton incline; and another incline with excavations for hoist works, blacksmith shop, superintendent's office, and a boardinghouse for the miners (Selverston 2008).

In addition to the mining infrastructure described by Selverston (2008), the mining survey maps also show road alignments already established in the areas of the Jefferson Conlon (i.e., Conlon), Daisy Hill, New Ophir, Sanders Ledge, Nevada Quartz, Brockington, and Happy Jack mines. Developed shafts were numerous in these areas as exemplified at the Heuston Hill Quartz Mine where six were constructed by 1885 and at Prescott Mine where more than a dozen were constructed. Additionally, mineral survey maps detail the existence of fences (e.g., New Ophir), coyote holes (e.g., Sunrise, Pine Tree Lode), cabins (e.g., Sanders Ledge), ditches (e.g., Nevada Quartz, Happy Jack, and others) and additional waste rock and tailing dumps (e.g., Daisy Hill and others). These mines were smaller in scale than the Empire Mine and were eventually consolidated as part of the Empire Mine operation. They included the above-mentioned features as well as stamp mills, adits, shaft fences, tailing piles and other mining related features, buildings and structures. These mines were part of the DPR park unit property acquisition (Selverston 2008).

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Cause a substantial adverse change in the significance of a historical resource, as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource, pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Cultural Resources is based on criteria **V a – c**, described in the environmental checklist above.

DISCUSSION

a) The project proposes to reconstruct existing, construct new, and close recreational roads/trails to reduce soil erosion, minimize the production of sediment, remediate elevated metals in the soil on the road/trail surfaces, and protect public health. Some of the existing alignments are historic features and likely contributing features to the Empire Mine National Register of Historic Places (NRHP) Historic District. In most cases roads and other linear features such as water conveyance ditches and railroad alignments that exist at Empire Mine SHP have historic informational value or retain historic significance for their location because abandoned roads tend to retain a physical imprint on the landscape even when they have been overgrown with vegetation. Although DPR proposes to close historic roads/trails as part of the proposed project, DPR would abandon the middle portion of each historic alignment between the beginning and end of the road/trail to convey the historic sense of place. Historic roads/trails that would remain part of the proposed Osborne Hill trail network could be located adjacent to or cross environmentally sensitive areas; providing public access to these areas could impact sensitive resources. Implementation of **MITIGATION MEASURE CULT-1** described below will ensure that the trails retain their historic feeling, while reducing impacts to a less than significant level.

MITIGATION MEASURE CULT-1: RECORDATION AND TREATMENT OF CULTURAL RESOURCES FOR ROAD/TRAIL CLOSURES
• Prior to the start of construction, a DPR-contracted cultural resource specialist will record all historic features within the Osborne Hill area of Empire Mine SHP to update the National Register of Historic Places nomination of the entire park unit and identify the contributing historic features within the historic district. • DPR trail crews will re-contour and close only the beginning and end portions of each

historic road/trail identified for closure to block access; DPR trail crews will abandon the middle portion of each road/trail in place to retain the footprint of the alignment on the landscape.
- All historic features within fifteen feet of any road/trail alignment in the proposed Osborne Hill trail network will be fenced at the discretion of the DPR-qualified cultural resources specialist to protect the features from damage.

The project also proposes to construct new road/trail alignments, install signage and fencing, and install mine shaft safety equipment. New trails could be located adjacent to or even cross environmentally sensitive areas. Due to the dense brush and thick ground cover at the project site, DPR and/or its contractors have not been able to identify all historic features or cultural resources that could be impacted by new trail construction. **MITIGATION MEASURE CULT-2** described below will ensure that project activities have a less than significant impact on these potentially eligible historic resources.

MITIGATION MEASURE CULT-2: RECORDATION AND TREATMENT OF CULTURAL RESOURCES FOR TRAIL CONSTRUCTION

- Prior to the start of construction of each segment, a DPR qualified cultural resources specialist will identify and flag cultural resources present within each trail alignment that will be avoided during trail construction.
- All trail construction will be monitored at the discretion of a DPR-qualified cultural resources specialist.
- If intact cultural features are uncovered during trail construction by anyone, the DPR-qualified cultural resources specialist will record and evaluate the find and implement avoidance, preservation, or recovery measures. If avoidance is required, trail crews will modify the trail alignment to avoid the previously unknown resources at the direction of the DPR-qualified cultural resources specialist and in coordination with any necessary regulatory agencies.
- DPR trail crews will cover intact historic features on the historic roads, trails and/or rail alignments with soil fill material, aggregate cap, or a boardwalk. If fill material is used, trail crews will install a filter cloth fabric between the original ground surface and any imported fill to distinguish the fill from original material.

The rehabilitation of historic trails and the construction of new trails would alter the cultural landscape, potentially confusing newly constructed trails with existing historic trail routes that have been rehabilitated. As discussed above, the trail routes could cross or run adjacent to sensitive resources and pedestrian traffic could impact these resources. Implementation of **MITIGATION MEASURE CULT-3** below will ensure that sensitive resources adjacent to the trails are protected and that historic trail routes are distinguishable from newly constructed trails.

MITIGATION MEASURE CULT-3: TRAIL SIGNAGE FOR RESOURCE PROTECTION

- DPR will install interpretive signs to differentiate historic trails from newly constructed trails. These signs will include the mining history of the Empire Mine SHP and the necessity for the public to stay on existing official roads and/or trails.
- Additional signs will notify the public that persons who vandalize, damage, or destroy

cultural resources will be prosecuted to the full extent of the law.

b) No prehistoric archaeological resources have been identified within the proposed Osborne Hill Proposed trail network. Therefore no mitigation measures are required regarding known prehistoric archaeological resources. However, there have been numerous historic artifact scatters and historic archaeological features identified within the proposed Osborne Hill trail network and within the existing road/trail network, including user created trails.

In conjunction with the Cultural Resources discussion and **MITIGATION MEASURS CULT-1, 2,** and **3** provided in (a) above, implementation of **MITIGATION MEASURE CULT-4 AND CULT-5** will reduce impacts to a less than significant level.

MITIGATION MEASURE CULT-4: COVERING RESOURCE SENSITIVE AREAS

- Trail crews will protect any existing trail alignments that cannot be re-aligned to avoid historic archaeological deposits by covering the resource sensitive area with imported fill soil to prevent damage, looting, and vandalism.

PROJECT REQUIREMENT CULT-5: PREVIOUSLY UNDOCUMENTED RESOURCES

- In the event that the DPR-qualified cultural resources specialist determines that significant, previously undocumented/unflagged cultural resources (including but not limited to dark soil containing shellfish, bone, flaked stone, groundstone, or deposits of historic material) are encountered during project construction, the DPR Project Manager will put work on hold at that specific location and work will be redirected to other tasks. A DPR-qualified cultural resource specialist will record and evaluate the find and work with the DPR Project Manager to implement avoidance, preservation, or recovery measures as appropriate prior to any work resuming at that specific location.
- In the event that the DPR-qualified cultural resources specialist determines that these finds are significant cultural resources, a qualified historian, archaeologist, and/or Native American representative (if appropriate) will monitor all subsurface work including trenching, grading, and excavations in that area.

c) In many of California's historic town sites and rural communities, discoveries have been made of non-Native American human bone including non-Anglo. Burials have not been documented or recorded along the alignments of the existing or proposed Osborne Hill trail network; however, there is always a potential of unanticipated discoveries of human bone. If any human remains or burial artifacts are identified, implementation of **PROJECT REQUIREMENT CULT-6** below will reduce the impact to a less than significant level.

PROJECT REQUIREMENT CULT-6: HUMAN REMAINS

- In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager will notify the DPR Project Manager. Any human remains and/or funerary objects will be left in place. The DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in

accordance with §7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (NAHC) will be notified within 24 hours of the discovery if the Coroner determines that the remains are Native American. The NAHC will designate the "Most Likely Descendent" (MLD) of the deceased Native American. The MLD will recommend an appropriate disposition of the remains. If a Native American monitor is on-site at the time of the discovery and that person has been designated the MLD by the NAHC, the monitor will make the recommendation of the appropriate disposition.

VI. **GEOLOGY AND SOILS**

ENVIRONMENTAL SETTING

Geology

Empire Mine SHP is situated within the Sierra Nevada Geomorphic Province, a 400-mile long northwest –southeast trending fault block mountain range with a high, very steep eastern escarpment and a gentle western slope that disappears under sediments of the Great Valley (California Geological Survey 2002, Hill 1975). Deep river canyons dissect the western slopes of the Sierra Nevada Mountain Range. Elevations increase from north to south, culminating in the 14,495-foot (above mean sea level (amsl)) summit of Mt. Whitney, which is the highest point in the contiguous U.S. The Sierra Nevada Range due east of Empire Mine SHP reaches a maximum elevation of 10,776 feet amsl at the top of Mt. Rose near the northeast shore of Lake Tahoe.

The Sierra Nevada Batholith forms the core of the Sierra Nevada Range, which is exposed at the surface as granite or granitic type rocks such as granodiorite (Bateman and Wahrhaftig 1966). In the northern portion of the range a metamorphic belt flanks the Batholith on the west, composed of weakly metamorphosed sedimentary and volcanic rocks of Paleozoic age (544 to 245 million years ago) and Mesozoic age (245 to 65 million years ago). Metamorphic bedrock containing gold-bearing veins occurs in the northwest trending Mother Lode region of the Sierra Nevada, which includes Empire Mine SHP.

The geology of the Empire Mine SHP area is a result of millions of years of complex geologic processes of sediment deposition from eroding adjacent landforms and intermittent deposits of extrusive igneous rock by volcanoes (DPR 1978, 1996). Much of this overlying rock has been eroded away, exposing the granite and granodiorite bedrock of the Sierra Nevada Batholith.

Igneous, volcanic, and metavolcanic rock types have been mapped within the boundaries of the park unit (Burnett and Jennings 1962, Clark 1970). Igneous types are Mesozoic age granite and granodiorite. Volcanic types are Pliocene age (5 to 2 million years ago) rocks such as andesite, tuff, and breccia. Metavolcanics are Jurassic-Triassic age (144 to 245 million years ago) greenstone, slate, amphibolite, and schist; the project site is located within an area mapped as metavolcanics.

Origin of Gold-Bearing Deposits

During the cooling of the granite magma in the Mesozoic age, hot water and gases steamed upward through a system of joints and fissures, especially fault breaks, depositing quartz and other minerals, including gold and silver (Hill 1975). Upper portions of the gold veins were removed by erosion and accumulated in stream and river beds (DPR 1978, 1996). These ancient gold deposits were buried by hundreds of feet of volcanic mud and lava towards the end of the Tertiary period (65 to 1.8 million years ago). During this time the Sierra Nevada Range was subjected to a tilting uplift, causing a rearrangement of the existing stream systems and creation of deep canyons that reached the igneous and metamorphic bedrock. However, much of the gold remained buried under hardened volcanic mud.

By the 1890s every ravine and creek in the vicinity of Grass Valley had been explored for the

presence of gold, as evidenced by the scarred and altered landscape and the numerous piles of placer diggings (DPR 1978). However, most of the gold at Empire Mine was obtained from the hard-rock mining of gold-bearing veins.

Topography

The project site encompasses about one third of the park unit, which is located in the lower elevations of the northern Sierra Nevada Range. Topography is mostly composed of hilly terrain dissected by small intermittent and permanent drainages, such as Little Wolf Creek. Slopes are gentle to moderate, ranging from 0 to 15%. Elevations range from approximately 2,500 feet on the western edge of the park unit to 2,900 feet near the top of Union Hill, whose summit is outside of the park unit.

Seismicity

Nevada County is in a relatively inactive seismic area when compared to other portions of California such as the San Francisco Bay area. There are no Alquist-Priolo Special Studies Zones within the county (Hart and Bryant 2007). These zones emphasize active faults that have a potential for ground surface rupture.

No fault zones are known to exist within Empire Mine SHP (DPR 1978, California Geological Survey 1994). Approximately two miles east of the park unit is the Grass Valley Fault, which is part of the Foothills Fault System. This fifty mile long fault has a general north-south orientation and has been mapped as a pre-Quaternary fault (older than 1.6 million years). Pre-Quaternary faults are defined as "faults without recognized Quaternary displacement or showing evidence of no displacement during the Quaternary time" (Jennings 1994).

The nearest faults exhibiting recent earthquake activity are the Dog Valley Fault (about fifty miles east of project site) northeast of the town of Truckee and the Cleveland Hill Fault, located about seven miles south of Lake Oroville (twenty-five miles northwest of the project site). The approximately ten-mile long Cleveland Hill Fault, which is part of the Foothills Fault System, produced an earthquake (i.e., Oroville Earthquake) of magnitude 5.7 on the Richter Scale on August 1, 1975 (Topozzada and Morrison, Jr. 1982). This event included a sequence of seven earthquakes at magnitudes of 4.5 or greater.

The Dog Valley Fault produced an earthquake (i.e., Truckee Earthquake) of magnitude 5.9 to 6.0 on September 12, 1966 (Greensfelder 1968, USGS 2008). This was a main shock in a series of smaller magnitude earthquakes. More recent earthquake activity has occurred on a different fault system in locations more than ten miles northeast of the Dog Valley Fault near the town of Verdi, Nevada (UNR 2008).

These two faults or other potentially active faults in the northern part of the state mapped on the Fault Activity Map of California (Jennings 1994) could produce earthquakes that result in ground motion at the project site.

Soils

The National Cooperative Soil Survey of the USDA Natural Resources Conservation Service (NRCS) has mapped the soils of Nevada County and identified nine soil mapping units located within Empire Mine SHP (NRCS 2008). Four of these soil types occur at the project site and

are soil phases of the Sites Soil Series. The Sites Series consists of deep or very deep, well-drained soils derived from metabasic and metasedimentary rocks. Their permeability is moderately slow and runoff is low to very high.

A generalized serpentine soils map produced by Nevada County Planning Department (Nevada County 2002) indicates that a small area of serpentine soil could occur in the extreme northern end of Empire Mine SHP, but is outside of the project site.

The four soil types mapped by the NRCS at the project site are:

SIB – Sites loam, 2 to 9 percent slopes
SIC – Sites loam, 9 to 15 percent slopes
SID – Sites loam, 15 to 30 percent slopes
SmE – Sites very stony loam, 15 to 50 percent slopes

NRCS rates soils for suitability of various uses, including paths and trails. All four soil types at the project site have been rated with limitations for use as trails, indicating some soil properties that affect trafficability and erodibility. However, limitations can be overcome or minimized by special planning, design, or installation. SIB and SIC soils have moderate limitations due to dustiness. The SID soil has a moderate limitation due to dustiness and a more severe limitation due to steepness of slopes. The SmE soil has a moderate limitation due to dustiness, a moderate to severe limitation because of rock fragments greater than ten inches, and a severe limitation due to steepness of slopes.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area, or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable, as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐

d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial risks to life or property?	☐	☐	☒	☐
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems, where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Geology and Soils is based on criteria **VI a – f**, described in the environmental checklist above.

DISCUSSION

a) The project site is located within the lower elevations of the northern Sierra Nevada Range, an area relatively free of large earthquake events. No potentially active faults have been identified within Empire Mine SHP.

i) The project site is not located within an Alquist-Priolo Earthquake Fault Zone as designated by the California Geological Survey (CGS 2000). The chance of the surface rupture of an earthquake fault near the project site is highly unlikely; the nearby Grass Valley shows no displacement during the past 1.6 million years. Therefore, there would be no impact from surface rupture of a known fault due to this project.

ii) The closest faults exhibiting historic earthquake activity (i.e., Cleveland Hill Fault twenty-five miles to the northwest and Dog Valley Fault fifty miles to the east) are capable of generating Maximum Credible Earthquakes of Richter Scale magnitudes of 6.5 and 7.3, respectively (Petersen 1996). The expected ground acceleration at the project site is 0.1 to 0.2 force due to gravity (g) (CGS 2008). The project site could be subject to strong seismic ground shaking from local or more distant faults; however, this is an existing condition and there would be no increased risk to the public due to this project. No impact.

iii) Seismic-induced ground failure, such as liquefaction, usually occurs in unconsolidated granular soils that are water saturated. These conditions do not exist at the project site. However, there is a potential for seismic-induced ground failure in areas where the proposed trail network could be situated above unknown mining tunnels or excavations. Implementation of **PROJECT REQUIREMENT GEO-1** below would reduce the risk of injury to park visitors from seismic-induced ground failure to a less than significant level.

PROJECT REQUIREMENT GEO-1: POST-EARTHQUAKE INSPECTIONS
• Qualified DPR personnel will inspect trails for damage as soon as feasible after a large earthquake and close trails if determined that they pose a danger to trail users.

iv) Landslides could occur at the project site where slopes are steep and soils are erodible. Implementation of **PROJECT REQUIREMENT GEO-1** above will reduce the risk of injury to park visitors from seismic-induced landslides to a less than significant level.

b) A temporary increase in erosion and sedimentation could occur during construction of this project as a result of ground disturbing activities. Implementation of **PROJECT REQUIREMENT HAZMAT-2** and **HYDRO-1** will reduce soil erosion or loss of topsoil by the proposed project to a less than significant level.

c) The project site is not located within a geologic unit or on soil that is known to be unstable, based upon available data. There is no potential for instability due to liquefaction and the potential for lateral spreading during an earthquake is minimal. Therefore, the impact from these hazards is less than significant.

d) The project site is underlain by Sites Series soils, which are loams with a moderate potential for soil expansivity. However, these soils have been rated with no limitations for development of paths and trails in regards to shrink-swell properties (NRCS 2008). Therefore, the risks to life and property are less than significant.

e) The project does not involve the installation of a septic system or leach field. Therefore, there would be no impact to onsite soils from this project.

f) No known unique paleontological or geological resources exist at the project site. No impact.

VII. HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL SETTING

The Osborne Hill area of Empire Mine SHP was the site of numerous individual mines that were operated from the mid-1800's to mid-1900's. Many of the existing recreational roads/trails on Osborne Hill are old routes used by miners to access the various mines in the area. Charles H. Osborn and others located multiple claims on Osborne Hill in 1851. The Grass Valley Mining Company purchased the claims in 1852. Other early mines included the Betsy, Orleans, Prescott Hill, Daisy Hill, Conlon and many others. Consolidation of individual claims under the Empire Mining Company name began in the mid to late 1850's (Selverston 2008). Additional claims were added to the Empire holdings during the Bourn ownership period and continued after Empire-Star Mines Company became the owners in 1929. The Cultural Resources section of this document contains a more detailed description of the Osborne Hill mining history.

Historic mining operations within Empire Mine SHP have left behind pockets of mine and mill materials containing elevated metal levels at various locations within the park unit. Due to the presence of elevated metals, several interim remedial actions have been conducted at Empire Mine SHP to protect the visiting public, DPR personnel, and the environment. Remedial actions to date include: 1) covering the "Red Dirt Pile", a former mill tailing pile area that was a source for elevated metals and low pH contamination in storm water runoff, with a cap; 2) soil testing of road/trail surfaces resulting in closure of certain recreational road/trail alignments to the public and covering other road/trail segments with a crushed aggregate rock cap in order to maintain public access; and 3) soil testing around DPR park personnel residences (DTSC 2007).

In 2006, metal concentrations of existing roads/trails throughout Empire Mine SHP, including the Osborne Hill project site, were measured in the field by MFG, Inc. (MFG 2006) using in-situ field x-ray fluorescence (XRF) technology and by laboratory analysis of soil samples collected onsite. At the Osborne Hill project site, metal concentrations were also measured in 2007 on the major user created trails being considered for incorporation into the official trail network and on the proposed new trail alignments. MFG used the same methodology to collect these data that they used in 2006 on the existing roads/trails (MFG 2006, 2008b). The soils were analyzed for the following metals and their concentrations on the site: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, zinc, and mercury. Of these seventeen metals, arsenic was considered to be the only constituent of interest on road/ trail surfaces within the Osborne Hill project site when compared with the residential California Human Health Screening Level (CHHSL). CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the U.S. Environmental Protection Agency (EPA) and California EPA (California EPA 2005). Thresholds of concern used to develop CHHSLs are an excess lifetime cancer risk of one-in-one-million (10^{-6}) and a hazard quotient of 1.0 for noncancer health effects. The residential CHHSL value for arsenic is 0.07 milligrams/kilogram (mg/kg). Metal concentrations below the residential CHHSL values are appropriate for residential or unrestricted land use. As such, metal concentrations that are below the residential CHHSL values are expected to be conservatively below thresholds for risk to human health from

road/trail use and are not considered constituents of interest (MFG 2008b). Additionally, the DTSC Human and Ecological Risk Division (HERD) has developed an arsenic screening level of 270 mg/kg for road/trail use. Arsenic levels greater than 200 mg/kg (clean up goal) were used to identify areas where mine and mill material could exist on road/trail surfaces and could pose a potential exposure risk to DPR personnel and park visitors. This value is less than and more conservative than the DTSC remediation goal of 270 mg/kg.

The highest levels of arsenic concentration within the Osborne Hill project site are located in the vicinity of historic mining activities (Appendix A: Map 1): along the Osborne Hill Loop Trail north of the Prescott Hill Mine; along the Prescott Hill Crosscut Trail and the Osborne Hill Loop Trail located south of the Prescott Hill Mine; along the Osborne Hill Loop Trail and the Hard Rock Trail near their intersection in the vicinity of the Prescott Hill Mill site; along the Daisy Hill Mine Trail; along the Conlon Mine Trail and the user created trails that cross the Conlon Mine waste rock pile; along the existing Power Line Trail from the access point gate on the eastern boundary of the park unit (Node I) to west of the intersection with the Osborne Hill Loop Trail; and along segments of the user created trail that follows the residential Osborne Hill Road outside the eastern boundary of the park unit, extending from the access point gate at Node H) north of the access point gate at Node I (MFG 2006 and MFG 2008b).

As a component of the current project scope, remediation efforts would be conducted on roads/trails of the Osborne Hill trail network to address elevated levels of metals in the soil. DPR would remove soil berms adjacent to roads where feasible. DPR would treat reconstructed and new road/trail with up to six inches of compacted fill; soil would be from the road berms where metal concentrations are not elevated and from clean imported fill from outside the park unit. The purpose of applying fill is to raise road/trail grades so that they are level with the surrounding soil surface and minimize erosion of the road/trail surface during rain events. The remediation efforts would also include: 1) permanent closure of road/trail alignments in areas containing elevated metals or where trails are not sustainable; 2) covering segments of previously closed official trails containing elevated metals with an aggregate cap so that they could be reopened; 3) formalizing several user created trails to replace closed trails; and 4) installing new official road/trail segments to replace closed alignments and reestablish visitor access.

Serpentine rocks and soils contain naturally-occurring asbestos. Fibers of naturally-occurring asbestos could become airborne, and lead to a potential health risk, when disturbed. The World Health Organization (WHO), the federal Department of Health and Human Services (HHS), and the U.S. Environmental Protection Agency (USEPA) have determined that asbestos is a human carcinogen, although scientists are not yet certain how much exposure could result in development of an asbestos-related disease (USEPA 2008). Serpentine rock is known to occur within Nevada County, but does not occur within Empire Mine SHP (Clark 1970). Serpentine soils, however, are indicated as occurring within the extreme northern end of Empire Mine SHP on a Nevada County Planning Department serpentine soils map (Nevada County 2002), but there is no indication that these soils occur within the Osborne Hill project site.

Airports

Nine municipal airports, private airfields, and heliports exist throughout Nevada County

(Hometown Locator 2008, USGS 2006). Of these, two private heliports are within two miles of the park unit boundary. The Grass Valley Service Center Heliport is less than 0.5 mile west of the park unit boundary and about 1.25 miles west of the project site at Osborne Hill. The Shaws Hill Heliport is approximately 1.25 and 2 miles north of the park unit boundary and Osborne Hill respectively. Nevada County Air Park is located approximately 2.8 miles northeast of the project site off Loma Rica Drive in the Loma Rica Industrial Park (Google Maps 2008). Empire Mine SHP does not occur within any of the five air park safety areas which extend a total of 5,000 feet from the runway surface (Quad Knopf 1999).

Schools

Hennessy Elementary School and Union Hill Elementary School are approximately one mile northwest and one quarter mile northeast of the project site, respectively (Google Maps 2008). Lyman Gilmore Middle School is located approximately two miles northwest and Sierra Foothills High School is located approximately one mile northwest.

Fire

DPR has an emergency response protocol for the Osborne Hill area within Empire Mine SHP. The plan includes information about first responders and Incident Comment (IC) in the event of fire, as well as law enforcement and medical emergencies within the park unit (DPR n.d.).

The project site, located within a forested area of Empire Mine SHP, is bounded on the east, west, and south sides by private land, much of it containing homes on large lots in wooded areas. The City of Grass Valley, all structures within Empire Mine SHP, and many homes and their occupants in the surrounding area could be at immediate risk if a fire started in or migrated through the park unit. In the event of a fire, people using the park trail system could be trapped and in danger of being harmed (URS Corporation 2005).

If a fire occurs during construction of the proposed project, the California Department of Forestry and Fire Protection (CalFire) has primary jurisdiction for fire suppression in units of the State Park System, including Empire Mine SHP (Calfire 2007). Three local fire protection agencies, including the Grass Valley Fire Department (GVFD), Nevada County Consolidated Fire District (NCCFD), and Ophir Hill Fire District (OHFD), provide service within the Grass Valley General Planning Area (Quad Knopf 1999). OHFD would likely respond first to a fire emergency at Empire Mine SHP (DPR n.d.); however, firefighting units from any of the three local agencies could be the first responders depending upon availability. Any local first responder agency would relinquish command to Calfire upon arrival of its crews and equipment on scene. In addition, DPR fire crews stationed in the Lake Tahoe area could be activated to assist in fire suppression operations (DPR n.d.). DPR rangers would have primary responsibility for directing any necessary evacuations, designating routes of ingress, egress and staging areas for fire control, and for traffic control and public safety.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Create a significant hazard to the public or the	☐	☐	☒	☐

	environment through the routine transport, use, or disposal of hazardous materials?				
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, substances, or waste into the environment?	☐	☐	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d)	Be located on a site which is included on a list of hazardous materials sites, compiled pursuant to Government Code §65962.5, and, as a result, create a significant hazard to the public or environment?	☐	☐	☒	☐
e)	Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport? If so, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f)	Be located in the vicinity of a private airstrip? If so, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h)	Expose people or structures to a significant risk of loss, injury, or death from wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Hazards and Hazardous Materials is based on criteria **VII a – h**, described in the environmental checklist above.

DISCUSSION

a) Construction activities related to the proposed project would require the use of potentially hazardous materials such as fuels, oils, and other vehicle and equipment fluids at the project site. These materials would be used for vehicles and equipment such as generators and excavators, and would be present in containers engineered for safe storage. Large quantities of fluids would not be stored at the project site. Spills, upsets, or other construction-related accidents could result in a release of fuels or other hazardous materials into the environment.

   The proposed project would involve ground disturbance in soils that are known to contain elevated levels of metals and could involve the generation of excess native soil that would

need to be transported off site. Project related activities such as road/trail grading, berm removal, new trail construction, and transportation of soil off site all have the potential to release hazardous materials into the environment and expose DPR personnel working at the project site and the public in areas off site.

In general, low pH of storm water will contribute to greater dissolved metals. Some metals could be transported in the dissolved phase and would not be trapped by conventional sediment control BMPs. To date, limited sampling of storm water runoff from Osborne Hill shows low to moderate levels of metals of concern such as arsenic and lead. Therefore, transportation of high levels of metals is not anticipated as a result of the proposed project.

Implementation of **PROJECT REQUIREMENTS HAZMAT-1**, **HAZMAT-2**, and **HAZMAT-3** along with **PROJECT REQUIREMENTS AIR-1** for dust reduction, **HAZMAT-4** for vehicle/equipment decontamination, and **HYDRO-1** for erosion/sediment control and pollution prevention, will reduce the potential impacts from hazardous materials to less than significant.

MITIGATION MEASURE HAZMAT-1: TRANSPORT OF HAZARDOUS MATERIALS
• Prior to the start of project work, DPR will develop a transportation plan for the transport of potentially hazardous materials such as excess native soil generated during project construction from areas with metal concentrations above clean up goals. Any excess native soil generated during project construction from areas with metal concentrations above clean up goals will be removed and transported to an appropriate disposal facility in accordance with applicable federal, state, and local regulations.

PROJECT REQUIREMENT HAZMAT-2: SUSPENSION OF WORK
• Construction activities will be timed with awareness of precipitation forecasts. All on-site work will be suspended during heavy rainfall events of at least 0.50 inch of rain in a 24-hour period.

PROJECT REQUIREMENT HAZMAT-3: HEALTH AND SAFETY PLAN
• Prior to the start of any on site work, DPR will develop a Health and Safety Plan (or a Park-wide Plan may be used) that will be approved by the Project Manager. The plan will provide guidelines for safe work practices to prevent any hazards to the public, DPR personnel, or the environment from the release of hazardous materials or waste (chemical and biological). Specific items to be included are: • Workers will complete a 40 hour training program in Hazardous Waste Operations and Emergency Response (i.e., 29 CFR 1910.120). • The Health and Safety Plan and the project scope must contain procedures for storage, transport, and disposal of any hazardous waste generated as part of this project, including any excavated soils or spill cleanup materials.

b) During project related work, the dispersal of metals from areas containing elevated concentrations to other areas both within and outside of the project site could occur. **PROJECT REQUIREMENT HAZMAT-4** will reduce the potential for adverse impacts to a less than significant level.

PROJECT REQUIREMENT HAZMAT-4: DECONTAMINATION OF PROJECT VEHICLES AND EQUIPMENT
• DPR will set up decontamination areas for vehicles and equipment at any points of entry/exit for the project site, at points within the project site where metals in the soil transition from elevated to low levels, and at the existing decontamination wash facility located in the Maintenance Yard. • Decontamination areas will be designed to completely contain all residuals generated from washing vehicles and equipment before exiting areas of elevated metals, the project site, and the park unit. DPR will install BMPs as necessary to prevent the dispersal of wash residuals beyond the boundaries of the decontamination area. This will also include, but not be limited to removal of soil, sand, or other loose materials from the exterior, including tires and undercarriage, of all trucks or lightweight equipment before entering public roads. Residuals generated will be disposed of consistent with industry standards.

c) As noted in the Environmental Setting above, Union Hill Elementary School is the only school within one quarter mile from the project site (Google Maps 2008). The school is located at 11638 Colfax Highway (State Route 174), northeast of Osborne Hill. All activities associated with the proposed project would occur within the boundaries of Empire Mine SHP. As stated in Discussion (a) above, any fuels, oils, or other vehicle and equipment fluids used for vehicles would be present in containers engineered for safe storage. Large quantities of fluids would not be stored at the project site.

The transportation of soil containing elevated metal concentrations above clean up goals off site has the potential to release hazardous materials into the environment and expose the public in areas off site. Implementation of **MITIGATION MEASURE HAZMAT-1** and **PROJECT REQUIREMENTS AIR-1, HAZMAT-3**, and **HAZMAT-4** will reduce the potential impacts from hazardous materials to less than significant.

d) The Empire Mine SHP is included on a current site cleanup list of hazardous materials sites compiled by the California Department of Toxic Substances Control (DTSC) pursuant to Government Code §65962.5 (i.e., Cortese List). The park unit has areas where both soil and surface water have been impacted by metals (e.g., arsenic, lead, cadmium and mercury), low pH, and some residual cyanide related to past gold mining processes. Information on the status of cleanup activities at the park unit is available on the DTSC EnviroStor website (DTSC 2007).

The proposed project addresses impacts to the public and the environment from elevated levels of arsenic on some road/trail alignments. MFG, Incorporated (MFG) consultant for the mining company, Newmont USA Ltd., has conducted in situ and laboratory testing of shallow soils along the entire existing trail network of the park unit (MFG 2006), along major user created trails being considered for incorporation into the official trail network, and for new trail alignments (MFG 2008a and MFG 2008b). The proposed project is part of the ongoing remedial actions at the park unit designed to prevent significant hazard to the public or environment from elevated metals related to past mining operations.

PROJECT REQUIREMENT HAZMAT-5 below, along with implementation of **HAZMAT-1** through **4,**

and **HYDRO-1** and **2** would reduce any impacts from elevated metals to the public and the environment to a less than significant level.

PROJECT REQUIREMENT HAZMAT-5: MAINTENANCE OF NEW FACILITIES
• DPR will participate in monitoring and maintaining the condition of Osborne Hill trail network road/ trail surfaces in perpetuity, including segments with elevated metals and covered with an aggregate cap. Information describing monitoring and maintenance requirements will be included in an Operations and Maintenance Agreement and a Land Use Covenant with DTSC. Coordination with DTSC to complete these agreements will follow after project work is completed. DPR will coordinate the development of an Operations and Maintenance Plan and participate in implementation of the Plan to assure that required protections are maintained.

e, f) The project is not located within an airport land use plan but is within the vicinity of two privately owned heliports including the Grass Valley Service Center Heliport and the Shaws Hill Heliport. All activities associated with the proposed project would occur within the boundaries of Empire Mine SHP. Therefore, the project would not result in a safety hazard to people residing or working in the area. No impact.

g) The proposed project does not contain any component that would interfere with an adopted emergency response plan or emergency evacuation plan. No impact.

e) The project site is within a forested portion of the park unit and is subject to dry and warm to hot conditions from late spring through autumn. Implementation of **PROJECT REQUIREMENT HAZMAT-6** will reduce the potential for adverse impacts from wildfire to a less than significant level.

PROJECT REQUIREMENT HAZMAT-6: WILDFIRE AVOIDANCE AND RESPONSE
• DPR will develop a Fire Safety Plan prior to the start of construction. • Project construction will be timed (December – March) to occur during the rainy season which will minimize both dust and fire issues. In the event that conditions on the site are dry, a water truck will be onsite for all project construction activities involving equipment with the potential to start a fire. • Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers will be required for all heavy equipment. • Construction crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, heavy equipment will be parked over mineral soil, asphalt, or concrete to reduce the chance of fire. • DPR personnel have a State Park radio on site, which allows direct contact with CalFire and centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire.

VIII. HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL SETTING

Climate and Precipitation

Empire Mine SHP is located within a semi-Mediterranean climatic zone, typical of the Sierra Nevada foothills. During the summer months, warm dry winds remove moisture from the vegetation and soil surface. Rainfall in the summer is rare and is usually generated from thunderstorms. Winters are generally mild and wet, with the majority of precipitation occurring from November through May. Rainfall averages fifty-five inches per year and is usually accompanied by a southwest wind. Averaging about thirty inches total per year, snow depth rarely reaches more than eight inches at any one time (DPR, 1978). Precipitation records are kept by the City of Grass Valley Public Works Department and have been collected at the Magenta Drain Portal since the summer of 2006 (DPR 2006).

Watershed

Empire Mine SHP is located within the Wolf Creek watershed, a tributary to the Bear River. The Bear River flows into the Feather River, which drains into the Sacramento River system. The majority of the Osborne Hill project site is within the Little Wolf Creek watershed, with a portion of the site draining directly into Wolf Creek toward the south. Small ephemeral drainages that carry water only during heavy storms are located on Osborne Hill.

Natural drainage patterns have been modified and disrupted by past mining activities, which often involved channeling of water into ditches for use in ore processing. The Little Wolf Creek drainage was modified during the mining era by the construction of the Sand Dam, most likely built in 1917 as a result of the California Debris Commission's requirement that tailing materials could not be discharged directly to a creek. Little Wolf Creek now flows through the Sand Dam marsh area, which was created with the trapped tailing materials upstream of the dam. The creek exits through the Sand Dam arrestor (energy dissipation system). It eventually leaves the park unit approximately 1,150 feet below the Sand Dam and then flows approximately 2,500 feet before joining Wolf Creek west of State Route 49 (DPR 2006).

Flooding

No 100-year flood plain has been designated for Little Wolf Creek. High flows in Little Wolf Creek are contained within the creek bank. Creek flows spread out within the Sand Dam impoundment and are then released through the spillway.

Surface Water Quality

The Central Valley Regional Water Quality Control Board (CVRWQCB) regulates water quality in the region and provides water quality standards and management criteria as required by the Clean Water Act (CWA). These standards and criteria are presented in the Water Quality Control Plan (i.e., Basin Plan) for the Central Valley Region (CVRWQCB 1998).

Water quality testing and field observations by qualified DPR staff have determined that surface water quality within Empire Mine SHP has been impaired by past mining activities. Deposits of mine (e.g., waste rock) and mill (e.g., tailing piles) materials are associated with

historic mining at Osborne Hill. Mine spoils material from underground mining activities contains the non-ore-bearing rocks and soil that were removed during mining and tunneling operations. Once removed, this material was not processed because it did not contain economically significant ores. Mill tailing materials are fine-grained deposits (sand size or smaller) that have been crushed in a stamp mill. Both mine waste rock and mill tailing materials have the potential to release metals into storm water. In addition, the mill tailing materials could contain unnaturally occurring inorganic contaminants such as mercury and cyanide (DPR 2006). The surface water sampling network, part of the industrial stormwater pollution prevention plan (ISWPPP, General Permit #WDR-97-03-DWQ) for the park unit, includes a sampling point down-gradient of the project site on the north side of Osborne Hill; to date, only low levels of metals of concern from surface water sampling have been detected on the north side of Osborne Hill (DPR 2008).

Groundwater Occurrence and Quality

Groundwater in Empire Mine SHP occurs within a complex system of fractured bedrock and underground mine workings. Shallower, perched water zones likely exist but have not been explored within the park unit. A vertical well extracts mine pool water from the main shaft at a depth of 240 feet below ground surface (bgs) for use as irrigation during dry months and other non-potable water use (Zabaneh 2008) within Empire Mine SHP. The depth to groundwater/mine pool water is approximately 200 feet bgs. Water quality of mine pool water meets the CVRWQCB criteria for agricultural use (MFG and Clear Creek Consultants, Inc. 2008). The primary well (Well No. 1) located in the park unit taps into the mine pool and runs at approximately 175 gallons per minute (gpm) and the rate of well recharge well recharge is 6 inches in a 24-hour period (Payne 2008).

Water Supply

Potable water for the park unit is supplied by the Nevada Irrigation District (NID). Mine pool water is extracted for use as irrigation water for the historic grounds and for other non-potable uses, including fire suppression. DPR could obtain irrigation water from an irrigation well located within the park unit for use in dust suppression during project construction. Five thousand gallons of water would be pumped at a time into a portable water tank up to ten loads per day.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits	☐	☐	☐	☒

	have been granted)?				
c)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f)	Substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place structures that would impede or redirect flood flows within a 100-year flood hazard area?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam?	☐	☐	☐	☒
j)	Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Hydrology and Water Quality is based on criteria **VIII a – j**, described in the environmental checklist above.

DISCUSSION

a) A release of sediment to Little Wolf Creek and Wolf Creek drainages could be caused by project related activities such as (a) grading/excavation during road/trail construction and re-construction, and (b) covering roads/trails with an aggregate cap. In addition, vehicles related to the proposed project could use an existing crossing on Little Wolf Creek to transport equipment and materials between the Equipment Yard and the project site. The dirt road crossing at Little Wolf Creek is on the Hardrock Trail north of Trail Segment A-B (Appendix A: Figures 1 and 2) and currently does not have a crossing structure. Vehicles, such as DPR ranger patrol trucks, drive through the creek at this location. Increased use of the crossing during the project could temporarily increase release of sediment containing elevated metals into the creek. Other impacts to water quality could include releases of fuels or other fluids from project related vehicles and equipment and from construction

materials. These releases could result in a violation of water quality standards and waste discharge requirements.

The proposed project would comply with all applicable water quality standards as specified in the CVRWQCB Basin Plan. Along with **PROJECT REQUIREMENT HAZMAT-2**, **PROJECT REQUIREMENTS HYDRO-1** and **HYDRO-2** will reduce impacts to water quality to a less than significant level.

PROJECT REQUIREMENT HYDRO-1: EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION
• Prior to the start of construction, DPR will prepare a Construction Storm Water Pollution Prevention Plan (SWPPP) that identifies Best Management Practices (BMPs) to be used in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during all trail excavation, grading, aggregate cover installation, and any other ground disturbing activities. The SWPPP will also include BMPs for hazardous waste and contaminated soil management. • For construction activities that extend into the rainy season (October 15 - May 15) or if an un-seasonal storm is anticipated, DPR will properly winterize the site by covering (i.e., tarping) any stockpiled materials or soil and by installing silt fences, straw bale barriers, fiber rolls, or other structures around stockpiles and areas of ground disturbance.

PROJECT REQUIREMENT HYDRO-2: WATER QUALITY PROTECTION
• In the event that DPR needs to access the project site by way of the existing crossing on Little Wolf Creek, DPR will install a temporary crossing structure across Little Wolf Creek to reduce sedimentation into the creek by eliminating direct contact of vehicles with the creek water; DPR will remove the crossing once project related activities are completed.

b) This proposed project does not involve construction of any facilities that would increase groundwater usage, interfere with groundwater recharge, or lower the local groundwater table. As described in the Environmental Setting above, water for dust suppression during project construction could be supplied by a DPR irrigation well located in the park unit. Although groundwater recharge patterns could be altered at Well No. 1, this alteration would not deplete the rate of recharge (6 inches in a 24 hour period) and would not change well production of 175 gpm. Additionally, DPR would not utilize the well for irrigation concurrently to the project because irrigation does not occur during wet months generally ranging from fall through spring. Therefore, there would be no impact to groundwater resources due to this project.

c) No existing drainages would be significantly altered by the project. DPR biologists have determined that drainages at the project site are predominately ephemeral, with the exception of Little Wolf Creek. Any siltation caused by the project would be less than significant, provided stormwater runoff is directed in a manner that does not cause erosion. Trail design would include constructing roads/trails to provide outslope sheet drainage. In addition, **PROJECT REQUIREMENT HYDRO-2** will reduce impacts to natural drainage patterns at the project site to a less than significant level.

PROJECT REQUIREMENT HYDRO-3 : ENERGY DISSIPATION
• If runoff must be concentrated, then DPR will install adequate energy dissipation at discharge points.

d) The existing drainage pattern would not be altered in a manner that would significantly increase the rate or amount of surface runoff or that would result in on- or off-site flooding. Trail surfaces would be native soil or could be covered with an aggregate cap in areas containing elevated metals, thus allowing for infiltration of storm water runoff. No impermeable surfaces are planned as part of this project. The temporary crossing structure discussed in (a) above would be designed and installed in a manner that allows water to flow through the structure; the crossing would also be removed upon completion of the project. Implementation of **PROJECT REQUIREMENTS HYDRO-1, HYDRO-3,** and **HAZMAT-2**, will reduce any impacts to a less than significant level.

e) The proposed project would not create or contribute water runoff that would exceed the capacity of existing or planned stormwater drainage systems. No engineered storm drain systems or large culverts are present at the project site. In addition, the project is not expected to cause increases in polluted runoff with implementation of **PROJECT REQUIREMENTS HYDRO-1, HYDRO-3**, and **HAZMAT-2**. Less than significant impact.

f) The project would not substantially degrade water quality due to soil erosion and runoff or release of vehicle or equipment with implementation of **PROJECT REQUIREMENTS HYDRO-1**, **HYDRO-2**, **HYDRO-3**, **HAZMAT-2, HAZMAT-4,** and **HAZMAT-5**. Less than significant impact.

g) As described in the Environmental Setting, no part of the project site is located within a FEMA-designated 100-year floodplain. The project does not place housing in the 100-year floodplain. No impact.

h) The project would not place structures that would redirect or impede flood flows within a FEMA-designated 100-year floodplain. No impact.

i) This project would not expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam. No impact.

j) Topography characteristic of the project site is relatively steep in some locations, but there is no history of large landslides or mudflows at the project site. The project is not located adjacent to a large water body and would not be inundated by either a seiche or a tsunami. Therefore, there would be no impact due to this project.

IX. LAND USE AND PLANNING

ENVIRONMENTAL SETTING

Empire Mine SHP is situated south of the Grass Valley city limit in Nevada County. The park unit falls within the municipal Planning Area of the City and is considered part the Grass Valley Community Region by the County (City of Grass Valley 2007, Nevada County 2004).

Nevada County

According to the Nevada County General Plan (1996), County land use designations include commercial, industrial, single and multi-family housing, agriculture / timberlands, and public lands. Land use in Nevada County had developed into and still reflects a resource-based rural economy. While much of the County remains rural, a transition has occurred over the past twenty years toward development of more industrial and commercial uses. These changes in land use have centered predominately in and near the City of Grass Valley and Nevada City. Housing in the County is primarily classified as single family residential, with the majority of multi-family units located in Grass Valley. Agriculture and timberlands are significant to the County's economy and contribute to the rural quality of the area (Nevada County 1996).

Public lands fall under the designation of Open Space in the Nevada County General Plan. The County General Plan describes goals, objectives, and policies for the Open Space designation that limit uses to those that have a minimal impact on "the natural character and environmental features of the land" (Nevada County 1996). Public lands in Nevada County are primarily managed by the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM), and contribute significantly to the Nevada County land use pattern, rural character, and total land area. Other public lands include but are not limited to park units managed by DPR, the County, and local municipalities such as Grass Valley.

City of Grass Valley

Empire Mine SHP is within the City of Grass Valley Planning Area and is designated as Parks/Open Space in the 2020 General Plan Update Background Report (City of Grass Valley 1998). Open Space is defined in Section 65560(b) of the City Government Code as "any parcel or area of land or water which is essentially unimproved and devoted to an open space use." Open space land uses include the preservation of natural resources; managed production of resources such as forest lands, rangeland, agricultural land, and other areas of economic importance; and outdoor recreation (City of Grass Valley 1998).

Empire Mine SHP (DPR)

A comprehensive planning program for Empire Mine SHP as well as other units of the State Park System is authorized by Public Resources Code (PRC) §540 and 541. DPR completed the General Development Plan for Empire Mine SHP, which provides general guidelines for management and development of the park unit, in December 1978 (DPR 1978) and an Amendment to the General Plan for underground interpretive facilities in 1996 (DPR 1996). General guidelines for development within the park unit reflect its classification as a State Historic Park where the emphasis of development is related to historic values. In addition, specific goals and objectives include but are not limited to identifying cultural, natural, and recreational resources in the park unit and determining visitor activities / land uses that are compatible with the purpose of the unit, available resources, and the surrounding area.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with the applicable land use plan, policy, or regulation of any agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Land Use and Planning is based on criteria **IX a – c**, described in the environmental checklist above.

DISCUSSION

a) The proposed project would occur completely within the boundaries of Empire Mine SHP. The park unit is outside the city limits of Grass Valley. No established community exists within the boundaries of the park unit. No impact.

b) As mentioned in the Environmental Setting above, the proposed project site is located within the municipal Planning Area of the City and is considered part the Grass Valley Community Region by the County (City of Grass Valley 2007, Nevada County 2004). The City and the County both designate the park unit as Open Space; recreation such as hiking trails is an approved use in Open Space areas. The proposed project is consistent with the General Development Plan and General Development Plan Amendment for Empire Mine SHP. No aspect of the project is in conflict with local zoning, regulatory policies, land use plans, conservation plans, or ordinances. Appropriate consultations would be done and permits completed in compliance with applicable local, state, and federal requirements. No impact.

c) There is no applicable habitat conservation plan or natural community conservation plan in effect for the park unit. No impact.

X. MINERAL RESOURCES

ENVIRONMENTAL SETTING

The California Surface Mining and Reclamation Act (SMARA) of 1975 requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to the known, or inferred, mineral potential of that land without regard to land use or land ownership. An MRZ-1 classification is given when there is enough information present to indicate that no significant mineral deposits are present or likely to be present; the MRZ-2 classification is given to areas that have significant mineral deposits that are known to be present or are inferred to be present based upon geologic information; an MRZ-3 classification is given if mineral deposits cannot be determined from the available data; and an MRZ-4 classification is given to areas that lack sufficient data to assign any other MRZ designation (DOC n.d.).

Currently, gold and construction aggregate are the most important mineral resources from Grass Valley. The Grass Valley South Area, of which the historic Empire Mine is a part, is known to support a series of veins containing free gold and lesser amounts of lead, copper, zinc, and tungsten. Although many of the veins have been mined, it is expected that significant amounts of gold still exist at deeper levels. Consistent with State designations for mining lands, zones within the Grass Valley General Planning Area that have significant mineral resource deposits are classified as MRZ-2 (City of Grass Valley 1993). This includes the land that underlies Empire Mine SHP.

Although significant mineral deposits are expected to occur in the land beneath Empire Mine SHP, PRC § 5001.65 prohibits commercial exploitation of resources in the units of the State Park System.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Result in the loss of availability of a known mineral resource that is or would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Mineral Resources is based on criteria **X a – b**, described in the environmental checklist above.

DISCUSSION

a,b) This project would not change land use activities on the site and would therefore not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site. The entire project site is within Empire Mine SHP. As stated in the Environmental Setting above, under PRC § 5001.65, mining within any unit of the State Park System is prohibited. No impact.

XI. NOISE

ENVIRONMENTAL SETTING

Sound is any detectable fluctuation in air pressure and generally is measured on a logarithmic scale in decibels (dB). When unwanted sound (i.e., noise) is measured, an electronic filter is used to de-emphasize extreme high and low frequencies to which human hearing has decreased sensitivity. Resulting noise measurements are expressed in weighting frequencies called A-weighted decibels (dBA). While zero dBA is the low threshold of human hearing, a sustained noise equal or greater than 90 dBA is painful and can cause hearing loss (Table XI-1, Bearden 2000).

Noise is further described according to how it varies over time and whether the source of noise is moving or stationary. Background noise in a particular location gradually varies over the course of a 24-hour period with the addition and elimination of individual sounds. Several terms are used to describe noise and its effects. The equivalent sound level (L_{eq}) describes the average noise exposure level for a specific location during a specific time period, typically over the course of one hour. The instantaneous maximum noise level (L_{max}) is the highest sound level measured during a specific time period. Federal, state, and local governments have defined noise and established standards to protect people from adverse health effects such as hearing loss and disruption of certain activities. Noise is defined in the California Noise Control Act, Health and Safety Code, California Code of Regulations (CCR) § 46,022 as excessive or undesirable sound made by people, motorized vehicles, boats, aircraft, industrial equipment, construction, and other objects.

Table XI-1: Sound Levels Generated by Various Sources of Noise

Sound Level	**dbA**
Quiet library, soft whispers	30
Living room, refrigerator	40
Light traffic, normal conversation, quiet office	50
Air conditioner at 20 feet, sewing machine	60
Vacuum cleaner, hair dryer, noisy restaurant	70
Average city traffic, garbage disposals, alarm clock at 2 feet	80
Constant exposure to the following sound levels can lead to hearing loss	
Subway, motorcycle, truck traffic, lawn mower	90
Garbage truck, chain saw, pneumatic drill	100
Rock band concert in front of speakers, thunderclap	120
Gunshot blast, jet plane	140
Rocket launching pad	180

(Bearden 2000)

To promote compatibility among various land uses and protect health and safety, Nevada County has established zoning districts and exterior noise limits that control potential nuisances such as noise and vibration. County noise limits apply to discretionary and ministerial projects and limit noise for sensitive receptors such as residential areas, hospitals, schools, libraries, and places of worship (Nevada County 1996). Empire Mine SHP is zoned in

the Open Space District (Nevada County 2004), for which the exterior noise limits between 7:00 a.m. and 7:00 p.m. are 55 dBA (L_{eq}) and 75 dBA (L_{max}) (Nevada County 2007). The Osborne Hill project site is surrounded on the east, west, and south sides by land classified as Residential District, which also requires that noise limits do not exceed 55 dBA (L_{eq}) and 75 dBA (L_{max}) between 7:00 a.m. and 7:00 p.m. (Nevada County 2007). City noise limits for fixed noise sources are comparable to County exterior noise limitations (Quad Knopf 1999). In addition, Section 8.28.100 of the City municipal code prohibits construction activities between 7:00 p.m. and 7:00 a.m. within 500 feet of a city residential area (City of Grass Valley n.d.). Empire Mine SHP is not zoned within the City of Grass Valley (City of Grass Valley 2007). The park unit is located just outside and to the south of the City Limits and within the City Planning Area.

Empire Mine SHP is located off of East Empire Street in a rustic area. The park unit is known for its natural, quiet setting with typical sounds such as bird song, wind through the trees, and water running in Little Wolf Creek. Throughout the year, tourists, local residents, school children, horses, and bikes are likely to be heard within the park unit particularly at the Visitor Center, formal gardens, mining buildings, and along the numerous recreational roads/trails. Six housing units and two mobile home pads are situated in the park unit and could accommodate as many as twelve residents; currently four of the houses and one mobile home accommodate eight year-around residents (Clark 2008, Munson 2008a). The Equipment Storage Yard is approximately 0.25 mile south of the nearest DPR park personnel residence and the Osborne Hill project site is about 0.50 mile south and east of the nearest park residences (Munson 2008b). Private residences are situated along Osborne Hill Road, which is a private neighborhood street located to the east of Osborne Hill and the park unit boundary (Wells 2008).

Nine municipal airports, private airfields, or heliports exist throughout Nevada County (Hometown Locator 2008, United States Geological Survey 2006). Of these, two private heliports are within two miles of the park unit boundary. The Grass Valley Service Center Heliport is less than 0.5 mile west of the park unit boundary and about 1.25 miles west of the project site at Osborne Hill. The Shaws Hill Heliport is approximately 1.25 and 2 miles north of the park unit boundary and Osborne Hill respectively.

Two public facilities with sensitive receptors (as defined above) are located within several hundred feet of the eastern park unit boundary and within 0.50 miles of Osborne Hill. The facilities include Grass Valley Seventh Day Adventist Church on Osborne Hill Road and Calvary Bible Church of Grass Valley on State Route (SR) 174 (Superpages.com 2008).

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☒	☐
b) Generate or expose people to excessive groundborne	☐	☐	☒	☐

vibrations or groundborne noise levels?				
c) Create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project)?	☐	☐	☐	☒
d) Create a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project, in excess of noise levels existing without the project?	☐	☐	☒	☐
e) Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f) Be in the vicinity of a private airstrip? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Noise is based on criteria **XI a – f**, described in the environmental checklist above.

DISCUSSION

a) Trucks and heavy equipment including, but not limited to, an excavator and dump truck would operate during materials delivery and construction activities. In addition, crews would perform road/trail work by using hand-held tools, where feasible. Project related noise levels at the Equipment Yard and along trail alignments on Osborne Hill would fluctuate, depending on the type and number of vehicles and equipment in use at any given time. Not all trails would be installed, repaired, or decommissioned at one time; some Osborne Hill trails would remain open for visitor use during project implementation. Depending on the specific project related activities being performed, short-term increases in ambient noise levels could result in speech interference near the project sites and could annoy park visitors. Under these circumstances, visitors could recreate in the northern portion of Empire Mine SHP or seek out other nearby parks and recreation facilities.

   Generally, project related work would not occur during on weekends or holidays when visitation is higher than during the week. Weekend work could be implemented, but only to accelerate the proposed project or address emergency or unforeseen circumstances. Noise associated with the proposed project is considered to have a potentially significant short-term impact to nearby noise-sensitive receptors. Implementation of the following minimization measure would reduce potential impacts to a less than significant level.

PROJECT REQUIREMENT NOISE-1: NOISE EXPOSURE
• Project related activities will generally be limited to the daylight hours, Monday through Friday. However, weekend work will be implemented to accelerate construction or address emergency or unforeseen circumstances. If weekend work is necessary, no work will occur on those days before 8:00 a.m. or after 6:00 p.m. • Internal combustion engines used for any purpose at the project site will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for project related activities will utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever feasible and necessary. • Stationary noise sources and staging areas will be located as far from visitors as possible. If they must be located near visitors, stationary noise sources will be muffled to the extent feasible, and/or where practicable, enclosed within temporary sheds.

b) Project related activities would not involve the use of explosives, pile driving, or other intensive construction techniques that could generate significant ground vibration or noise. Minor vibration adjacent to mechanized equipment and road/trail treatments during construction work would be generated only on a short term basis. Therefore, ground-borne vibrations and noises would have a less than significant impact.

c) Once road/trail installation, repair, decommissioning, and associated work are completed, project related noises would cease. The project would not create any source of noise that would contribute to a substantial permanent increase in noise levels in the vicinity of the project site. No impact.

d) See Discussion (a) and (c) above. Implementation of **PROJECT REQUIREMENT NOISE-1** will reduce any potential impacts to a less than significant level.

e) The project is not located within an airport land use plan but is within two miles of two privately owned heliports including the Grass Valley Service Center Heliport and the Shaws Hill Heliport. See Discussion (a) and (c) above. Implementation of **PROJECT REQUIREMENT NOISE-1** will reduce any potential impacts to a less than significant level.

f) The project is located within two miles of two privately owned heliports. Implementation of **PROJECT REQUIREMENTS NOISE-1** will reduce any potential impacts to a less than significant level.

XII. POPULATION AND HOUSING

ENVIRONMENTAL SETTING

Empire Mine SHP is located within the Planning Area boundary for the City of Grass Valley, Nevada County (City of Grass Valley 2007). Land uses on the properties bordering the park unit include Residential, Mixed Use, Commercial, and Industrial (City of Grass Valley 2007, County of Nevada 2008).

Empire Mine SHP is listed on the National Register of Historic Places (NPS 2008). Due to the significant historical features located at the park unit and the educational opportunities provided by them, as well as opportunities for hiking, horse riding, and picnicking, the park unit receives 93,292 local and out-of-town visitors on average per year (See Chapter 2 Section 2.7).

The population of Grass Valley has oscillated between highs and lows dependent upon economic conditions due to gold mining, migration of people away from large cities, and economic recession conditions (City of Grass Valley 1998). The population for Nevada County in 2006 was 99,584 people, with 13% of the population (i.e., 13,031 people) living in Grass Valley (DOF 2007a). The population estimates for 2008 predict that 99,186 people are living in Nevada County and 12,929 are living in Grass Valley (DOF 2008). Those numbers indicate a 1% decrease in the population of both Grass Valley and Nevada County.

According to the 2007 Population Projection by Race/Ethnicity, Gender, Age report from the California Department of Finance, the population for Nevada County would increase to 136,113 people by 2050, which is an increase of 73% from the 2006 population level (DOF 2007b). The projected population increases for the years 2010, 2020, 2030, and 2040 are 102,649, 114,451, 123,940, and 130,404 respectively (DOF 2007b).

Housing within the boundaries of Empire Mine SHP is limited to six housing units and two mobile home pads for DPR personnel and their families (Clark 2008, Munson 2008). The permanent population of the park unit is relatively static, with approximately eight to twelve people living in the park unit year round (Clark 2008). These numbers are based on DPR staffing requirements, and no significant growth in the park population is anticipated in the foreseeable future. No business or residential opportunities are offered at the project site.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of	☐	☐	☐	☒

replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis for determining the significance of impacts of the Proposed Action to Population and Housing is based on criteria **XII** a-c, described in the environmental checklist above.

DISCUSSION

a-c) The proposed project would construct new, reconstruct existing, and close trails throughout the Osborne Hill trail network to accommodate the recreational needs of trail users. The project does not have a housing component and all work would take place within the confines of the park unit boundary, with no additions or changes to existing local infrastructure. The project would neither modify nor displace any existing housing and would displace no people, either temporarily or permanently. DPR trail crews would conduct the majority of work associated with the project. Therefore, no jobs are expected to be generated as a result of the project. No impact.

XIII. PUBLIC SERVICES

ENVIRONMENTAL SETTING

Public services include fire and police protection, schools, parks, and other public facilities. The proposed Osborne Hill project site benefits from existing public services, such as fire and police protection, because Empire Mine SHP is within the Planning Area boundary for the City of Grass Valley, Nevada County (City of Grass Valley 2007). However, it is important to evaluate the ability of service agencies to adequately provide assistance both during and after project construction.

Fire Protection

The California Department of Fire and Forestry Protection (CalFire) has primary jurisdiction for fire suppression in State Responsibility Areas (SRA), including units of the State Park System (CalFire 2007). The closest CalFire station to Empire Mine SHP is northeast in Nevada City approximately 5.0 miles from the park unit and 5.5 miles from the project site (CalFire 2005). In addition, three local fire protection agencies, including the Grass Valley Fire Department (GVFD), Nevada County Consolidated Fire District (NCCFD), and Ophir Hill Fire District (OHFD), provide service within the Grass Valley General Planning Area (Quad Knopf 1999). GVFD currently has two stations serving the City of Grass Valley, the closest of which (Station 1) is about 1.5 miles and 2.0 miles northwest of the park unit main entrance and project site respectively (City of Grass Valley 2008, Google Maps 2008)). NCCFD staffs approximately fourteen stations in Nevada County, including four in the vicinity of Grass Valley which generally cover areas north, west, and south of the city. The closest NCCFD station to the park unit and project site is Station 1, which it staffs in conjunction with GVFD (NCCFD 2008). OHFD, which staffs one fire station at Cedar Ridge, serves areas east of Grass Valley. OHFD is approximately 1.7 miles southeast the park unit main entrance and 1.2 miles from the project site (Google Maps 2008). In addition, DPR fire crews stationed in the Lake Tahoe area could be activated to assist in fire suppression operations (DPR n.d.).

OHFD would likely respond first to a fire emergency at Empire Mine SHP (DPR n.d.); however, firefighting units from any of the three local agencies could be the first responders depending upon availability. Any local first responder agency would relinquish command to Calfire upon arrival of its crews and equipment on scene.

Police Protection

DPR rangers assigned to Empire Mine SHP are Peace Officer Standards and Training (POST) certified law enforcement officers. The rangers stationed at Empire Mine SHP patrol the park unit on a regular basis. The Grass Valley Police Department (GVPD) staffs a station approximately 1.5 miles from the park unit and provides police service for the City of Grass Valley (City of Grass Valley 2004, Google Maps 2008). The Nevada County Sheriff is located within Nevada City over 4.5 miles to the northeast of the park unit (Google Maps 2008). California Highway Patrol (CHP) has an office in Grass Valley approximately 2.25 miles north of the park unit (Google Maps 2008). If DPR rangers require assistance at Empire Mine SHP, GVPD and the Nevada County Sheriff would assist DPR with any issues within park unit boundaries and CHP would provide assistance along public roadways in the vicinity of the park unit.

Schools

Empire Mine SHP is located near three school districts that provide educational services to the City of Grass Valley and Nevada County. The Grass Valley School District (GVSD) provides public education for children from pre-school through eighth grade (GVSD 2008). Hennessy Elementary School, part of GVSD, is approximately one mile northwest of the project site (Google Maps 2008). Also part of the GVSD is Lyman Gilmore Middle School, located approximately two miles northwest of the park unit (Google Maps 2008). The Nevada Joint Union High School District provides high school educational services to Grass Valley (City of Grass Valley 1999). The closest high school to the project site is Sierra Foothills High School located approximately one mile northwest of Osborne Hill (Google Maps 2008). Union Hill Elementary School, just over one quarter mile east of the park unit, is part of the Union Hill Elementary School District (Google Maps 2008).

Parks and Other Public Facilities

Currently portions of the Osborne Hill trail network are closed to the public for health and safety reasons. During project implementation, the entire trail network would be closed to public use; however the remaining approximately 650 acres of the park unit would remain open. There could be temporary restrictions along East Empire Street while equipment and construction materials are brought to and from the project site. There are no other public service facilities nearby that could be impacted during project implementation.

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	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Result in significant environmental impacts from construction associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	☐	☐	☒	☐
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis for determining the significance of impacts of the Proposed Action to Public Services is based on criteria **XIII a**, described in the environmental checklist above.

DISCUSSION

This proposed project would construct new, reconstruct existing, and close trail alignments throughout the Osborne Hill trail network at Empire Mine SHP.

a) Fire Protection: Alterations to the Osborne Hill project site as a result of the proposed project are designed to improve, maintain, and reorganize existing trail facilities. None of the project elements would contribute to an increase of visitation and the level of required services is expected to remain relatively static. However, use of construction equipment around flammable annual vegetation presents an increased fire risk that could result in additional demands on CalFire and local fire response teams. Any impact on services would be temporary and nothing in the project scope would contribute to the need for an increase in the level of fire protection. Implementation of **PROJECT REQUIREMENT HAZMAT-6**, combined with the availability of on-site fire suppression equipment and support from DPR rangers, would reduce the potential impact to fire protection services to a less than significant level. As stated in the Environmental Setting above, DPR rangers with law enforcement authority patrol the park unit and guard against misuse of the property.

   Police Protection: Since DPR rangers patrol the park unit, the proposed project would not result in any need for increased police services. No impact.

   Parks and Other Public Facilities: There would be no impacts to schools, other parks, or other public facilities, as recreational trail users typically live locally or spend a limited amount of time visiting the area. No impact.

XIV. RECREATION

ENVIRONMENTAL SETTING

Nevada County is home to numerous city and county/regional parks, four state park units, and thousands of acres managed by the U.S. Forest Service (i.e., Tahoe National Forest) (USFS 2008) and Bureau of Land Management (BLM). These public lands provide a variety of outdoor recreation opportunities such as hiking, camping, and boating.

Empire Mine SHP consists of 853 acres (DPR 2008a, Kim Snyder 2008) on the western slope of the Sierra Nevada Mountain Range, and is located just south of the city of Grass Valley. The park unit is open year around and offers a variety of recreational opportunities, many of which are focused on the unique history of the oldest and richest gold mine in California (Empire Mine Park Association 2008). Public facilities include numerous day use areas and trails, historic mine workings and buildings, a visitor center and gift shop, museum, expansive formal gardens, and interpretive displays and exhibits highlighting the history of gold mining in California. Visitors learn about the region's history by enjoying garden tours, audio-visual presentations, and living history programs. Biking, hiking, horseback riding, picnicking, and wildlife viewing are other recreational opportunities in the park unit. Throughout the year various events such as luncheons, picnics, weddings, and fundraisers also are held at Empire Mine SHP.

Hiking, biking, and horseback riding are well established uses in the Osborne Hill area located in the southern portion of the park unit. The area consists of approximately 200 acres in a forested setting and contains a complex of official roads/trails (i.e., trail network) approximately 3.0 miles in length. DPR has determined that some trail alignments have unsustainable, steep grades and/or elevated metals such as arsenic (DPR 2008b, MFG 2006 and 2008). A portion of the existing Osborne Hill trail network is fenced and closed for public safety due to elevated levels of metals in the soil. The Osborne Hill area also contains about 3.0 miles of user created trails, also known as volunteer trails, that were created by public use in locations where DPR did not install trails(Table XIV-1). User created trails have not necessarily been designed with resource protection and public safety in mind (i.e., they could pass through areas with elevated metals or near open or unstable mine shafts), are not part of the official park trail network, and are not maintained by DPR.

The Nevada County Department of Transportation and Sanitation (NCDTS) is developing a Non-Motorized Transportation Master Plan (NCDTS 2000) that includes a Rural Recreational Trails Element. Many of the sections of the Osborne Hill trail network that are closed due to elevated metals until completion of the proposed project are located in Corridor Study Area 23 of the Non-Motorized Transportation Master Plan.

Table XIV-1: Pre- and Post- Project Road/Trail Lengths in the Osborne Hill Trail Network

Existing Trail Network (miles)		Proposed Trail Network (miles)	
Existing Official Roads	2.13	Reconstructed Official Roads (Reconstruct from Existing Roads)	0.94
		New Official Roads (Constructed from User Created Trails and New Alignments)	0.45
Existing Official Trails	0.82	Reconstructed Official Trails (Reconstruct from Existing Roads/Trails)	0.61
		New Official Trails (Constructed from User Created Trails and New Alignments)	2.00
SUBTOTAL	2.95	SUBTOTAL	4.00
User Created Trails	2.97	User Created Trails	0
TOTAL	5.92	TOTAL	4.00

The proposed project would reconstruct specified official roads/trails along existing alignments, close other existing roads/trails, and construct new roads/trails along entirely new alignments on the project site. In addition, it would close certain user created trails and construct others as new official park roads/trails (Appendix A: Map 2 and Tables 1 and 2; Table XIV-1). Sections of the existing official trail network that are currently fenced due to elevated metals would be closed and re-routed, or covered with an aggregate cap to protect visitors and then re-opened. The total length of proposed official roads/trails in the Osborne Hill trail network would total about 4.0 miles (Table XIV-1). Fifty-tree percent of existing official road/trail alignments and 25% percent of user created trails would be incorporated into the new proposed Osborne Hill trail network.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Recreation is based on criteria **XIV a – b**, described in the environmental checklist above.

DISCUSSION

a) The proposed project would neither increase the use of other state, county, or city parks, other public lands, or recreational facilities; nor would it increase the construction or expansion of any recreational facilities. The project is designed to modify the official Osborne Hill trail network to accommodate existing and projected levels of use.

   Project related activities would not occur during the summer months or on holiday weekends when visitation to Empire Mine SHP is high. In addition, not all roads/trails would be reconstructed, newly constructed, or closed at one time; several alignments would remain open for visitor use at any given time during project implementation. Other parts of the park unit would remain open during the project. Even though some visitors could use other parks and recreational facilities during the proposed project, any increase in use of other areas is expected to be minimal. Once the Osborne Hill Trail Network Project is completed, DPR would open all reconstructed and newly constructed roads/trails in the project area to visitors. The project is not anticipated to interfere with the Rural Recreational Trails Element of the NCDTS Non-Motorized Transportation Master Plan. Less than significant impact.

b) As summarized in the Environmental Setting above, DPR would reconstruct about 1.56 miles (53%) of existing official roads/trails and construct about 0.75 miles (25%) of user created trails into new official trail. In addition, the project would install about 1.69 miles of completely new road/trail to the official trail network. The proposed trail network would be built while removing any official roads/trails and any user created trails (a) with steep, unsustainable grades, (b) located in resource sensitive areas, and/or (c) that pass through areas containing mine shafts and/or elevated metals. Once the project is completed, the official Osborne Hill trail network would contain approximately 4.0 miles of safe, sustainable roads/trails, compared to the existing road/trail network which contains about 3.0 miles of official trails.

   Road/trail improvements would be sited and designed in a manner that would not result in permanent adverse physical effects on natural and cultural resources in the area. The project does not propose any road/trail work that would interfere with existing approved recreation activities. All official roads/trails in the proposed network would be maintained according to DPR standards for recreational trail facilities. The project is expected to provide recreational opportunities, increase public safety, and reduce environmental issues such as erosion associated with unsustainable road/trail grades. Less than significant impact.

XV. TRANSPORTATION / TRAFFIC

ENVIRONMENTAL SETTING

Empire Mine SHP is located just south of the Nevada City/Grass Valley area, which is the primary urban center in western Nevada County. The major transportation issues of western Nevada County include an increased demand for transportation brought on by rapid residential and commercial growth in a rural setting. The main transportation pattern for the western portion of the county involves residential commuter traffic that originates from within the area and travels outside the area from home to work sites (Nevada County 1996).

Three state highways are located close to Empire Mine SHP and include State Routes (SR) 49, 20 and 174. The segment of SR 49 located west of the park unit connects Interstate 80 (I-80) at the city of Auburn to SR 20 in Grass Valley. This segment of SR 49 is approximately twenty-three miles long and for much of its length is a two lane rural road. However, from about one mile south of Grass Valley, it becomes a four lane freeway (California Highways 2008a). As it enters Grass Valley, SR 49 merges with SR 20 and at this location also provides access to the Empire Mine SHP entrance by way of West and East Empire streets. SR 20 runs in an east-west direction through the center of Grass Valley and is located north of the Empire Mine SHP. The stretch of SR 20 between where it merges with SR 49 and where it enters Nevada City is a four lane highway and is approximately five miles long (California Highways 2008b). SR 174 is an approximately thirteen mile long rural, two lane road that connects I-80 at Colfax to SR 20/49 in Grass Valley (California Highways 2008c). Approximately three miles from its northern terminus in Grass Valley, SR 174 bisects Empire Mine SHP and separates the Union Hill portion of the park unit from the rest of the unit, including the Osborne Hill project site. SR 174 provides access to the park entrance at its intersection with the eastern terminus of East Empire Street. Grass Valley city streets such as South Auburn, Kate Hayes, and Pine streets intersect East Empire Street, providing surface street access to the park unit. Pedestrian access gates and vehicular gates used for ranger patrols, park maintenance, and emergency access are accessible from the one-lane Osborne Hill Road, a private residential street. No public parking areas for Empire Mine SHP are accessible from Osborne Hill Road, but the area within the vehicle gate at Node H is currently used to store materials used for park maintenance (Appendix A: Figures 1 and 2).

Level of Service (LOS) is a means of describing traffic flow conditions based on delays and maneuverability. Ratings range from LOS “A” which describes free flowing conditions with no delays, to LOS “F” which represents gridlock and significant delays. Nevada County has established policies to maintain or improve LOS standards for roads in rural regions to a minimum level of C and for roads in community regions to a minimum level of D (Nevada County 1996). The 2005 Regional Transportation Plan produced by the Nevada County Transportation Commission (NCTC 2006) provides information for Year 2000 peak hour volumes in one direction along road stretches in the vicinity of Empire Mine SHP. SR 20 (i.e., East Main Street approximately 1.5 mile due north of the park unit) was listed with 3,150 vehicles per hour (vph). SR 49 approximately 0.5 mile south of the SR 49/20 merge had 3,000 vph, while SR 174 about 1.5 miles south of its intersection with SR 20 was listed with 550 vph. Empire Street, adjacent to Empire Mine SHP had 360 vph. All these locations were listed as having an LOS of “A”, with the exception of Empire Street for which an LOS reading was not

provided.

While the primary mode of transportation in Nevada County is by private automobile, transportation by public transit, rail, air, and non-motorized facilities are also available. The Gold Country Stage bus serves approximately a dozen communities in western Nevada County such as Grass Valley. Two bus lines, including the Grass Valley Loop (Route 3) and the Colfax Route (Route 12) stop within one half mile of Empire Mine SHP (Nevada County Community Development Agency 2006). Southern Pacific operates rail tracks that parallel I-80. Amtrak's Capitol Corridor route connects the capitol cities of Reno and Sacramento and runs through to the Bay Area along the Southern Pacific track. Daily stops occur in the Placer County city of Auburn, twenty-three miles south of Grass Valley (Nevada County 2006, Amtrak 2008) and in the Nevada County town of Truckee fifty-five miles east. Nine municipal airports, private airfields, and heliports are situated throughout Nevada County (Hometown Locator 2008, USGS 2008). Of these, the Nevada County Airpark is the main municipal airport serving western Nevada County and it is located over two miles east of Grass Valley and Empire Mine SHP (Hometown Locator 2008, Nevada County 2006). Two private heliports are within two miles of the park unit boundary. The Grass Valley Service Center Heliport is less than 0.5 mile west of the park boundary and about 1.25 miles west of the project site. The Shaws Hill Heliport is approximately 1.25 and 2 miles north of the park boundary and Osborne Hill respectively.

County non-motorized facilities include bicycle routes and hiking trails (NCTC 2006). Bicycle routes are becoming an increasingly integral part of the transportation system in high density areas (e.g., Grass Valley, Nevada City) where trip beginning and end points are relatively close together compared to rural parts of the county. Several bicycle and multi-use non-motorized transportation routes are proposed in the vicinity of Empire Mine SHP primarily alongside existing transportation routes. Proposed and officially designated bicycle routes within one half mile of the park unit would run alongside SR 49, SR 20, SR 174, East Empire Street/Empire Mine SHP trails, South Auburn Street, and Colfax Avenue (NCTC 2007). Hiking trails in or passing through Nevada County are oriented toward recreation use; however, a non-motorized transportation route, called Corridor Study Area 23 (i.e., Rattle Snake Road Corridor), is proposed through Empire Mine SHP along the eastern portion of the Osborne Hill Loop Trail (Nevada County Department of Transportation and Sanitation 2000).

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Cause a substantial increase in traffic, in relation to existing traffic and the capacity of the street system (i.e., a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, individually or cumulatively, the level of service standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐

c) Cause a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Contain a design feature (e.g., sharp curves or a dangerous intersection) or incompatible uses (e.g., farm equipment) that would substantially increase hazards?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Result in inadequate parking capacity?	☐	☐	☒	☐
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Transportation and Traffic is based on criteria **XV a – g**, described in the environmental checklist above.

DISCUSSION

a) The proposed project would occur within Empire Mine SHP. Vehicles used to haul equipment and materials (e.g., soil) to/from the project site within the park unit could increase traffic on local streets. However, trips made by construction vehicles would be temporary and intermittent; the addition of a limited number of vehicles would not cause a significant increase in traffic volume.

   In residential areas, trucks would comply with all local size and weight restrictions. No local public roads located outside of the park unit would be blocked. Large vehicles such as trucks would haul equipment and materials on the one lane, private Osborne Hill Road to/from Node H (Appendix A: Figures 1 and 2) within the park unit boundary. Therefore, project related vehicles on Osborne Hill Road temporarily could block local traffic. Implementation of **PROJECT REQUIREMENT TRAFFIC-1** will reduce impacts of traffic delays on Osborne Hill Road to a less than significant level.

PROJECT REQUIREMENT TRAFFIC-1: TRAFFIC CONTROL
• DPR will coordinate with residents who access their homes from Osborne Hill Road to develop and implement traffic control measures during delivery and removal of project related equipment and materials.

b) As noted in the Environmental Setting, routes in the vicinity of and that lead to the entrance of Empire Mine SHP currently operates at LOS “A”. The temporary addition of a limited number of project related vehicle trips per day during daylight hours would not exceed, individually or cumulatively, the LOS rating for SR 49, 20, or 174. As described in Discussion (a) above, no local public roads would be blocked, but the private residential Osborne Hill Road could be temporarily blocked. Implementation of **PROJECT REQUIREMENT TRAFFIC-1** above will reduce potential impacts to a less than significant level.

c) The Grass Valley Service Center Heliport and Shaws Hill Heliport are the nearest airports to the project site. The heliports are 0.5 and 2.0 miles from Osborne Hill respectively. The proposed project does not contain any component that would affect traffic levels or the location of an existing airport. Therefore, the project would not cause a change in air traffic patterns. No impact.

d) The proposed project would not alter any roads or county bicycle routes that are currently in use or increase hazards to traffic. No transportation related changes would result. No impact.

e) The addition of construction vehicles and equipment could cause minor delays along interior park roads. However, roads/trails at the project site are interconnected and have several access points for the public (entry gates for pedestrian, bicycle, and horse access) and DPR personnel (locked vehicle gates) (Appendix A: Figure 1). The interconnected nature of the trail network would ensure that the temporary closure of certain road/trail sections due to construction would not result in inadequate emergency access. In addition, the proposed trail network (Appendix A: Figure 2) has been designed to maintain road alignments throughout Osborne Hill and the existing park access points for emergency vehicle access. Less than significant impact.

f) Although project-related personnel could park in visitor parking while working at the project site, resulting in a temporary loss of parking spaces for visitors, the proposed project is scheduled during the off-season when demand for visitor parking is reduced. Therefore, loss of visitor spaces would not result in inadequate parking. Less than significant impact.

g) As stated in the Environmental Setting, the City of Grass Valley and Nevada County have existing and proposed plans that include alternative transportation methods adjacent to and through Empire Mine SHP. However, the proposed DPR project would not alter or impact any roads or other alignments identified for proposed new bicycle or pedestrian transportation routes associated with the Nevada County Bicycle Master Plan (NCTC 2007). In addition, the proposed Osborne Hill Loop alignment would consist of a more sustainable grade, including a firm surface and adequate outslope drainage. No impact.

XVI. UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL SETTING

Empire Mine SHP is located 1.5 miles southeast of the City of Grass Valley (City of Grass Valley 2007). The following utilities and service systems are available at the park unit for the visiting public and DPR personnel. Most utilities and services are concentrated near the park unit entrance at facilities such as the Visitor Center and public restrooms, gardens and grounds, and at park residences. No existing restroom facilities, water fountains, or waste collection containers, are situated in Osborne Hill area.

Water

Empire Mine SHP utilizes both ground and surface water to meet the various needs of the park unit. Ground water that flows in an underground network of tunnels beneath the park unit is accessed via wells and only used for irrigation purposes. Potable water for the park unit is supplied by the Nevada Irrigation District (NID) (Clark 2008a). NID collects water from a high mountain watershed, stores the water in reservoirs, and moves it through a canal system to water treatment facilities (NID 2007). Potable water is then piped from the water treatment facility to Empire Mine SHP.

Wastewater

Empire Mine SHP is not connected to the municipal wastewater service provided by the Grass Valley Public Works Department (City of Grass Valley 2004, Clark 2008a). DPR utilizes septic systems and leach fields for the treatment and removal of wastewater that originates from inside the park unit (Clark 2008).

Solid Waste

DPR park personnel collect trash from public day use facilities and park residences and transport it to large bins where it is removed by Waste Management International to an approved offsite disposal facility (Clark 2008b).

Other Service Systems

Electrical service to Empire Mine SHP is provided by PG&E. A power line easement runs in an east-west direction along a PG&E easement, bisecting Osborne Hill.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Exceed wastewater treatment restrictions or standards of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities?	☐ Yes	☒ No		
Would the construction of these facilities cause	☐	☐	☐	☒

	significant environmental effects?				
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities?	☐ Yes	☒ No		
	Would the construction of these facilities cause significant environmental effects?	☐	☐	☐	☒
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	☐	☐	☐	☒
e)	Result in a determination, by the wastewater treatment provider that serves or may serve the project, that it has adequate capacity to service the project's anticipated demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g)	Comply with federal, state, and local statutes and regulations as they relate to solid waste?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

The analysis of determining the significance of impacts of the Proposed Action to Utilities and Service Systems is based on criteria **XVI** a-d, described in the environmental checklist above.

DISCUSSION

a) Empire Mine SHP is within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRQQCB). The proposed project would be in compliance with all applicable water quality standards and waste water discharge requirements. No impact.

b, c) As noted in the Environmental Setting above, there are no existing water, wastewater, or storm water drainage facilities to serving trails in the Osborne Hill area. The project would be designed to control potential erosion by providing outslope sheet drainage across trail tread and employing BMPs (See **PROJECT REQUIREMENT HYDRO-1**). The construction or expansion of storm water drainage facilities is not required. No impact.

d) Potable water for Empire Mine SHP is provided by NID. The water supply for the park unit is adequate to meet existing demand. The proposed project does not include the construction of new facilities that would increase demand for water from visitors or DPR park personnel. Overall water use is not expected to change as a result of the project. No impact.

e, f) As described in the Environmental Setting above, currently no wastewater or solid waste facilities are located at the project site. DPR would not install wastewater or solid waste facilities as part of the proposed project. During construction, a portable toilet could be needed for construction personnel. Wastewater generated at the portable toilets would be

contained in holding tanks and transported for disposal at approved offsite locations. No impact.

g) The proposed project does not have a solid waste component. No impact.

CHAPTER 4
MANDATORY FINDINGS OF SIGNIFICANCE

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal?	☐	☒	☐	☐
b) Have the potential to eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
c) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probably future projects?)	☐	☐	☒	☐
d) Have environmental effects that will cause substantial adverse effects on humans, either directly or indirectly?	☐	☐	☒	☐

DISCUSSION

a) The proposed project was evaluated for potential significant adverse impacts to the natural environment and its plant and wildlife communities (Biological Resources, Hydrology and Water Quality). The project site supports certain special status plant and animal species. DPR has determined that the project would have the potential to degrade the quality of the habitat for California spotted owl and potential nesting habitat for other raptors and migratory birds. In addition, the project would have the potential to reduce the number or restrict the range of rare or endangered animals, including the Humboldt lily (*Lilium humboldtii* ssp. *humboldtii*), True's manzanita (*Arctostaphylos mewekka* ssp. *truei*), California red-legged frog (CRLF), and sensitive bat species. The project also would have the potential to degrade water quality by causing erosion, sedimentation, and release of pollutants, such as vehicle fluids and elevated metal concentrations into the environment. However, full implementation of all project requirements and mitigation measures incorporated into this project would reduce those impacts, both individually and cumulatively, to a less than significant level.

b) The proposed project was evaluated for potential significant adverse impacts to the cultural resources of Empire Mine SHP and its immediate environment. DPR has determined that proposed project activities would have the potential to cause significant adverse impacts to

historic and archaeological resources. Full implementation of the project requirements and mitigation measures incorporated into this document would reduce impacts to historic trails, mine and mill features, and previously unidentified archaeological sites and features to a less than significant level.

DPR often has smaller maintenance programs, as well as rehabilitation and interpretation projects planned for a park unit, but no other projects, other than for routine maintenance, are planned for the Osborne Hill project site in the foreseeable future. In addition, the Osborne Hill Trail Network Project is part of a series of inter-related projects for mine remediation at Empire Mine SHP. Remediation work already completed in various areas of the park unit under an Emergency Notice of Exemption (NOE) includes capping or fencing off certain trail segments containing elevated metal concentrations, capping the Red Dirt Pile, and park residence clean-up. Currently, DPR is preparing a park-wide Programmatic Environmental Impact Report (PEIR) for a project to address elevated metal concentrations in the natural environment caused by historic mining activities. The park-wide project consists of remediation activities required to abate risks in areas of Empire Mine SHP addressed under a Cleanup and Abatement Order and an Imminent and/or Substantial Endangerment Determination and Partial Consent Order that DPR and Newmont USA Ltd. entered into with the Department of Toxic Substance Control (DTSC) and Central Valley Regional Water Quality Control Board (CVRWQCB). While the Programmatic EIR will evaluate areas of the park unit southwest of State Route 174, DPR is preparing a separate document under *independent utility* to evaluate and address impacts to the Osborne Hill trail network. In considering whether to treat a the Osborne Hill Trail Network Project as a de facto part of a larger project (PEIR remediation activities) rather than as a separate project under *independent utility*, DPR determined that the potential later activities covered under the PEIR would not be reasonably foreseeable consequences of the limited Osborne Hill Trail Network remediation activities (Remy *et al*. 2007).

Potential impacts from environmental issues addressed in this evaluation do not overlap in such a way as to result in cumulative impacts that are greater than the sum of the parts. Less than significant impact.

d) Most project related environmental effects have been determined to pose a less than significant impact on humans. However, possible impacts from visual effects of new equipment (Aesthetics), fugitive dust (Air Quality), construction accidents and exposure to elevated metals (Hazards and Hazardous Waste), and construction-generated noise (Noise), though temporary in nature, have the potential to result in significant adverse effects on humans. These potential impacts would be reduced to a less than significant level if all project requirements incorporated into this project are fully implemented.

CHAPTER 5
SUMMARY OF PROJECT REQUIREMENTS AND MITIGATION MEASURES

DPR will implement the following project requirements and mitigation measures to reduce project impacts from the proposed Osborne Hill Trail Network Project.

AESTHETICS

PROJECT REQUIREMENT AES-1: TRAIL FENCE COLOR

- To the greatest extent feasible, new fences will be constructed of material and be of a color that blends in with the natural surroundings.

AGRICULTURAL RESOURCES

No project requirements or mitigations measures are necessary.

AIR QUALITY

PROJECT REQUIREMENT AIR-1: DUST AND OZONE REDUCTION

- All active construction areas will be lightly sprayed at least twice daily during dry, dusty conditions to reduce dust without causing runoff.
- All trucks or light equipment hauling soil, sand, or other loose materials on public roads will be covered or required to maintain at least two feet of freeboard.
- All gasoline-powered equipment will be maintained in good mechanical condition (according to manufacturer's specifications), and in compliance with all State and federal requirements.
- Excavation and grading activities will be suspended when sustained winds exceed 15 miles per hour (mph), instantaneous gusts exceed 25 mph, or dust from construction related activities could obscure driver visibility on public roads.

BIOLOGICAL RESOURCES

MITIGATION MEASURE BIO-1: HUMBOLDT LILY

- During all trail work, DPR will remove excavated soil along the trail segments. No excavated soils will be side cast into the surrounding habitat in order to minimize impacts to the Humboldt lily. DPR will use excess excavated soil that does not contain elevated metals to raise the tread along other trail alignments where needed or remove it from the project site.

MITIGATION MEASURE BIO-2: TRUE'S MANZANITA

- Prior to the start of construction, a DPR-qualified biologist will flag all True's manzanita found along the trail alignments.
- DPR will install and maintain fence around all flagged True's manzanita plants to avoid impacts during construction and will remove any fencing after construction activities are completed.

MITIGATION MEASURE BIO-3: CALIFORNIA RED-LEGGED FROG (CRLF)

- Prior to construction, a USFWS-approved biologist will conduct a training session to familiarize all construction personnel with identification of California red-legged frogs

(CRLF) and other sensitive species, their habitat, general provisions and protections afforded by the Endangered Species Act, measures implemented to protect the CRLF and other sensitive species, and a review of project boundaries. During this training, all construction personnel will be provided with species identification cards (that include species photos) for the CRLF. All construction personnel will complete the training before they are authorized to work on the project site.

- DPR will designate an official point of contact (POC) to be onsite during construction activities in case a CRLF is found. If a CRLF is found onsite, all work in that location will be halted until the DPR Project Manager is contacted and the USFWS-approved biologist and the USFWS are consulted for further direction.
- A USFWS-approved biologist will be present at all times during installation and removal of the temporary stream crossing at Little Wolf Creek.
- All work will occur during daylight hours.

MITIGATION MEASURE BIO-4: NESTING RAPTORS AND SENSITIVE BIRDS

- To the extent possible, all outside construction activities and tree removal will occur outside the breeding season (breeding season is March 1 – August 31) for nesting raptors and sensitive birds.
- If construction activities are required during the California spotted owl breeding season (March 1 – August 31), protocol-level surveys to determine nesting status will be required. If the owl pair is determined to be non-breeding, construction activities will be permitted. If the owl pair is determined to be breeding, no tree removal or construction activities with the potential to create noise disturbance will be allowed within 1000 feet of the active nest until after the young have fledged and have the ability to fly out of the area of disturbance, as determined by a DPR-qualified biologist.
- If tree removal or initiation of construction activities which could potentially cause take of other nesting raptors or sensitive birds (as determined by a DPR-qualified biologist) are necessary during the breeding season (March 1 – August 31), pre-construction surveys will be required. If nesting raptors or sensitive birds are found at the project site, a buffer area of 250 feet will be established around the nest(s) and no activities which could potentially cause nest failure will be permitted until the nest is vacated and the juveniles have fledged, as determined by a DPR-qualified biologist.
- DPR trail crews will avoid placing trail alignments within the Structural Root Zone (i.e., three times diameter at breast height (dbh)) of trees that are equal to or greater than fifteen inches dbh (12 inches dbh for deciduous trees) where possible. If excavation work within the Structural Root Zone is required, no roots larger than two inches in diameter will be severed.
- No trees equal to or greater than fifteen inches dbh will be removed unless inspected by a DPR-qualified biologist and determined to be unsuitable as nesting habitat for California spotted owls and other sensitive birds.
- Construction of new road/trail alignments will be monitored at the discretion of a DPR-qualified biologist to ensure that impacts to California spotted owl and sensitive bird species nesting habitat is minimized.

PROJECT REQUIREMENT BIO-5: NESTING MIGRATORY BIRDS

- To the extent possible, all outside construction activities and habitat removal will occur outside the breeding season (breeding season is March 16 – August 15) for nesting migratory birds.
- If nesting habitat removal or initiation of construction activities which could potentially cause take of nesting migratory birds (as determined by a DPR-qualified biologist) are necessary during the breeding season (March 16 – August 15), pre-construction surveys will be required.
- If nesting migratory birds are found at the project site, a buffer area of 100 feet will be established around the nest(s) and no activities which could cause nest failure will be permitted until the nest is vacated and the juveniles have fledged (as determined by a DPR-qualified biologist).

PROJECT REQUIREMENT BIO-6: SENSITIVE BAT SPECIES

- No removal of trees which could provide roosting or maternity colony habitat for bats (as determined by a DPR-qualified biologist) will occur between March 1 –August 15.
- Any open mine shafts proposed for closure will be assessed for bat roosting or maternity colony suitability by a DPR-qualified biologist prior to closure. If mines proposed for closure are suitable for bats, then bat-friendly closure methods will be utilized (such as using a gate to close access from the public but still allow bat entry).

CULTURAL RESOURCES

MITIGATION MEASURE CULT-1: RECORDATION AND TREATMENT OF CULTURAL RESOURCES FOR ROAD/TRAIL CLOSURES

- Prior to the start of construction, a DPR-contracted cultural resource specialist will record all historic features within the Osborne Hill area of Empire Mine SHP to update the National Register of Historic Places nomination of the entire park unit and identify the contributing historic features within the historic district.
- DPR trail crews will re-contour and close only the beginning and end portions of each historic road/ trail identified for closure to block access; DPR trail crews will abandon the middle portion of each road/trail in place to retain the footprint of the alignment on the landscape.
- All historic features within fifteen feet of any road/trail alignment in the proposed Osborne Hill trail network will be fenced at the discretion of the DPR-qualified cultural resources specialist to protect the features from damage.

MITIGATION MEASURE CULT-2: RECORDATION AND TREATMENT OF CULTURAL RESOURCES FOR TRAIL CONSTRUCTION

- Prior to the start of construction of each segment, a DPR qualified cultural resources specialist will identify and flag cultural resources present within each trail alignment that will be avoided during trail construction.
- All trail construction will be monitored at the discretion of a DPR-qualified cultural resources specialist.
- If intact cultural features are uncovered during trail construction by anyone, the DPR-qualified cultural resources specialist will record and evaluate the find and implement avoidance, preservation, or recovery measures. If avoidance is required, trail crews will

modify the trail alignment to avoid the previously unknown resources at the discretion of the DPR-qualified cultural resources specialist and in coordination with any necessary regulatory agencies.

- DPR trail crews will cover intact historic features on the historic roads, trails and/or rail alignments with soil fill material, aggregate cap, or a boardwalk. If fill material is used, trail crews will install a filter cloth fabric between the original ground surface and any imported fill to distinguish the fill from original material.

MITIGATION MEASURE CULT-3: TRAIL SIGNAGE FOR RESOURCE PROTECTION

- DPR will install interpretive signs to differentiate historic trails from newly constructed trails. These signs will include the mining history of the Empire Mine SHP and the necessity for the public to stay on existing official roads and/or trails.
- Additional signs will notify the public that persons who vandalize, damage, or destroy cultural resources will be prosecuted to the full extent of the law.

MITIGATION MEASURE CULT-4: COVERING RESOURCE SENSITIVE AREAS

- Trail crews will protect any existing trail alignments that cannot be re-aligned to avoid archaeological deposits by covering the resource sensitive area with imported fill soil to prevent damage, looting, and vandalism.

PROJECT REQUIREMENT CULT-5: PREVIOUSLY UNDOCUMENTED RESOURCES

- In the event that the DPR-qualified cultural resources specialist determines that significant, previously undocumented/unflagged cultural resources (including but not limited to dark soil containing shellfish, bone, flaked stone, groundstone, or deposits of historic material) are encountered during project construction, the DPR Project Manager will put work on hold at that specific location and work will be redirected to other tasks. A DPR-qualified cultural resource specialist will record and evaluate the find and work with the DPR Project Manager to implement avoidance, preservation, or recovery measures as appropriate prior to any work resuming at that specific location.
- In the event that the DPR-qualified cultural resources specialist determines that these finds are significant cultural resources, a qualified historian, archaeologist, and/or Native American representative (if appropriate) will monitor all subsurface work including trenching, grading, and excavations in that area.

PROJECT REQUIREMENT CULT-6: HUMAN REMAINS

- In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager will notify the DPR Project Manager. Any human remains and/or funerary objects will be left in place. The DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (NAHC) will be notified within 24 hours of the discovery if the Coroner determines that the remains are Native American. The NAHC will designate the “Most Likely Descendent” (MLD) of the deceased Native American. The MLD will recommend an appropriate disposition of the remains. If a Native American monitor is on-site at the time of the discovery and that person has been designated the MLD by the NAHC, the monitor will make the recommendation of the appropriate disposition.

GEOLOGY AND SOILS

PROJECT REQUIREMENT GEO-1: POST-EARTHQUAKE INSPECTIONS

- Qualified DPR personnel will inspect trails for damage as soon as feasible after a large earthquake and close trails if determined that they pose a danger to trail users.

HAZARDS AND HAZARDOUS MATERIALS

MITIGATION MEASURE HAZMAT-1: TRANSPORT OF HAZARDOUS MATERIALS

- Prior to the start of project work, DPR will develop a transportation plan for the transport of potentially hazardous materials such as excess native soil generated during project construction from areas with metal concentrations above clean up goals. Any excess native soil generated during project construction from areas with metal concentrations above clean up goals will be removed and transported to an appropriate disposal facility in accordance with applicable federal, state, and local regulations.

PROJECT REQUIREMENT HAZMAT-2: SUSPENSION OF WORK

- Construction activities will be timed with awareness of precipitation forecasts. All on-site work will be suspended during heavy rainfall events of at least 0.50 inch of rain in a 24-hour period.

PROJECT REQUIREMENT HAZMAT-3: HEALTH AND SAFETY PLAN

- Prior to the start of any on site work, DPR will develop a Health and Safety Plan (or a Park-wide Plan may be used) that will be approved by the Project Manager. The plan will provide guidelines for safe work practices to prevent any hazards to the public, DPR personnel, or the environment from the release of hazardous materials or waste (chemical and biological). Specific items to be included are:
- Workers will complete a 40 hour training program in Hazardous Waste Operations and Emergency Response (i.e., 29 CFR 1910.120).
- The Health and Safety Plan and the project scope must contain procedures for storage, transport, and disposal of any hazardous waste generated as part of this project, including any excavated soils or spill cleanup materials.

PROJECT REQUIREMENT HAZMAT-4: DECONTAMINATION OF PROJECT VEHICLES AND EQUIPMENT

- DPR will set up decontamination areas for vehicles and equipment at any points of entry/exit for the project site, at points within the project site where metals in the soil transition from elevated to low levels, and at the existing decontamination wash facility located in the Maintenance Yard.
- Decontamination areas will be designed to completely contain all runoff generated from washing vehicles and equipment before they exit areas of elevated metals, the project site, and the park unit. DPR will install BMPs as necessary to prevent the dispersal of wash run-off beyond the boundaries of the decontamination area. This will also include, but not be limited to removal of soil, sand, or other loose materials from the exterior, including tires and undercarriage, of all trucks or lightweight equipment before entering public roads. Residuals generated will be disposed of consistent with industrial standards.

PROJECT REQUIREMENT HAZMAT-5: MAINTENANCE OF NEW FACILITIES

- DPR will participate in monitoring and maintaining the condition of Osborne Hill trail network road/ trail surfaces in perpetuity, including segments with elevated metals and covered with an aggregate cap. Information describing monitoring and maintenance requirements will be included in an Operations and Maintenance Agreement and a Land Use Covenant with DTSC. Coordination with DTSC to complete these agreements will follow after project work is completed. DPR will coordinate the development of an Operations and Maintenance Plan and participate in implementation of the Plan to assure that required protections are maintained.

PROJECT REQUIREMENT HAZMAT-6: WILDFIRE AVOIDANCE AND RESPONSE

- DPR will develop a Fire Safety Plan prior to the start of construction.
- Project construction will be timed (December – March) to occur during the rainy season which will minimize both dust and fire issues. In the event that conditions on the site are dry, a water truck will be onsite for all project construction activities involving equipment with the potential to start a fire.
- Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers will be required for all heavy equipment.
- Construction crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, heavy equipment will be parked over mineral soil, asphalt, or concrete to reduce the chance of fire.
- DPR personnel have a State Park radio on site, which allows direct contact with CalFire and centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire.

HYDROLOGY AND WATER QUALITY

PROJECT REQUIREMENT HYDRO-1: EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION

- Prior to the start of construction, DPR will prepare a Construction Storm Water Pollution Prevention Plan (SWPPP) that identifies the temporary and permanent Best Management Practices (BMPs) to be used in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during all trail excavation, grading, aggregate cover installation, and any other ground disturbing activities. The SWPPP will also include BMPs for hazardous waste and contaminated soil management.
- For construction activities (from October – March) that extend into the rainy season (October 15 – May 15) or if an un-seasonal storm is anticipated, DPR will properly winterize the site by covering (i.e., tarping) any stockpiled materials or soil and by constructing silt fences, straw bale barriers, fiber rolls, or other structures around stockpiles and areas of ground disturbance.

PROJECT REQUIREMENT HYDRO-2: WATER QUALITY PROTECTION

- In the event that DPR needs to access the project site by way of the existing crossing on Little Wolf Creek, DPR will install a temporary crossing structure across Little Wolf Creek to reduce sedimentation into the creek by eliminating direct contact of vehicles with the creek water; DPR will remove the crossing once project related activities are completed.

PROJECT REQUIREMENT HYDRO-3: ENERGY DISSIPATION

- If runoff must be concentrated, then DPR will install adequate energy dissipation at discharge points.

LAND USE AND PLANNING

No project requirements or mitigations measures are necessary.

MINERAL RESOURCES

No project requirements or mitigations measures are necessary.

NOISE

PROJECT REQUIREMENT NOISE-1: NOISE EXPOSURE

- Project related activities will generally be limited to the daylight hours, Monday through Friday. However, weekend work will be implemented to accelerate construction or address emergency or unforeseen circumstances. If weekend work is necessary, no work will occur on those days before 8:00 a.m. or after 6:00 p.m.
- Internal combustion engines used for any purpose at the project site will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for project related activities will utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever feasible and necessary.
- Stationary noise sources and staging areas will be located as far from visitors as possible. If they must be located near visitors, stationary noise sources will be muffled to the extent feasible, and/or where practicable, enclosed within temporary sheds.

POPULATION AND HOUSING

No project requirements or mitigations measures are necessary.

PUBLIC SERVICES

Refer to **PROJECT REQUIREMENT HAZMAT-6**.

RECREATION

No project requirements or mitigations measures are necessary.

TRANSPORTATION / TRAFFIC

PROJECT REQUIREMENT TRAFFIC-1: TRAFFIC CONTROL

- DPR will coordinate with residents who access their homes from Osborne Hill Road to develop and implement traffic control measures during delivery and removal of project related equipment and materials.

UTILITIES AND SERVICE SYSTEMS

Refer to **PROJECT REQUIREMENT HYDRO-1**.

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CHAPTER 6
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APPENDIX A

TRAIL FIGURES AND TABLES

APPENDIX B

ACRONYMS AND GLOSSARY