



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, US ARMY GARRISON, PRESIDIO OF MONTEREY  
1759 LEWIS ROAD, SUITE 210  
MONTEREY, CA 93944-3223

Office of the Garrison Commander

**AUG 20 2013**

Dear Interested Parties:

The Department of the Army invites all interested parties to review and comment on the Draft Environmental Assessment (EA) for the Huckleberry Hill Waterline Restoration Project at the Presidio of Monterey in Monterey County, California.

California American Water is proposing to implement pipeline repair and restoration activities in two areas affected by a water line break within and just outside the Huckleberry Hill Nature Preserve on the Presidio of Monterey. The proposed action is needed to restore the affected areas to pre-erosion conditions and to protect the pipeline and other facilities in the general area from future water damage and erosion should another pipeline or tank rupture. The proposed action occurs in federally listed endangered Yadon's piperia plant habitat and consists of repairing a damaged water supply pipeline, backfilling three gullies created by erosion caused by the water leak, and restoring the affected areas with native plants. The largest gully is located just downhill of Water Tank Road on the Nature Preserve, and two smaller gullies are located on the Presidio of Monterey property about 220 feet downhill and northeast of the large gully. In addition to the repair and restoration activities, general maintenance activities would be implemented near Water Tank Road to control erosion and protect the repaired pipeline and nearby trails over the long term.

The Draft EA was prepared pursuant to the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190, 42 U.S. Code §4321 et seq.), the Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations (CFR), Parts 1500–1508), and Environmental Analysis of Army Actions (32 CFR 651 March 2002). The EA evaluates potential environmental impacts of the proposed action and identifies measures to minimize or avoid adverse environmental effects.

Comments on the Draft EA are due no later than 5:00 p.m. on September 19, 2013.

The Draft EA is available for review at the following locations:

Monterey Public Library  
625 Pacific Street, Monterey, CA 93940-2821  
Phone: (831) 646-3932

Pacific Grove Library  
550 Central Avenue, Pacific Grove, CA 93950-2789  
Phone: (831) 648-5760

U.S. Army Garrison, Presidio of Monterey  
Department of Public Works  
4463 Gigling Road, Seaside, CA 93955  
Phone: (831) 242-7925

Presidio of Monterey website at:  
[http://www.monterey.army.mil/dpw/env\\_assessment.html](http://www.monterey.army.mil/dpw/env_assessment.html)

Please forward written comments to:

Attn: Lenore R. Grover-Bullington  
Directorate of Public Works, Environmental Division  
P.O. Box 5004  
Monterey, California 93944-5004

Via electronic mail to: [lenore.r.grover-bullington.civ@mail.mil](mailto:lenore.r.grover-bullington.civ@mail.mil)

Via facsimile to: (831) 242-7019

Sincerely,

  
Paul W. Fellingner  
Colonel, US Army  
Commanding

Enclosure

# **Finding of No Significant Impact and Environmental Assessment for the Huckleberry Hill Waterline Restoration Project**

***Draft***

**Presidio of Monterey  
Monterey County, California**

***Prepared for:***

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***Prepared by:***

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**August 2013**



# **Finding of No Significant Impact Huckleberry Hill Waterline Restoration Project**

## **August 2013**

This finding of no significant impact (FONSI) was prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, Public Law 91-190, 42 U.S. Code §4321 et seq.; the Council on Environmental Quality regulations for implementing NEPA, 40 Code of Federal Regulations (CFR), Parts 1500–1508; and Environmental Analysis of Army Actions, 32 CFR 651 (March 2002). The FONSI is the decision document for the attached Environmental Assessment (EA) for the Huckleberry Hill Waterline Restoration Project (proposed action). The U.S. Army Garrison, Presidio of Monterey (USAG POM) is the lead agency for the EA.

### **DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

California American Water (Cal-Am) is proposing to implement pipeline repair and restoration activities in two areas affected by a water leak within and just outside the Huckleberry Hill Nature Preserve on the Presidio of Monterey. The proposed action is needed to restore the affected areas to pre-erosion conditions and to protect the pipeline and other facilities in the general area from future water damage and erosion should another pipeline or tank leak. The proposed action consists of repairing a damaged water supply pipeline, backfilling three gullies created by erosion associated with the water leak, and restoring the affected areas with site-specific native plants. The largest gully is located just downhill of Water Tank Road on the Nature Preserve, and two smaller gullies are located on the Presidio of Monterey (POM) property about 220 feet downhill and northeast of the large gully. In addition to the repair and restoration activities, general maintenance activities would be implemented near the large gully to control erosion and protect the repaired pipeline and nearby trails over the long term.

Under the no-action alternative, the repair and restoration activities would not be implemented, and the exposed and damaged pipeline would remain in its current inoperable state.

Other alternatives were considered with regard to the methods and materials used for repairs and restoration activities, but these were dismissed from further consideration because of feasibility, environmental concerns, and costs.

## **SUMMARY OF ENVIRONMENTAL CONSEQUENCES**

After an initial examination of all resource areas, it has been determined that the proposed action would have no or insignificant impacts on agricultural resources, climate, environmental justice, geology, groundwater, hazards and hazardous materials, land use, noise, population and housing, public services, socioeconomics, transportation, and visual resources. Upon further analysis, it was determined that the proposed action would not have significant impacts on air quality, biological resources, cultural resources, soils, surface water resources, utilities and recreation facilities, or visual resources based on the restoration design and construction measures incorporated into the proposed action and implementation of Mitigation Measures BR-1 through BR-6.

### **Mitigation Measure BR-1: Protect Monterey pines in and near the proposed restoration area, to the extent feasible, and replace damaged pines as part of the restoration plan.**

During repair activities, Cal-Am and its contractor will be responsible for protecting Monterey pines within the restoration area to the maximum extent feasible. If any Monterey pines are damaged, the affected pines will be replaced during restoration activities at a 2:1 ratio in accordance with the POM Integrated Natural Resources Management Plan (USAG POM 2008). Source material for Monterey pine propagation will be collected within the forest habitat at Huckleberry Hill Nature Preserve and will be from trees exhibiting no symptoms of pitch canker infection. Also, if any tree work is needed (e.g., root cutting, pruning, or tree cutting), the trees will be treated for bark beetles prior to the work using standard practices recommended by the USAG POM's International Society of Arboriculture-certified arborist and in accordance with the POM Integrated Pest Management Plan (USAG POM 2004b). Unseasoned lumber or newly cut pine trees give off a fragrance that can attract the beetles to the area. If a broad-spectrum insecticide is planned, treatment will not occur during the flowering season (May to July) for endangered Yadon's piperia, so that potential effects of pollinators are minimized. During the growing season (December to July) of the plant, a qualified biologist will flag and cover piperia individuals where necessary prior to treatment. Any pesticides and methods used will follow current U.S. Fish and Wildlife Service (USFWS)-recommended strategies.

### **Mitigation Measure BR-2: Avoid the introduction of non-native or invasive plant species.**

Prior to entering the project area, workers will inspect their clothing, shoes, all vehicles, and equipment for invasive plant seeds or plant parts. If found, compressed water or air will be used within a designated containment area to remove pathogens, invasive plant seeds, or plant parts. Any invasive plant seeds or plant parts found in the containment area will be gathered, placed in plastic bags, and taken to an appropriate disposal facility. All temporary erosion control measures and imported topsoil used in association with the project will be certified weed-free.

Restoration and revegetation of Areas 1 and 2 will be conducted using site-specific native plants. To avoid or reduce the potential introduction of harmful, non-native plant pathogens and organisms, all container stock will be free of any weeds or pathogens when installed at Areas 1 and 2.

**Mitigation Measure BR-3: Use a botanist to conduct a pre-construction botanical survey, install protective fencing around Yadon's piperia populations, flag or fence any other special-status plant species encountered, and conduct worker awareness training.**

Prior to the installation of the protective fencing, Cal-Am will be responsible for retaining a qualified biologist or botanist to conduct a survey of Areas 1 and 2 and the access routes between those areas and the existing roads to flag and document the locations of Yadon's piperia and other special-status plant species, with a focus on any individuals that were not previously identified during earlier botanical surveys. The biologist or botanist will also assist with installing the protective fencing around the identified plant populations and individuals to ensure their protection during the repair and restoration activities. A biological monitor will be employed when conducting work adjacent to occupied Yadon's piperia habitat.

In addition, the biologist or botanist will conduct a worker awareness training for all contractors prior to any repair or restoration work. The training will include how to identify Yadon's piperia and other sensitive plant and animal species known to occur in the area and provide contact information for the USAG POM biologist for coordination with the USFWS and California Department of Fish and Wildlife prior to any ground disturbance in the event that a sensitive species is encountered. The training will be conducted on-site prior to or on the first day of the work.

**Mitigation Measure BR-4: Schedule activities during the dormant season for Yadon's piperia and minimize disturbance in occupied habitat.**

To the maximum extent feasible, repair and restoration activities associated with the proposed action that must occur in occupied Yadon's piperia habitat will be scheduled to be performed in the dormant season (August to November) for Yadon's piperia. In addition, repair and restoration work occurring within occupied Yadon's piperia habitat will be focused on existing access roads and limited to a minimal area of disturbance to the extent practicable. Staging areas, spoils storage, and equipment/vehicle parking will be located in designated areas outside of occupied habitat.

**Mitigation Measure BR-5: Avoid impacts to nesting birds.**

To avoid impacts to nesting migratory birds, restoration activities requiring mechanized equipment will be timed to occur outside the breeding bird season, which is generally from February 1 through August 31. The restoration activities during the breeding bird season will be preceded by a worker awareness training (see Mitigation Measure BR-3) that includes information on ground-nesting birds.

**Mitigation Measure BR-6: Avoid impacts to California condors.**

Condors are tracked very carefully, and in the event that they occur in or near the proposed restoration area, the Army will coordinate with the USFWS to ensure that no Army activities associated with this project will adversely affect the species.

**CONCLUSION**

Based on the environmental analyses contained in the EA, it has been determined that implementation of the proposed action would not have any significant direct, indirect, or cumulative impacts on the human environment. Because no significant impacts would result from implementing the proposed action, an environmental impact statement is not required and will not be prepared. The EA findings and conclusions are the basis for this FONSI.

**APPROVAL**

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Paul W. Fellingner  
Colonel, U.S. Army  
Commanding  
Presidio of Monterey

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Date

# Environmental Assessment for the Huckleberry Hill Waterline Restoration Project

**August 2013**

**Reviewed by:**

\_\_\_\_\_  
Lenore Grover-Bullington  
Chief, Environmental Division  
Presidio of Monterey Public Works

Date: \_\_\_\_\_

\_\_\_\_\_  
James Willison  
Director, Directorate of Public Works  
Presidio of Monterey

Date: \_\_\_\_\_

**Approved by:**

\_\_\_\_\_  
Paul W. Fellingner  
Colonel, U.S. Army  
Commanding  
Presidio of Monterey

Date: \_\_\_\_\_



# EXECUTIVE SUMMARY

California American Water (Cal-Am) has prepared this Environmental Assessment (EA) for the U.S. Army Garrison Presidio of Monterey (USAG POM, lead federal agency) to evaluate the environmental consequences of implementing pipeline repair and restoration activities (referred to as the Huckleberry Hill Waterline Restoration Project or proposed action in the EA) in two areas affected by a water leak within and just outside the Huckleberry Hill Nature Preserve on the Presidio of Monterey (POM) in Monterey, California. The proposed activities require authorization by the USAG POM because they would be implemented on U.S. Army lands. The USAG POM is required to comply with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code §4321 et seq.), the Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations, Parts 1500–1508), and the Environmental Analysis of Army Actions, 32 Code of Federal Regulations (CFR) 651 (March 2002) and to evaluate the effects of its actions on the environment.

## BACKGROUND

In October 2012, a Cal-Am water distribution line near an above-ground water storage tank ruptured, causing the release of a substantial quantity of water. The catastrophic release of water created a sizeable gully and two smaller gullies and exposed and damaged approximately 30 feet of a water supply pipeline. The erosion along the buried pipeline was greatest because of the presence of easily erodible backfill soils. Areas with previously undisturbed conditions and native vegetation were less affected.

## SUMMARY OF PROPOSED ACTION AND NO-ACTION ALTERNATIVE

The proposed action is needed to restore the affected areas to pre-erosion conditions and to protect the pipeline and other facilities in the general area from future water damage and erosion should another pipeline or tank leak. The proposed action consists of repairing a damaged water supply pipeline, backfilling three gullies created by erosion associated with the water leak, and restoring the affected areas with native plants. The largest gully is located just downhill of Water Tank Road on the Huckleberry Hill Nature Preserve, and two smaller gullies are located on the POM property about 220 feet downhill and northeast of the large gully. In addition to the repair and restoration activities, general maintenance activities would be implemented near the large gully to control erosion and protect the repaired pipeline and nearby trails over the long term.

Under the no-action alternative, the repair and restoration activities would not be implemented, and the exposed and damaged pipeline would remain in its current inoperable state.

## **SUMMARY OF ENVIRONMENTAL CONSEQUENCES**

The EA documents that the proposed action would not have any significant direct, indirect, or cumulative impacts on the human environment. After an initial examination of all resource areas, it was determined that the proposed action would have no or insignificant impacts on agricultural resources, climate, environmental justice, geology, groundwater, hazards and hazardous materials, land use, noise, population and housing, public services, socioeconomics, transportation, and visual resources. Upon further analysis, it was determined that the proposed action would not have significant impacts on air quality, biological resources, cultural resources, soils, surface water resources, utilities and recreation facilities, or visual resources based on the restoration design and construction measures incorporated into the proposed action and implementation of the following mitigation measures:

- Mitigation Measure BR-1: Protect Monterey pines in and near the proposed restoration area, to the extent feasible, and replace damaged pines as part of the restoration plan.
- Mitigation Measure BR-2: Avoid the introduction of non-native or invasive plant species.
- Mitigation Measure BR-3: Use a botanist to conduct a pre-construction botanical survey, install protective fencing around Yadon's piperia populations, flag or fence any other special-status plant species encountered, and conduct worker awareness training.
- Mitigation Measure BR-4: Schedule activities during the dormant season for Yadon's piperia and minimize disturbance in occupied habitat.
- Mitigation Measure BR-5: Avoid impacts to nesting birds.
- Mitigation Measure BR-6: Avoid impacts to California condors.

Table ES-1 summarizes the environmental consequences of the proposed action and the no-action alternative based on the analysis presented in Chapter 3.0 of the EA, "Affected Environment and Environmental Consequences." Six mitigation measures were identified as being necessary to reduce adverse impacts on biological resources, as listed above.

**Table ES-1. Summary of Environmental Consequences**

<i>Resource Topic</i>	<i>Proposed Action</i>	<i>No-Action</i>
Air Quality	<ul style="list-style-type: none"> <li>▪ Minimal emissions from restoration activities, but no effect on local or regional air quality conditions.</li> <li>▪ No operational emissions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ No change in air quality from existing setting.</li> </ul>
Biological Resources	<ul style="list-style-type: none"> <li>▪ No impacts to known populations of Yadon’s piperia or other special-status species, but potential trampling or disturbance of undocumented plants.</li> <li>▪ No anticipated impacts to nesting birds.</li> <li>▪ Potential impacts to several young Monterey pines.</li> <li>▪ Benefit to plants and wildlife from restored Monterey pine habitat.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Similar biological conditions as existing setting with continued erosion affecting potential Yadon’s piperia habitat.</li> <li>▪ Low quality Monterey pine habitat in Areas 1 and 2.</li> <li>▪ Continued erosion would likely destabilize many young and mature Monterey pines.</li> </ul>
Cultural Resources	<ul style="list-style-type: none"> <li>▪ No impacts to historic properties.</li> </ul>	<ul style="list-style-type: none"> <li>▪ No potential for impacts on cultural resources.</li> </ul>
Soil Resources	<ul style="list-style-type: none"> <li>▪ Temporary soil disturbance during repairs.</li> <li>▪ Long-term benefit from restoration activities.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ongoing potential for soil erosion from major runoff.</li> </ul>
Utilities and Recreation Facilities	<ul style="list-style-type: none"> <li>▪ Long-term protection for water pipeline, trail, and roads.</li> <li>▪ Reduced safety concerns with restored gullies.</li> </ul>	<ul style="list-style-type: none"> <li>▪ A currently exposed pipeline would still be exposed.</li> <li>▪ Erosion could affect a nearby trail.</li> <li>▪ Continued safety concerns for hikers.</li> </ul>
Water Resources	<ul style="list-style-type: none"> <li>▪ No impacts to natural drainages.</li> <li>▪ Long-term benefit to storm drains from maintenance and restoration activities.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Major runoff could cause more erosion.</li> </ul>
Visual Resources	<ul style="list-style-type: none"> <li>▪ Improved visual character after restoration.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Gullies and other disturbed areas degrade visual quality.</li> </ul>



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## **ACRONYMS AND ABBREVIATIONS**

APCD	Air Pollution Control District
Cal-Am	California American Water
City	City of Monterey
CFR	Code of Federal Regulations
EA	Environmental Assessment
NEPA	National Environmental Policy Act
PM10	inhalable particulate matter
POM	Presidio of Monterey
PVC	polyvinyl chloride
U.S. Army	United States Army
USAG	United States Army Garrison
USC	United States Code
USFWS	U.S. Fish and Wildlife Service



# **CHAPTER 1. PURPOSE OF AND NEED FOR ACTION**

## **1.1 BACKGROUND**

California American Water (Cal-Am) is proposing to complete pipe repair and restoration activities (referred to in this document as the Huckleberry Hill Waterline Restoration Project or the proposed action) in two areas affected by a water leak within and just outside the Huckleberry Hill Nature Preserve on the Presidio of Monterey (POM) in Monterey, California (see Figures 1 and 2 at the end of this chapter). The proposed activities require authorization by the U.S. Army Garrison (USAG) POM (the lead agency) because they would be implemented on U.S. Army lands. The repair and restoration designs also require review and approval by the City of Monterey (City) because some of the land is leased and managed by the City. Cal-Am has prepared this Environmental Assessment (EA) for USAG POM to evaluate the environmental consequences of implementing the proposed action and to comply with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code §4321 et seq.), the Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations, Parts 1500–1508), and the Environmental Analysis of Army Actions, 32 Code of Federal Regulations (CFR) 651 (March 2002).

In October 2012, a Cal-Am water distribution line near an above-ground water storage tank ruptured, causing the release of a substantial quantity of water. The water flowed downslope around a clogged culvert and along Water Tank Road, just downslope of the tank and distribution line. The flow left the dirt road in a northeasterly direction along the path of a buried polyvinyl chloride (PVC) water conveyance pipeline owned by Cal-Am. The catastrophic release of water created a sizeable gully and exposed approximately 30 feet of the pipeline. The gully is about 200 feet long and 6 feet wide, with depths from a few inches to 5 feet. Two smaller gullies were also created further downslope before the flow entered a drainage ditch and storm drain on restricted POM property. The erosion along the buried pipeline was greatest because of the presence of easily erodible backfill soils. Areas with previously undisturbed conditions and native vegetation were less affected.

## **1.2 PURPOSE AND NEED**

Cal-Am is required to restore disturbed areas associated with its facilities to pre-disturbance conditions as part of its easement contract with USAG POM. The purpose of the proposed action is to repair the damaged pipeline and restore the affected areas to pre-erosion conditions. The damaged pipeline has been offline since October 2012, and Cal-Am needs to complete the repairs to allow the pipeline to function and provide necessary redundancy in its water distribution system. The proposed action is also needed to protect the pipeline and other facilities in the general area from future water damage and erosion should another pipeline or tank leak. Further erosion in the affected areas could damage populations of Yadon's piperia, an endangered plant species; disturb native Monterey pine

habitat; and damage Cal-Am facilities and nearby roads and trails, as well as create hazardous conditions for people using the nearby roads and trails.

### **1.3 SCOPE OF THE DOCUMENT**

This EA presents a project-specific analysis of the proposed repair and restoration activities and includes a more general analysis of future maintenance activities relating to Cal-Am facilities at the Huckleberry Hill Nature Preserve. Specific details on the future maintenance activities are not currently available, and subsequent NEPA compliance may be necessary prior to implementation of the activities once the details are available.

Much of the description of the affected environment in this document was incorporated from previously prepared environmental documents and studies for projects at the POM. This information was supplemented with information from additional research and a botanical survey of the project area to document current conditions. One of the main sources of information is the Final Environmental Impact Statement for the POM Real Property Master Plan, which was completed in February 2013 and is available on-line ([http://www.monterey.army.mil/DPW/env\\_assessment.html](http://www.monterey.army.mil/DPW/env_assessment.html)). In April 2013, Rana Creek Environmental Planning conducted a botanical survey and a focused survey for Yadon's piperia (*Piperia yadonii*), an endangered species listed under the Endangered Species Act, and other special-status plants in the project area and prepared a Botanical Survey Report to support a Habitat Restoration Plan and this EA.

### **1.4 AGENCY AND PUBLIC PARTICIPATION**

NEPA encourages lead agencies responsible for preparation of an EA to coordinate with the public and other governmental agencies and to solicit input on their proposed action early in the decision-making process. This section discusses agency, tribal, and public review of the Draft EA and consultations on the proposed action.

#### **1.4.1 Public/Agency Review of Draft EA**

This Draft EA has been made available to the public, tribes, and other agencies to provide comments on the proposed action, analyses, or other aspects of the document. A list of individuals and organizations that were mailed a copy of the Draft EA and how to comment is provided in Appendix A. A copy of this Draft EA is also available for review at the Monterey Public Library, the Pacific Grove Library, the USAG POM office in Seaside, and online at: [http://www.monterey.army.mil/dpw/env\\_assessment.html](http://www.monterey.army.mil/dpw/env_assessment.html). Copies of the Draft EA were submitted to the State Clearinghouse for distribution to State agencies and filing with the State.

A Notice of Availability of the Draft EA was published in the *Monterey Herald*, the Monterey area newspaper, to inform the public about the availability of the EA and how and when to provide comments. The 30-day comment period begins on August 21, 2013 and extends through September 19, 2013. Comments on the document should be sent to the Directorate of Public Works, Environmental Division at P.O. Box 5004, Monterey, California 93944-5004, Attn: Lenore R. Grover-Bullington, or via electronic mail to [Lenore.r.grover-bullington.civ@mail.mil](mailto:Lenore.r.grover-bullington.civ@mail.mil), or via facsimile to 831-242-7019. This coordination fulfills the requirements of the *Intergovernmental Cooperation Act of 1968* (42 USC 4231(a)) and the *Intergovernmental Review of Federal Programs* (EO 12372), which require federal agencies to cooperate with and consider federal, state, and local interests in implementing a proposal.

#### **1.4.2 Endangered Species Act Compliance**

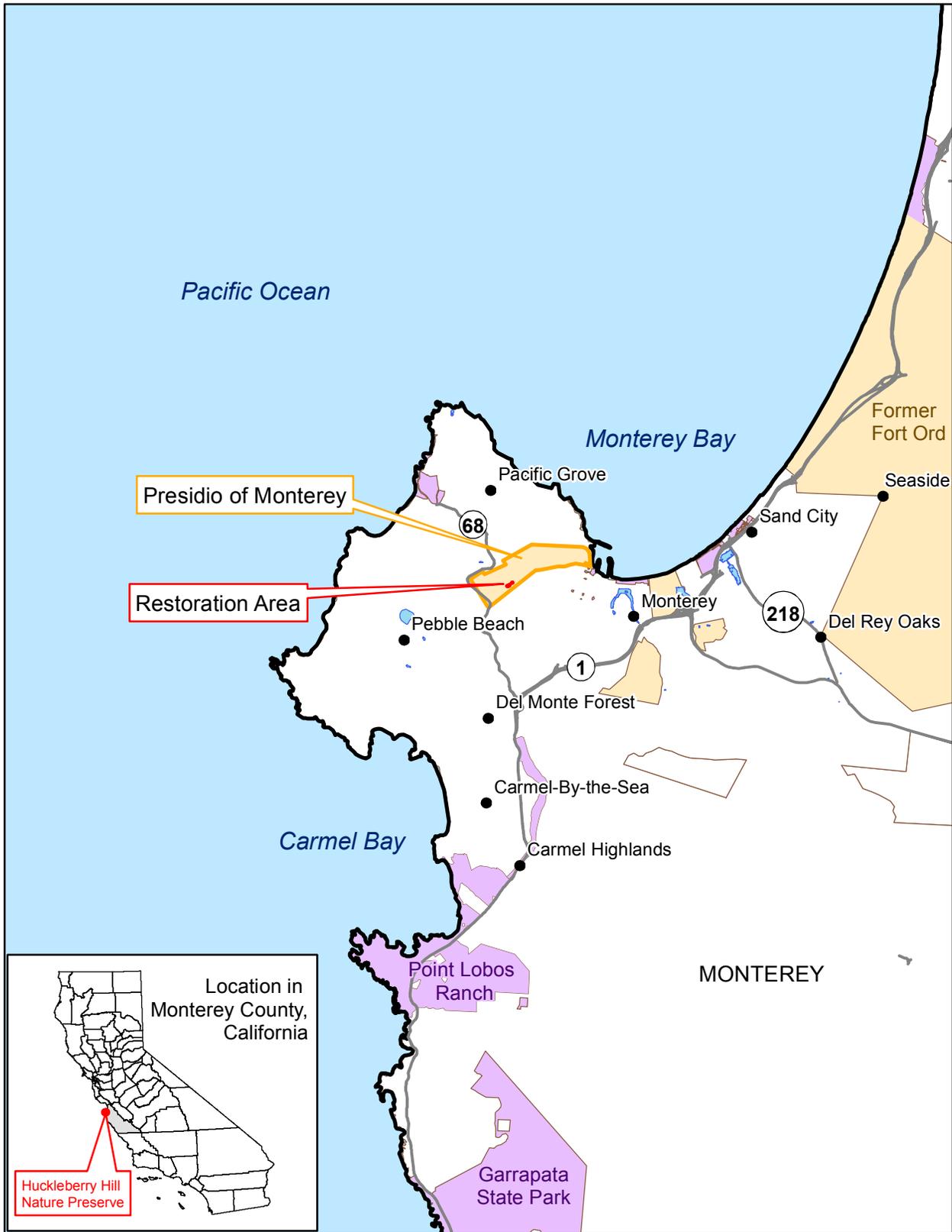
A request for an official list of candidate, proposed, threatened, and endangered species was submitted to the U.S. Fish and Wildlife Service (USFWS) Ventura Field Office via the Information, Planning, and Conservation System (IPaC website, <http://ecos.fws.gov/ipac/>) on June 11, 2013. The IPaC website includes a form to briefly describe the proposed action and identify the area of effects, which are used by the system and USFWS to determine which species may be affected by the proposed action. A preliminary list was generated by the website, with a note indicating that the Ventura Field Office would contact the representative from USAG POM and provide an official list upon further review of the proposed action. The list is included in Appendix A. The USAG POM will submit a copy of the Draft EA with a letter requesting informal consultation and concurrence with the conclusions made in this EA. The EA describes the anticipated impacts to federally listed species and identifies mitigation measures to avoid impacts to Yadon's piperia and California condor and restore Monterey pines as part of the proposed restoration plan. These measures were incorporated from the Biological Opinion for the POM Real Property Master Plan (8-8-13-F-29), dated July 18, 2013 (pending acceptance by the U.S. Army).

#### **1.4.3 National Historic Preservation Act**

Section 106 of the National Historic Preservation Act requires federal agencies to evaluate the effects of federal undertakings on historical, archaeological, and cultural resources. An archaeological survey of the Huckleberry Hill Nature Preserve was conducted in 2011; the survey did not identify any cultural resources where the proposed action would be implemented (Pacific Legacy 2012). No historic properties would be affected by the proposed action. Consultation under Section 106 is not required.

Inadvertent discoveries of cultural resources would require implementation of procedures set forth in the Integrated Cultural Resource Management Plan for the POM (USAG POM 2004a) and Army

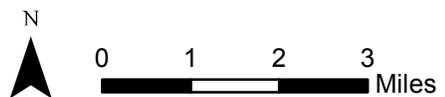
Regulation (AR 200-1), which includes consultation procedures and planning requirements pursuant to Section 106 of the National Historic Preservation Act (16 USC 470f; 36 CFR Part 800). An inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony would require implementation of the procedures set forth for cultural resources and procedures set forth in Section 3 and Section 5 of the Native American Graves Protection and Repatriation Act (25 USC. 3001 et seq.; 43 CFR 10).

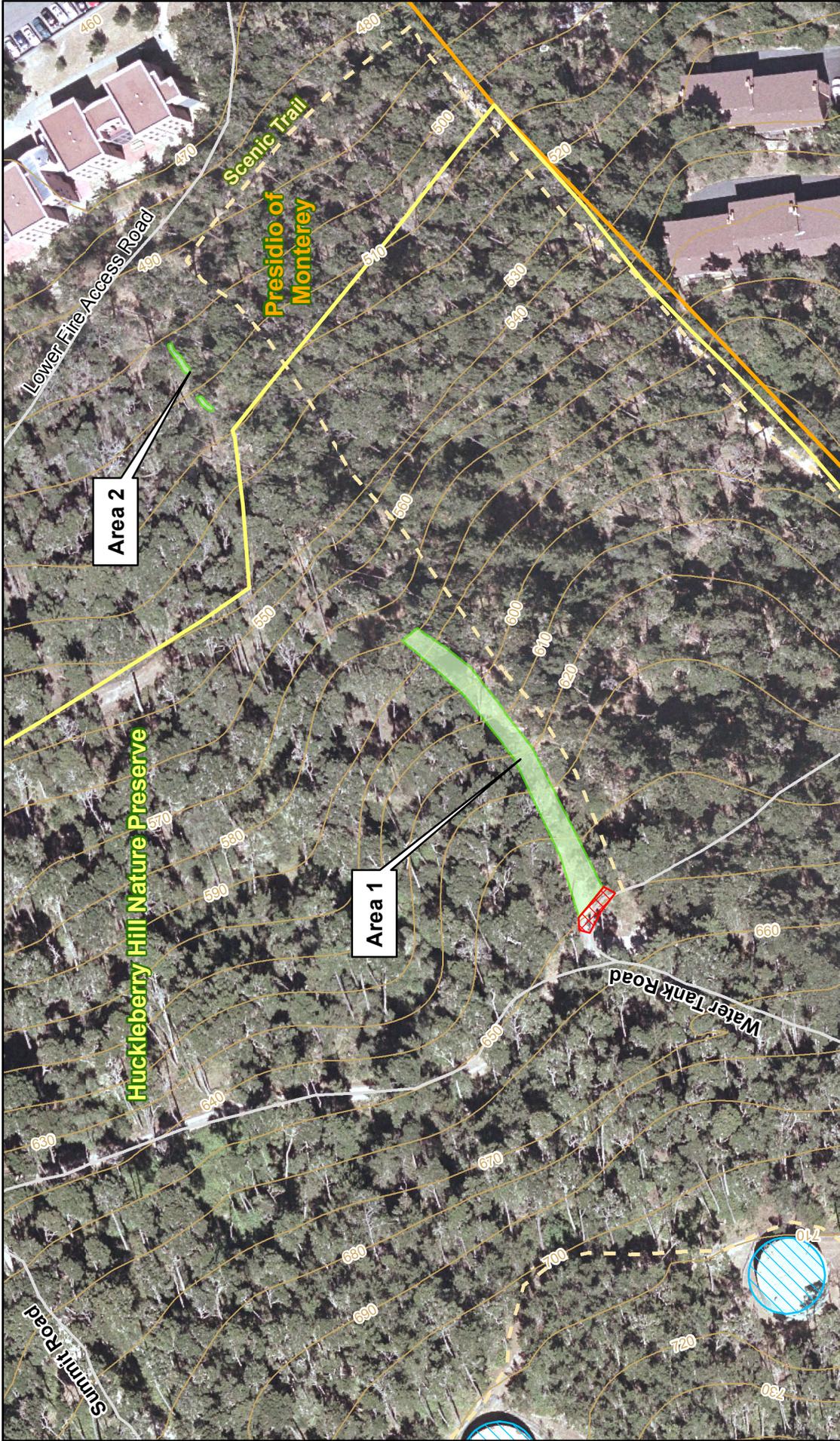


**Legend**

- Presidio of Monterey *Ownership/Management*
- Restoration Area
- County
- Lake
- City/Town
- Major Road
- Other Ownership/Management
- Department of Defense
- State

**Figure 1.  
Vicinity Map**





**Huckleberry Hill Watershed Restoration Project**

**Figure 2. Proposed Restoration Area**

**Legend**

- Water Tank
- Staging Area
- Restoration Area
- POM
- Road
- Trail
- Contour (10 ft)
- Huckleberry Hill Nature Preserve

**0 50 100 150 Feet**

N

Data source:  
Aerial photo from City of Monterey, 2005  
Project data digitized

North State Resources

## **CHAPTER 2. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

### **2.1 PROPOSED ACTION**

Cal-Am is proposing to implement pipeline repair and restoration activities in two areas affected by a water leak within and just outside the Huckleberry Hill Nature Preserve on the POM. The proposed action consists of repairing a damaged water supply pipeline, backfilling three gullies created by erosion associated with the water leak, and restoring the affected areas with native plants. The largest gully is located just downhill of Water Tank Road on the Nature Preserve (referred to as Area 1), and two smaller gullies are located on the POM property about 220 feet downhill and northeast of the large gully (referred to as Area 2) (see Figure 2). Area 1 encompasses approximately 4,000 square feet (0.1 acre) and is where the pipeline segment was damaged. Area 2 encompasses approximately 200 square feet (0.005 acre) and contains two eroded gullies. In addition to the repair and restoration activities, general maintenance activities would be implemented near the large gully in Area 1 to control erosion and protect the repaired pipeline and nearby trails over the long term.

#### **2.1.1 Erosion and Pipeline Repair**

The primary repair work would be implemented in Area 1. Access to this area would be from Water Tank Road. A staging area would be established in a previously disturbed area on the existing dirt road near the southwestern (upper) end of Area 1.

Activities in Area 1 would consist of the following:

- Excavate in the gully to expose the existing PVC pipe and stockpile spoils for backfill;
- Remove and dispose of the existing PVC pipe (approximately 100 linear feet);
- Install a new pipe segment (approximately 100 linear feet);
- Backfill the gully with imported dune sand from a permitted source in the Monterey area to within 1 foot of the finish grade using a bobcat loader;
- Install two cement cut-off walls along the uphill end of Area 1 to control and divert drainage away from the area; and
- Backfill the top 1 foot of the gully with stockpiled topsoil from the gully, or with weed and pathogen-free imported topsoil if additional topsoil is needed, using a bobcat loader to match pre-erosion contours.

In Area 2, two gullies would be filled in to match pre-erosion contours. Access to this area would be from the lower fire access road, then by foot. Protective fencing around known Yadon's piperia plant populations would be installed prior to any activities in Area 2.

Activities in Area 2 would consist of the following:

- Install a cut-off wall in the larger gully using downed Monterey pine logs from the area or using 2-inch by 12-inch wooden planks keyed into the sides of the gully;
- Transport fill material (dune sand, stockpiled topsoil from Area 1, and weed and pathogen-free imported topsoil if additional topsoil is needed) on a flatbed truck to the lower fire access road, then by foot using wheelbarrows to the gullies; and
- Place and compact the fill material in the gullies by hand and level to the existing grade of adjacent areas.

In addition to the repairs in Areas 1 and 2, longer term protection of the area from future pipe leaks or water flow would also be necessary and would be the responsibility of Cal-Am. Protection measures would include general maintenance of existing culverts; installation of temporary devices to control drainage; and implementation of a longer term solution, such as installation of straw waddles or logs, to protect a nearby hiking trail. Installation of erosion control devices would require minimal, if any, excavation. Specific details on these protection measures will be refined by Cal-Am in coordination with the USAG POM and the City.

The erosion and pipeline repairs are expected to begin in late summer/early fall 2013 in Area 1, preferably in time to complete the repairs by the end of October, and in fall/early winter 2013 in Area 2. The Area 1 repairs are expected to take about 3 weeks. The Area 2 repairs would be completed as part of the restoration activities.

### **2.1.2 Restoration Plan**

The proposed Habitat Restoration Plan, prepared by Rana Creek Environmental Planning, is included as Appendix B. The restoration activities would generally consist of the following:

- Collect and propagate site-specific native plants from the Huckleberry Hill Nature Preserve for site restoration;
- Install site-specific native plants, browse protection (e.g., mesh fence around restored area), temporary erosion control measures (e.g., weed-free rice straw and straw waddles), and above-ground irrigation supply lines, which would connect to an existing hydrant on Summit Road or a pickup truck with a 300-gallon tank on Water Tank Road;
- Maintain restoration plantings for 1 year and manually remove weeds; and

- Remove browse protection, temporary erosion control measures, and irrigation lines after the 1-year establishment period.

The restoration activities would require about 1 year, with initial site preparation in fall, plantings in mid-winter, and other minor work throughout the year.

### **2.1.3 Construction Measures**

The designs of the repair and restoration activities have incorporated feasible measures to minimize disturbance to native habitat during the activities. Most of the activities would be conducted by hand or using small tools, with equipment operation (i.e., a bobcat loader) limited to open and disturbed areas away from native trees and special-status plant populations. Excavation activities would be limited to the previously eroded gullies.

The use of temporary erosion control devices would help minimize the potential for further erosion prior to the establishment of the native plants. Populations of Yadon's piperia in the vicinity of Areas 1 and 2 and the access routes would be completely avoided during repair and restoration activities by the installation of temporary snow fencing and signs. Temporary protective measures would remain in place throughout the repair and restoration activities, as well as the 1-year establishment period for the restoration plantings.

## **2.2 NO-ACTION ALTERNATIVE**

Under the no-action alternative, the repair and restoration activities would not be implemented, and the exposed and damaged pipeline would remain in its current inoperable state. Cal-Am would need to continue using alternative methods to supply water to areas that had been serviced by the pipeline. The gullies would continue to be exposed and would not be restored with native vegetation. Without the proposed repairs and restoration plan, Cal-Am would not be in compliance with its easement contract with the USAG POM, which requires all disturbed areas to be restored to pre-disturbance conditions. The affected areas could also be subject to ongoing erosion, which could further damage the pipeline or other buried facilities and potentially disturb special-status plant populations and associated native pine habitat.

## **2.3 ALTERNATIVES DEVELOPMENT**

Cal-Am considered alternative methods of construction and materials when designing the project, but no alternate locations were considered because the activities must be implemented where the gullies were created by the water leak. The use of construction equipment for all of the restoration work was considered, but was determined to be infeasible because of the need to protect special-status plants and native pine habitat.

Alternative sources for fill material to backfill the gullies were also evaluated. Native fill from the vicinity was determined to be inadequate as the only source because the area does not contain a sufficient amount of native soil to be used to completely backfill the gullies, which is due to the displacement of soil during the rush of water from the waterline break. Imported sources of soil to completely backfill the gullies were also considered, but the soil would need to be certified weed-free to prevent the introduction of non-native seeds into the Nature Preserve and endangered species habitat, which makes the soil more costly and difficult to obtain.

## **CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

### **3.1 ANALYSIS APPROACH**

This chapter describes the current environmental setting of the proposed restoration area and analyzes the environmental consequences of implementing the proposed action or no-action alternative. The description of the environmental setting or affected environment is based on agency planning documents, technical reports, a botanical survey of the proposed restoration area (Rana Creek Environmental Planning 2013), and communications with agency personnel. The Final Environmental Impact Statement for the POM Real Property Master Plan (U.S. Army Corps of Engineers 2013) served as a key reference for describing the setting.

The analysis addresses the proposed repairs and restoration activities at a project-specific level and provides a more general or programmatic analysis of general maintenance activities to control erosion over the long term. Additional NEPA compliance may be necessary for these general maintenance activities once specific design details are available.

The analysis in this EA focuses on resources that could be affected by the proposed action. Several resource topics are not evaluated in detail because they are either not present in or near the proposed restoration area or would not be affected (see Section 3.2 for list of topics dismissed). Resources evaluated in detail include:

- Air Quality
- Biological Resources
- Cultural Resources
- Soil Resources
- Surface Water Resources
- Utilities and Recreation Facilities
- Visual Resources

### **3.2 RESOURCE AREAS EXCLUDED FROM FURTHER ANALYSIS**

After an examination of all resource areas, it was determined that the proposed action would have no or insignificant effects on agricultural resources, climate, environmental justice, geology, groundwater, hazards and hazardous materials, land use, noise, population and housing, public services, socioeconomics, transportation, and visual resources. These topics are not discussed further in this document, and the reason for eliminating them from further consideration is in Table 1.

**Table 1. Resource Areas Excluded from Further Analysis**

<i>Resource Area</i>	<i>Reason for Dismissal</i>
Agricultural Resources	No agricultural lands or activities are present in Areas 1 and 2.
Climate	The proposed action would not affect climate based on the nature and extent of the activities.
Environmental Justice	No communities or disadvantaged people would be affected.
Geology	No unique geologic formations are present in Areas 1 and 2. Several known faults are in the vicinity, but seismic activity is not expected to affect the restoration activities.
Groundwater	The proposed action would not affect the local groundwater table based on the nature and extent of the activities.
Hazards and Hazardous Materials	The proposed action would not involve the use of hazardous materials or expose people or structures to hazards.
Land Use	The land use of Areas 1 and 2 is open space and would not be affected by the proposed action.
Noise	No communities or uses are present near Areas 1 and 2 that could be sensitive to noise, and the activities would generate minimal noise.
Population and Housing	No communities or houses are present near Areas 1 and 2.
Public Services	The proposed action would not affect public services based on the nature and extent of the activities.
Socioeconomics	No communities are present near Areas 1 and 2, and no economic effects are anticipated based on the nature and extent of the activities.
Transportation	Limited access is available to Areas 1 and 2, and traffic levels would not be affected in the surrounding area.

### **3.3 AIR QUALITY**

#### **3.3.1 Affected Environment**

The city of Monterey is in the North Central Coast Air Basin, and air quality is managed by the Monterey Bay Unified Air Pollution Control District (APCD). The State established California ambient air quality standards for 10 criteria pollutants, and the California Air Resources Board is tasked with assigning area designations based on available air quality data and the California standards. The California standards are more stringent than the national ambient air quality standards established by the U.S. Environmental Protection Agency, which also classifies areas as attainment, nonattainment, or unclassified based on the national standards. The air basin is designated attainment or unclassified for all national standards and most California standards, but is designated nonattainment for the State standards of ozone and inhalable particulate matter (PM10) (Monterey Bay Unified APCD 2013b).

Air pollution problems in the air basin are influenced by sources in the San Francisco Bay Area to the north and the San Joaquin Valley to the east. The San Francisco Bay Area, in particular, can have an overwhelming contribution to air quality in the North Central Coast Air Basin because emissions transported from the Bay Area have caused exceedances of State standards at monitoring stations in the air basin (Monterey Bay Unified APCD 2008). Although exceedances of State standards for ozone and PM10 were reported across the air basin between 2009–2011, no exceedances were reported at the Salinas monitoring station, which is the closest and most representative station for air quality in the city of Monterey (Monterey Bay Unified APCD 2013a). However, the expected peak day concentration of PM10 at Salinas was estimated to exceed the State standard.

Few emission sources are present at the Huckleberry Hill Nature Preserve based on its predominant uses of recreation and open space. Mobile source emissions from vehicles on nearby roads and other emissions from the nearby developed portions of the POM and city of Monterey are the primary emission sources in the vicinity. Recreationists at the Nature Preserve are the primary sensitive receptors in the vicinity of the proposed restoration area.

### **3.3.2 Environmental Consequences**

#### ***No-Action Alternative***

Under the no-action alternative, no restoration activities would be implemented, and no air quality impacts would occur. Exposed soils in the gullies and adjacent areas could be disturbed by wind, resulting in fugitive dust in the air, but the dust would dissipate in the immediate vicinity of the area and would not be expected to affect local or regional air quality.

#### ***Proposed Action***

The proposed restoration activities would generate minimal emissions from temporary equipment and vehicle use (bobcat, worker trucks, and haul trucks to the area) and periodic dust during excavations and filling of gullies. Construction equipment, haul trucks, and worker vehicles would emit carbon monoxide, nitrogen and sulfur oxides, and/or particulate matter. Bobcat use would be limited to no more than 3 weeks in Area 1, and emissions would be expected to dissipate within the immediate vicinity of Area 1. Vehicle and truck emissions would be more widespread, but they would also be limited to the initial 3 weeks for Area 1 repairs and periodically over a period of about 1 year for Area 2 repairs and overall restoration activities. Very few sensitive receptors (recreationists) would be exposed to emissions during the restoration activities. Emissions generated during the restoration activities would not be expected to affect air quality in the Monterey area or North Central Coast Air Basin based on the nature of the emissions and relatively good air quality of the region and would not contribute to the periodic violations of ozone and inhalable particulate matter (State standards). No operational emissions would be generated, and the restored native plants would help to improve air quality at the Nature Preserve.

Maintenance of culverts and installation of temporary and permanent erosion control devices would also generate periodic emissions, but the emissions would be minimal and limited to the localized area around the activity. These activities, although longer term, would not generate emissions that would affect local or regional air quality.

### **3.3.3 Mitigation Measures**

None necessary.

## **3.4 BIOLOGICAL RESOURCES**

### **3.4.1 Affected Environment**

#### *Vegetation*

The dominant vegetation community at and adjacent to the Huckleberry Hill Nature Preserve is Monterey pine (*Pinus radiata*) forest with a shrub understory (U.S. Army Corps of Engineers 2013). This community is dominated by Monterey pine in the overstory with scattered coast live oaks (*Quercus agrifolia*). The understory primarily consists of shaggy-barked manzanita (*Arctostaphylos tomentosa*), California huckleberry (*Vaccinium ovatum*), sticky monkeyflower (*Mimulus aurantiacus*), poison oak (*Toxicodendron diversilobum*), and California coffeeberry (*Rhamnus californica*). Common herbaceous species include Douglas' iris (*Iris douglasii*), small-leaved lomatium (*Lomatium parvifolium*), Pacific peavine (*Lathyrus vestitus*), Pacific sanicle (*Sanicula crassicaulis*), and Monterey sedge (*Carex hartfordii*). The non-native invasive French broom (*Genista monspessulana*) is found along disturbed edges of dirt roads and trails. No riparian or wetland vegetation communities are present in or near the proposed restoration area.

Sensitive plants found in the Monterey pine community include Monterey pine (California Rare Plant Rank 1B.1), Hooker's manzanita (*Arctostaphylos hookeri* ssp. *hookeri*, California Rare Plant Rank 1B.2), Yadon's piperia (federally listed as endangered, California Rare Plant Rank 1B.1), Gowen cypress (*Hesperocyparis goveniana*, federally listed as threatened, California Rare Plant Rank 1B.2), pine rose (*Rosa pinetorum*, California Rare Plant Rank 1B.2), and Hickman's cinquefoil (*Potentilla hickmanii*, federally listed as endangered, California Rare Plant Rank 1B.1) (Rana Creek Environmental Planning 2013). Yadon's piperia is the only federally listed plant known to occur at the POM and has been documented at and in the vicinity of the Huckleberry Hill Nature Preserve. Designated critical habitat for Yadon's piperia does not overlap the proposed restoration area.

A botanical survey for sensitive plants was conducted in March 2013 in and around the proposed restoration area (Rana Creek Environmental Planning 2013). Rana Creek identified 36 individuals of Yadon's piperia in the vicinity of the proposed restoration area, with none identified in Areas 1 or 2; one Hooker's manzanita shrub at the northeastern edge of Area 1 (see Figure 2 for Area 1 location);

and Monterey pine trees within and in the vicinity of the proposed restoration area. Other federally listed plants identified by the USFWS as potentially occurring in the Monterey area were not documented in the proposed restoration area during the surveys and are not expected to occur (see Appendix A for USFWS list).

### ***Wildlife***

The Monterey pine forest at and adjacent to the Huckleberry Hill Nature Preserve provides nesting, foraging, and resting habitat for many native mammalian, avian, and amphibian species, such as black-tailed hare (*Lepus californicus*), gray fox (*Urocyon cinereoargenteus*), black-tailed deer (*Odocoileus hemionus columbianus*), California quail (*Callipepla californica*), red-tailed hawk (*Buteo jamaicensis*), acorn woodpecker (*Melanerpes formicivorus*), arboreal salamander (*Aneides lugubris*), and California slender salamander (*Batrachoseps attenuatus*) (U.S. Army Corps of Engineers 2013). Sensitive wildlife species that have been documented or may occur at the POM include California condor (*Gymnogyps californianus*, federally and state listed as endangered), sharp-shinned hawk (*Accipiter striatus*, California species of special concern), olive-sided flycatcher (*Contopus cooperi*, California species of special concern), loggerhead shrike (*Lanius ludovicianus*, California species of special concern), American badger (*Taxidea taxus*, California species of special concern), hoary bat (*Lasiurus cinereus*), and Monarch butterfly (*Danaus plexippus*). Only the condor is federally listed, and it has a low potential to fly over the area or roost in tall trees in the vicinity. Numerous migratory birds use the various habitats at the POM for nesting, foraging, and resting and could be found in the Monterey pine forest in the vicinity of the proposed restoration area. These birds are protected under the Migratory Bird Treaty Act. The general breeding period for birds in the region is from February 1 through August 31.

## **3.4.2 Environmental Consequences**

### ***No-Action Alternative***

Under the no-action alternative, no restoration activities would be implemented, and endangered plant populations would have no potential to be disturbed by such activities. Wildlife in the immediate area would also not be exposed to temporary disturbances, although hazardous conditions associated with the exposed gullies would remain. However, endangered plant populations and native pine trees could be exposed to damage from future erosion or water leaks if the area is not effectively restored. These impacts could affect the local plant populations if the plants cannot naturally regenerate or re-establish in the area. In addition, the currently disturbed areas, particularly the bottoms of the gullies, provide low-quality habitat for the Yadon's piperia because of the loss of duff and topsoil and the potential for water disturbance.

### ***Proposed Action***

The proposed repair and restoration activities would involve minimal ground disturbance and vegetation removal, but no mature, standing trees would need to be removed. Young Monterey pines

along the gullies may need to be removed or could be affected during the activities. Excavation along the gullies could dislodge young trees or damage root systems. Because of the sensitivity of Monterey pine habitat, Mitigation Measure BR-1 is necessary to ensure complete restoration of any damaged Monterey pines. The activities could also introduce non-native invasive plants into the area or cause the spread of invasive plants already present in Areas 1 and 2 by disturbing the soil and creating favorable conditions for their establishment. Implementation of Mitigation Measure BR-2 would reduce the potential for invasive plants to be introduced or spread into the areas. The overall restoration activities would benefit the Monterey pine habitat in Areas 1 and 2 by restoring the eroded gullies and re-establishing native plants.

The known populations of Yadon's piperia would be completely avoided during the restoration activities, and fencing would be placed around the known plants to protect them. Soil excavation to obtain native topsoil for the top 1 foot of backfill in the gullies and to install cut-off walls would be limited to the bottoms and sides of the gullies and is not expected to disturb or damage underground tubers of Yadon's piperia. However, individuals of Yadon's piperia that were not identified during the survey could be trampled during the activities or damaged during bobcat use. Implementation of Mitigation Measures BR-3 and BR-4 would reduce the potential for additional impacts on Yadon's piperia. No take of Yadon's piperia would occur, and no other federally listed plants would be affected.

Temporary disturbance during the repairs and restoration activities could disturb wildlife using the area, but most activities would be completed by hand and would generate minimal noise or other disturbance. The main repairs would also be completed outside the nesting season for birds, which is between February and August in the region, so no nesting birds would be affected by the repairs. Some restoration activities may be implemented during the nesting season, but the activities would result in minimal disturbance because no mechanical equipment would be used. To ensure protection of nesting birds, Mitigation Measure BR-5 would be implemented. Although no federally listed wildlife would be directly affected by the activities, California condor may fly over the area and could be disturbed if they roost nearby. Mitigation Measure BR-6 would ensure protection of any condors in the area during the activities. The restored gullies would improve the Monterey pine habitat for wildlife and eliminate the hazardous conditions associated with exposed gullies.

Maintenance of culverts and installation of temporary and permanent erosion control devices would also require small amounts of ground disturbance, but these activities would take place in or adjacent to previously disturbed areas (e.g., existing culverts, trail side) and are not expected to affect federally listed plants or wildlife. The erosion control devices would be located away from known special-status plant populations. These activities are intended to reduce the potential for longer term erosion and protect facilities and resources in the vicinity of Areas 1 and 2. As appropriate, Mitigation

Measures BR-1 through BR-6 may be implemented during erosion control activities to minimize or avoid impacts to sensitive biological resources.

### **3.4.3 Mitigation Measures**

#### **Mitigation Measure BR-1: Protect Monterey pines in and near the proposed restoration area, to the extent feasible, and replace damaged pines as part of the restoration plan.**

During repair activities, Cal-Am and its contractor will be responsible for protecting Monterey pines within the restoration area to the maximum extent feasible. If any Monterey pines are damaged, the affected pines will be replaced during restoration activities at a 2:1 ratio in accordance with the POM Integrated Natural Resources Management Plan (USAG POM 2008). Source material for Monterey pine propagation will be collected within the forest habitat at Huckleberry Hill Nature Preserve and will be from trees exhibiting no symptoms of pitch canker infection. Also, if any tree work is needed (e.g., root cutting, pruning, or tree cutting), the trees will be treated for bark beetles prior to the work using standard practices recommended by the USAG POM's International Society of Arboriculture-certified arborist and in accordance with the POM Integrated Pest Management Plan (USAG POM 2004b). Unseasoned lumber or newly cut pine trees give off a fragrance that can attract the beetles to the area. If a broad-spectrum insecticide is planned, treatment will not occur during the flowering season (May to July) for endangered Yadon's piperia, so that potential effects of pollinators are minimized. During the growing season (December to July) of the plant, a qualified biologist will flag and cover piperia individuals where necessary prior to treatment. Any pesticides and methods used will follow current USFWS-recommended strategies.

#### **Mitigation Measure BR-2: Avoid the introduction of non-native or invasive plant species.**

Prior to entering the project area, workers will inspect their clothing, shoes, all vehicles, and equipment for invasive plant seeds or plant parts. If found, compressed water or air will be used within a designated containment area to remove pathogens, invasive plant seeds, or plant parts. Any invasive plant seeds or plant parts found in the containment area will be gathered, placed in plastic bags, and taken to an appropriate disposal facility. All temporary erosion control measures and imported topsoil used in association with the project will be certified weed-free.

Restoration and revegetation of Areas 1 and 2 will be conducted using site-specific native plants. To avoid or reduce the potential introduction of harmful, non-native plant pathogens and organisms, all container stock will be free of any weeds or pathogens when installed at Areas 1 and 2.

**Mitigation Measure BR-3: Use a botanist to conduct a pre-construction botanical survey, install protective fencing around Yadon's piperia populations, flag or fence any other special-status plant species encountered, and conduct worker awareness training.**

Prior to the installation of the protective fencing, Cal-Am will be responsible for retaining a qualified biologist or botanist to conduct a survey of Areas 1 and 2 and the access routes between those areas and the existing roads to flag and document the locations of Yadon's piperia and other special-status plant species, with a focus on any individuals that were not previously identified during earlier botanical surveys. The biologist or botanist will also assist with installing the protective fencing around the identified plant populations and individuals to ensure their protection during the repair and restoration activities. A biological monitor will be employed when conducting work adjacent to occupied Yadon's piperia habitat.

In addition, the biologist or botanist will conduct a worker awareness training for all contractors prior to any repair or restoration work. The training will include how to identify Yadon's piperia and other sensitive plant and animal species known to occur in the area and provide contact information for the USAG POM biologist for coordination with the USFWS and California Department of Fish and Wildlife prior to any ground disturbance in the event that a sensitive species is encountered. The training will be conducted on-site prior to or on the first day of the work.

**Mitigation Measure BR-4: Schedule activities during the dormant season for Yadon's piperia and minimize disturbance in occupied habitat.**

To the maximum extent feasible, repair and restoration activities associated with the proposed action that must occur in occupied Yadon's piperia habitat will be scheduled to be performed in the dormant season (August to November) for Yadon's piperia. In addition, repair and restoration work occurring within occupied Yadon's piperia habitat will be focused on existing access roads and limited to a minimal area of disturbance to the extent practicable. Staging areas, spoils storage, and equipment/vehicle parking will be located in designated areas outside of occupied habitat.

**Mitigation Measure BR-5: Avoid impacts to nesting birds.**

To avoid impacts to nesting migratory birds, restoration activities requiring mechanized equipment will be timed to occur outside the breeding bird season, which is generally from February 1 through August 31. The restoration activities during the breeding bird season will be preceded by a worker awareness training (see Mitigation Measure BR-3) that includes information on ground-nesting birds.

**Mitigation Measure BR-6: Avoid impacts to California condors.**

Condors are tracked very carefully, and in the event that they occur in or near the proposed restoration area, the Army will coordinate with the USFWS to ensure that no Army activities associated with this project will adversely affect the species.

## **3.5 CULTURAL RESOURCES**

### **3.5.1 Affected Environment**

Archaeological evidence indicates that Native Americans have lived along the central coast of California for more than 10,000 years (Jones et al. 2007). The diverse vegetation communities afforded abundant resources for food, shelter, tools, and other necessities. Prior to European expeditions in the 1700s, the Monterey area was inhabited by native people known as the “Ohlone,” who were part of the Costanoan subfamily of the Utian language group. The Ohlone lived in small, autonomous tribelets and moved seasonally. They were hunter-gatherers and depended on the terrestrial and marine resources found along the coast. Key resources included acorns, pine nuts, buckeye nuts, seeds, strawberries, blackberries, sardines and other fish, shellfish, deer, antelope, rabbits, and quail.

The establishment of Spanish missions along the central coast during the 1700s substantially modified the organization of Ohlone tribelets and resulted in a rapid and dramatic decline in the population of Native people. Subsequent persecution and suppression of Ohlone cultural expressions by Spanish, Mexican, and American ruling governments also contributed to the decline of traditional Ohlone culture.

The commanding view of Monterey Bay from the POM led the governments of Spain (c. 1770s), Mexico (c. 1822), and America (c. 1846) to build military fortifications there. The Lower Presidio Historic Park is listed on the National Register of Historic Places (NRHP) because of archaeological sites that contain remnants of these fortifications as well as evidence of over 2,000 years of Ohlone occupation. The Presidio of Monterey Historic District represents the 1902-1939 American period Infantry, Calvary, and Artillery cantonment and is comprised of 76 buildings, 20 structures, 3 monuments, roads, rock walls, and cultural landscapes. The Historic District occupies roughly one-fifth of the POM and has been determined eligible for listing on the NRHP. It is managed via a Programmatic Agreement among the U.S. Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer. Directly adjacent to the POM’s southeast boundary is the City of Monterey’s “Old Town,” which is a National Historic Landmark. New structures built in the vicinity of these historic elements must be respectful of the historic context.

The Presidio of Monterey Historic District and the Lower Presidio Historic Park are located in the eastern portion of the POM, and no buildings, structures, or archaeological sites associated with either resource have been documented at the Huckleberry Hill Nature Preserve. A recent archaeological survey of the Huckleberry Hill Nature Preserve identified one historic resource: an early 1900s granite quarry site (Pacific Legacy 2012). The archaeologists were unable to determine if the quarry was directly related to early American development activities on the POM. The resource is not in or adjacent to the proposed restoration area. No cultural resources have been documented in the proposed restoration area.

### **3.5.2 Environmental Consequences**

#### ***No-Action Alternative***

Under the no-action alternative, no restoration activities would be implemented, and no cultural resources, including previously undiscovered resources, would have potential to be affected by such activities. Future erosion of the area could expose previously undiscovered resources, but the potential is considered low because the areas with greater potential for erosion have previously been disturbed and contain backfill.

#### ***Proposed Action***

Restoration activities associated with the proposed action would involve minimal excavation and would primarily consist of the placement of fill (native topsoil and sand) into existing gullies. The excavations would take place in the gullies where erosion has already disturbed the soil. No cultural resources have been identified in or near the proposed restoration areas, and the potential for previously undiscovered resources in the restoration areas is considered low based on the lack of cultural resources exposed in the gullies by the water leak and the lack of documented cultural resources during prior surveys of the area. No impacts to cultural resources, including historic properties, are expected with implementation of the proposed action.

Maintenance of culverts and installation of temporary and permanent erosion control devices would require small amounts of ground disturbance, but these activities would not affect previously documented cultural resources. The activities would take place in previously disturbed areas where no cultural resources have been documented. These activities are intended to reduce the potential for longer term erosion and protect facilities and resources in the vicinity of Areas 1 and 2.

### **3.5.3 Mitigation Measures**

None necessary.

## **3.6 SOIL RESOURCES**

### **3.6.1 Affected Environment**

The primary soil series mapped at the Huckleberry Hill Nature Preserve is the Sheridan series (U.S. Army Corps of Engineers 2013). This soil series has a moderate to very high erosion hazard and typically experiences rapid runoff. In most areas, the Sheridan soils are underlain by clay and clay loam subsoils. The soil type mapped in the proposed restoration area is Sheridan coarse sandy loam, which is derived from granitic parent material and is found on 15 to 30 percent slopes.

### **3.6.2 Environmental Consequences**

#### *No-Action Alternative*

Under the no-action alternative, no restoration activities would be implemented, so soil disturbance associated with such activities would not occur. However, soils in the gullies would continue to be exposed to wind and water erosion and could be further affected by any future water leak or major runoff, resulting in deeper or longer gullies. Without restoration of the area, the soils would not be protected from future erosion.

#### *Proposed Action*

The proposed restoration activities would involve minor soil disturbance on about 0.1 acre, primarily in the gullies and previously eroded areas. Native topsoil would be excavated from the gullies and used for the upper 1 foot of fill in the gullies to help stabilize the area and provide native topsoil for the plantings. After the repair work, the disturbed areas would be restored with native vegetation. The native topsoil and restored habitat, in addition to the cut-off walls, would protect the backfilled gullies from future erosion in the event of major runoff across the areas. Although the restoration activities would result in temporary and minimal disturbance to a small amount of soil, the overall activities would benefit the soil over the long term.

Maintenance of culverts and installation of temporary and permanent erosion control devices would require small amounts of soil disturbance. These activities are intended to reduce the potential for longer term erosion and protect facilities and resources in the vicinity of Areas 1 and 2. They would benefit soil in the area over the long term.

### **3.6.3 Mitigation Measures**

None necessary.

## **3.7 WATER RESOURCES**

### **3.7.1 Affected Environment**

Surface water at the Huckleberry Hill Nature Preserve is conveyed via intermittent drainages and storm drain facilities to Monterey Bay and the Pacific Ocean. No perennial water bodies are present at the Nature Preserve. The proposed restoration area is situated on a northeast-facing slope between elevations of approximately 500 and 700 feet above mean sea level. Surface water flows toward the northeast and enters the POM, city of Monterey, and/or city of Pacific Grove storm drain systems, which convey the flow to Monterey Bay. Monterey Bay is listed as an impaired water body because of high levels of metals and pesticides (U.S. Army Corps of Engineers 2013). Because of the erodibility of soils in the proposed restoration area, surface flows can carry high amounts of sediment into downslope storm drains.

### **3.7.2 Environmental Consequences**

#### ***No-Action Alternative***

Under the no-action alternative, no restoration activities would be implemented, and runoff in the vicinity of Areas 1 and 2 would have a potential to erode soils in the area and increase sediment in downslope storm drains. In addition, without restoration and additional maintenance activities to maintain flows through culverts, the current drainage patterns in the area could lead to impacts on other resources, such as endangered plant populations, in the event of another water leak from an upslope pipeline or tank or major precipitation event.

#### ***Proposed Action***

The proposed restoration activities would involve minimal ground disturbance on approximately 0.1 acre. No natural drainages are present in the vicinity, so the activities would not affect water quality of natural drainages. Temporary erosion control devices would be used during repairs to reduce the potential for discharge of sediment or other pollutants off-site. Most repair and restoration work would be completed by hand, which would also reduce the potential for pollutants to be discharged off-site and enter downslope storm drains. The restoration activities would improve the stability of the soils in Areas 1 and 2, which would reduce the potential for future erosion from runoff that could discharge sediment into the storm drains or other water bodies. Drainage patterns through Areas 1 and 2 would be similar to current conditions, but the installation of cut-off walls would help protect the eroded gullies and backfilled areas from major runoff.

Maintenance of culverts and the installation of temporary and permanent erosion control devices would require small amounts of ground disturbance, but these activities would not affect the water quality in natural drainages. These activities are intended to reduce the potential for longer term

erosion and protect facilities and resources in the vicinity of Areas 1 and 2. Runoff would be directed away from sensitive areas to control flows and reduce the potential for runoff-related impacts.

### **3.7.3 Mitigation Measures**

None necessary.

## **3.8 UTILITIES AND RECREATION FACILITIES**

### **3.8.1 Affected Environment**

Water supply for the POM is provided by Cal-Am (U.S. Army Corps of Engineers 2013). The water source is groundwater pumped from the Carmel Valley Groundwater Basin and the Seaside Area Subbasin. During wet months (normally November through April), more water is pumped from the Carmel Valley Groundwater Basin, whereas during dry months (May through October), most of the water comes from the Seaside Area Subbasin. Annual water usage was estimated at 147 acre-feet per year in 2010, the most recent year for which data are available, with higher usage during the summer months and lower usage during winter months.

Cal-Am maintains two water storage tanks and a series of water supply pipelines at the Huckleberry Hill Nature Preserve. One pipeline generally follows Water Tank Road, just northeast of the tanks, and was the source of the water leak in October 2012 that caused extensive erosion downslope. Another pipeline that travels northeast from Water Tank Road was exposed and damaged by the erosion. This pipeline provides redundancy in the water distribution system. Surface flow from the proposed restoration area enters the POM storm drain, which is a 30-inch reinforced concrete pipe, at the northeastern end of the Huckleberry Hill Nature Preserve (U.S. Army Corps of Engineers 2013). Several culverts are located along the dirt roads at the Nature Preserve to convey flow under the roads. These culverts can become clogged with debris and sediment and affect water flow across the roads and in downslope areas.

The Huckleberry Hill Nature Preserve is managed by the City of Monterey and serves as an 81-acre park with numerous, well established hiking trails. The trails traverse rare Monterey pine forest and provide opportunities for the public to observe wildlife and enjoy beautiful vistas of the bay and coastline. Trails in the vicinity of the proposed restoration area include a trail just northeast (downslope) of the two water tanks and a trail known as Scenic Trail that generally parallels the southern side of the pipeline exposed in the gully (see Figure 2). Pedestrian access to the Nature Preserve trails is through Veteran's Memorial Park, which is just northeast of the Nature Preserve, along Veterans Park Trail and Presidio View Trail.

### **3.8.2 Environmental Consequences**

#### ***No-Action Alternative***

Under the no-action alternative, no restoration activities would be implemented, and the exposed pipeline would not be repaired or be operable, which would continue to affect Cal-Am's ability to supply water to its customers. Downslope storm drains could be subject to increased sediment levels in the event of a future water leak or major runoff that erodes soils in and near the gullies created by the water leak. Roads and trails in the vicinity could also be damaged by such an event. Culverts under the existing roads may not be able to properly function and adequately convey flows under the roads. Hikers and other recreationists at the Nature Preserve would continue to be exposed to safety hazards associated with the exposed gullies.

#### ***Proposed Action***

The proposed restoration activities would repair the exposed pipeline and backfill the gullies to protect the pipeline over the long term. These activities would allow the pipeline to operate and provide the necessary redundancy for the water distribution system. The overall restoration of Areas 1 and 2 would also ensure that future runoff does not erode the areas and cause increased sediment to enter downslope storm drains. Some erosion would still be expected in the event of major runoff, but the restored habitat would help minimize soil erosion in the areas.

Temporary, localized disruptions to hikers near Areas 1 and 2 may occur during the repair and restoration activities, but these activities would not require closure of the nearby trails or roads or impede access to the general area. The restored gullies would enhance the quality of the environment and the recreational experience of the area and would reduce the safety hazard associated with the exposed gullies. Overall, recreational activities would be improved with the restoration activities.

Long-term maintenance of the culverts and installation of temporary and permanent erosion control devices along an adjacent trail would help control runoff and reduce the potential for water flow to damage the trail, roads, or other buried pipelines. These activities would result in an overall beneficial effect on utilities and recreation facilities in the area, as well as reduce safety hazards associated with future erosion.

### **3.8.3 Mitigation Measures**

None necessary.

## **3.9 VISUAL RESOURCES**

### **3.9.1 Affected Environment**

The Huckleberry Hill Nature Preserve encompasses approximately 81 acres of open space and is dominated by Monterey pine forests. It is a visually prominent feature of the POM and is situated on Presidio Knoll, which is a steeply sloped hill (U.S. Army Corps of Engineers 2013). Several hiking trails and dirt roads traverse the Nature Preserve. Some facilities, such as the Cal-Am water tanks, are also located at the Nature Preserve, but these facilities are masked by the surrounding forest and are generally not visible from outside the Nature Preserve. Monterey pine forest surrounds the proposed restoration area, but the large gullies degrade the visual quality of the area. The tanks, roads, and trails in the immediate vicinity of the restoration area also reduce the visual quality of the surrounding area. However, the overall visual character is consistent with that of the Nature Preserve.

### **3.9.2 Environmental Consequences**

#### ***No-Action Alternative***

Under the no-action alternative, no restoration activities would be implemented, and the existing gullies would remain and could become more eroded with runoff or a potential future water leak. The area would not be restored to pre-disturbance conditions with native pine habitat and would not be visually consistent with the surrounding area. The disturbed areas would continue to degrade the visual character of the area.

#### ***Proposed Action***

The proposed restoration activities would backfill the gullies and restore native pine forest to Areas 1 and 2. These activities would improve the visual quality of the areas and restore the visual character so that it is consistent with the overall character of the Nature Preserve.

The longer term maintenance and protection measures would also maintain the visual character by reducing the potential for another runoff event that causes extensive erosion. The maintenance and protection measures would be short term, and the protection devices would be relatively small and located along existing man-made features (e.g., trail). These structures would not detract from the overall visual quality of the area.

### **3.9.3 Mitigation Measures**

None necessary.



## **CHAPTER 4. CUMULATIVE IMPACTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

### **4.1 CUMULATIVE IMPACTS**

This section considers the cumulative impacts (40 CFR 1508.7) and concurrent actions (40 CFR 1508.25(1)) that may be implemented at the same time or in the same vicinity as the proposed action. A cumulative impact, as defined by the Council on Environmental Quality (40 CFR 1508.7), is the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

#### **4.1.1 Related Projects**

The USAG POM completed a Real Property Master Plan for the POM and Ord Military Community in 2013. The master plan identifies a number of short- and long-range development projects (U.S. Army Corps of Engineers 2013). No specific projects are identified in the Huckleberry Hill Nature Preserve because of the protections afforded the Monterey pine forests and special-status plants found there. Several projects would be implemented over the long term in the vicinity of the Nature Preserve; however, only one project—the barracks complex—was identified for implementation during 2013–2018. The barracks complex would be located to the north and northeast of the Nature Preserve, more than 0.2 mile from Area 1 and less than 0.1 mile from Area 2. No other short- or long-range projects are expected to be implemented during the same time as the proposed action.

Periodic maintenance activities at the Nature Preserve would be implemented as needed and could be implemented simultaneously with the proposed action. These activities may include minor repairs to existing facilities, minor road or trail improvements, or fuels or invasive plant treatments.

#### **4.1.2 Impact Discussion**

All of the impacts associated with the proposed action would be minimal and limited to the immediate proximity of Areas 1 and 2. None of the impacts would affect resources outside the proposed restoration areas. Few other activities, if any, would be implemented concurrently with the proposed action, and none of the other activities would affect resources in Areas 1 or 2, such as Yadon’s piperia. No cumulative impacts on resources affected by the proposed action are expected.

## **4.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

NEPA Council on Environmental Quality regulations require environmental analyses to identify “...any irreversible and irretrievable commitments of resources that would be involved in the proposal should it be implemented” (40 CFR Section 1502.16). Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the resulting effects on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy, minerals) that cannot be replaced within a reasonable timeframe. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural site).

The proposed action would not have irreversible impacts on the land because the restored area could be used for other activities in the future. The primary irretrievable impact of the proposed action is from the use of energy, labor, materials, and funds. Irretrievable impacts would result from the use of fuel and other nonrenewable resources during restoration activities. No irreversible or irretrievable commitment of natural or cultural resources would result from the restoration activities.

## **CHAPTER 5. FINDINGS AND CONCLUSIONS**

### **5.1 FINDINGS**

After an initial examination of all resource areas, it was determined that the proposed action would have no or insignificant impacts on agricultural resources, climate, environmental justice, geology, groundwater, hazards and hazardous materials, land use, noise, population and housing, public services, socioeconomics, transportation, and visual resources. Upon further analysis, it was determined that the proposed action would not have significant impacts on air quality, biological resources, cultural resources, soils, surface water resources, utilities and recreation facilities, or visual resources based on the restoration design and construction measures incorporated into the proposed action and implementation of Mitigation Measures BR-1 through BR-6.

### **5.2 CONCLUSIONS**

Based on the environmental analyses contained in this EA, it was determined that implementation of the proposed action would not have any significant direct, indirect, or cumulative impacts on the human environment. Because no significant impacts would result from implementing the proposed action, an environmental impact statement is not required and will not be prepared. These EA findings and conclusions are the basis for the Finding of No Significant Impact.



## CHAPTER 6. REFERENCES

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## APPENDIX A

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### Interagency and Public Coordination



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IN REPLY REFER TO:  
08EVEN00-2013-SLI-0365

August 12, 2013

United States Army Garrison  
Presidio of Monterey  
Attention: DPW Lorrie Madison, Natural Resources Specialist  
4463 Gigling Road  
Seaside, California 93955

Subject: Species List for the Presidio of Monterey Huckleberry Hill Nature Preserve Pipeline Repair and Restoration Project, Monterey County, California

Dear Ms. Madison:

This letter responds to your request received through the U.S. Fish and Wildlife Service's (Service) internet-based Information, Planning, and Conservation (IPaC) decision support system on July 31, 2013. The Presidio of Monterey (Presidio) requested information on federally proposed or listed threatened and endangered species, candidate species, and designated critical habitat that may be affected by the California American Water pipeline repair and erosion restoration project located at the Huckleberry Hill Nature Preserve at the Presidio, Monterey County, California.

The enclosed list of species fulfills the requirements of the Service under section 7(c) of the Endangered Species Act of 1973, as amended (Act). The Presidio, as the lead Federal agency for the project, has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project<sup>1</sup>, the Presidio has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Presidio determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a written request for formal consultation. During this review process, the Presidio may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Based on the best available information, including the information you provided through the IPaC system, scientific and technical literature, and information in our files, we have generated the enclosed species list for you to use in meeting the requirements of the Act. Newer information based

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<sup>1</sup> "Major construction project" means any major Federal action which significantly affects the quality of the human environment designed primarily to result in the building of structures such as dams, buildings, roads, pipelines, and channels. This includes Federal actions such as permits, grants, licenses, or other forms of Federal authorizations or approval which may result in construction.

on updated surveys, changes in the abundance and distribution of listed species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential presence of federally proposed, listed, or candidate species and designated critical habitat. Please note that pursuant to Federal regulation (50 CFR 402.12(e)) a species list is valid for 90 days. The Service recommends that you visit the IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Only federally listed species receive protection under the Act; however, species listed by the State of California or otherwise considered to be sensitive should be considered in the planning process in the event that they become listed or proposed for listing prior to project completion. We recommend that you also review information in the California Department of Fish and Wildlife's Natural Diversity Database. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

If you have any questions, please call Christopher Diel at (805) 644-1766, extension 305.

Sincerely,

A handwritten signature in blue ink that reads "Douglass M. Cooper" with a stylized flourish underneath.

Douglass M. Cooper  
Deputy Assistant Field Supervisor

Enclosure

**LISTED SPECIES THAT MAY OCCUR IN THE VICINITY OF THE PROPOSED  
PRESIDIO OF MONTEREY HUCKLEBERRY HILL NATURE PRESERVE PIPELINE  
REPAIR AND RESTORATION, PRESIDIO OF MONTEREY,  
MONTEREY COUNTY, CALIFORNIA**

Birds

California condor	<i>Gymnogyps californianus</i>	E
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Amphibians

California red-legged frog	<i>Rana draytonii</i>	T
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California tiger salamander	<i>Ambystoma californiense</i>	T
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Invertebrates

Smith's blue butterfly	<i>Euphilotes enoptes smithi</i>	E
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Plants

Clover lupine	<i>Lupinus tidestromii</i>	E
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Gowen cypress	<i>Cupressus goveniana</i> ssp. <i>goveniana</i>	T
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Hickman's potentilla	<i>Potentilla hickmanii</i>	E
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Monterey clover	<i>Trifolium trichocalyx</i>	E
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Monterey spineflower	<i>Chorizanthe pungens</i> var. <i>pungens</i>	T
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Yadon's piperia	<i>Piperia yadonii</i>	E, CH
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**Key:**

E - Endangered	T - Threatened	CH - Critical habitat
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APPENDIX B

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Habitat Restoration Plan



# Habitat Restoration Plan

**Huckleberry Hill Water Line Leak Restoration  
U.S. Army Garrison, Presidio of Monterey,  
Monterey, California**

Prepared for:

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&

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Prepared

By

Rana Creek



May 20, 2013

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**Table 1** – Summary of Impact & Restoration Areas

**Table 2** – Native Plant Materials List

**Table 3** – Erosion Control Seed Mix

**Table 4** – Target Weed Species

**Map 1** – Site Vicinity Map

**Map 2** – Site Plan

## 1.0 INTRODUCTION

At the request of California American Water (Cal-Am) and Travelers Insurance (Travelers), Rana Creek has prepared this Habitat Restoration Plan (Plan) for the Huckleberry Hill Water Line Leak restoration project on property owned by the U.S. Army Presidio of Monterey (POM) and leased by the City of Monterey, in Monterey, California (**Map 1**). This Plan provides a description of the materials, methods, timing, and maintenance procedures required to re-establish Monterey pine forest plant species within the affected areas of the site.

### 1.1 Background

During October 2012, a Cal-Am water distribution line near an above-ground water storage tank ruptured in an area locally known as Huckleberry Hill on POM property. A portion of the site is leased and managed by the City of Monterey. The release of water originated from the vicinity of the water storage tank, reportedly breached a clogged culvert, and flowed along an existing dirt road (Tank Road). The flow then left the dirt road and traveled in a northeasterly direction along the bath of a buried PVC water conveyance pipeline. The catastrophic release of water created a substantial gully and exposed an approximately 9-meter (30 feet) section of the buried PVC pipeline. The eroded area that was caused by the leak consists of an approximately 60 meter (200 feet) gully that ranges from a few centimeters (cm) deep to 1.5 meters (5 feet) deep and 1.8 meters (6 feet) wide. The path of the water leak extends downhill onto restricted POM property, where it eventually meets a drainage ditch and an associated storm drain. Most erosion damage caused by the leak is focused along the run of the existing PVC pipeline where backfill soils were more easily eroded. Areas where the water flow traveled over undisturbed, native vegetation suffered only minor effects from the event.

Due to the presence of Monterey pine forest and Federal endangered Yadon's piperia (*Piperia yadonii*) in the vicinity of the affected area, Rana Creek prepared a Botanical Survey report for the project, dated April 30, 2013. The report documented a botanical survey and inventory of Yadon's piperia plants at the project site performed on March 21, 2013. The survey mapped a total of 36 plants in the vegetative growth stage within the area studied. None of the plants mapped are located within or immediately adjacent to the areas of erosion that are the subject of this restoration effort.

### 1.2 Areas of Disturbance and Erosion Repair

The proposed erosion repair work addresses two areas (Area 1 and Area 2) and includes the activities listed below. As of the date of this report, pipe and erosion trench repair within Area 1 is planned for early fall 2013 and will be completed by a general engineering contractor. Repair of gullies in Area 2 and initial habitat restoration in both areas will be performed by the project habitat restoration contractor and are planned for fall/early winter 2013.

Table 1 lists the approximate square footage of intensive habitat restoration that will occur on filled gullies and immediately adjoining areas. It should be noted that although the total length of the slope running from the top of Area 1 to the base of Area 2 is

approximately 600 feet, installation of native plants will occur only in the approximately 4,200 square feet of disturbed soil where gullies have been filled. Other areas have adequate native cover and should not be disturbed.

Pipe and erosion trench repair (Area 1 – Primary area of erosion)

- Access the site via Tank Road.
- Establish a staging area on an existing dirt fire road near the upper limit of the affected area.
- Excavate to expose existing PVC pipe and stockpile spoils for backfill.
- Remove and dispose of existing PVC pipe (approximately 30 meters or 100 linear feet).
- Install new pipe segment (approximately 30 meters or 100 linear feet).
- Backfill with imported dune sand within 1 foot of finish grade using a bobcat loader.
- Install two cement cut-off walls.
- Backfill top 30 cm (12 inches) with stockpiled material and clean, weed free imported topsoil as needed using a bobcat loader.

Existing gully repair (Area 2 – minor area of existing erosion)

- Access the site via lower fire road. Travel remaining distance on foot.
- Install cutoff wall in gully using downed Monterey pine logs from the site or 2 x 12 wooden planks keyed into sides of gully
- Transport fill material (dune sand, topsoil from Area 1 work, and/or clean weed free imported soil) on flatbed truck to lower fire road. Haul fill material on foot using wheelbarrows to gully. Place and compact fill material in gullies by hand, level with existing grade.

**Table 1 – Summary of Impact & Restoration Areas**

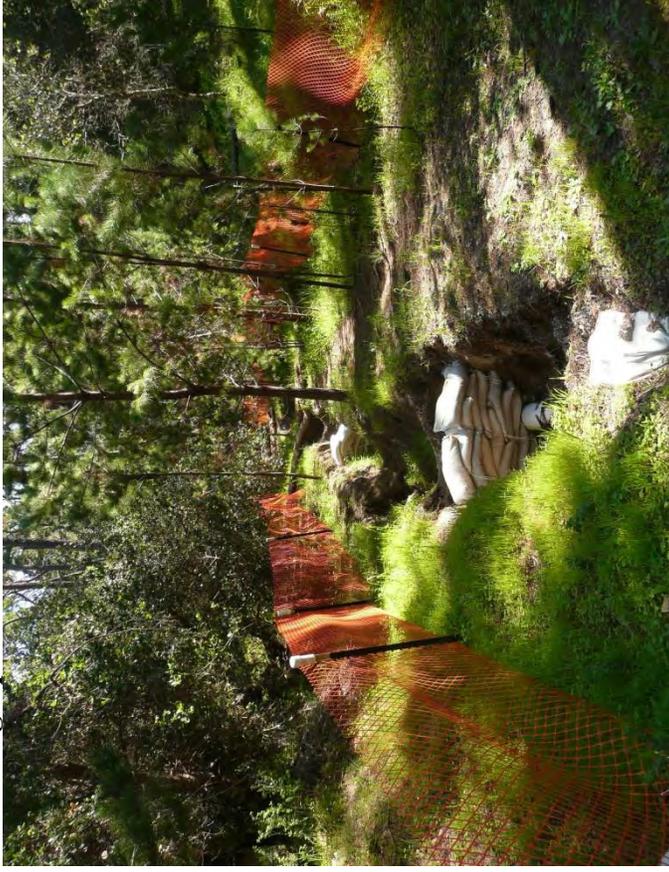
<b>Restoration Area</b>	<b>Area (sq. ft.)</b>	<b>Restoration Activity</b>	<b>Note</b>
Area 1	4,000	Backfilling trench (general engineering contractor), weed control, planting, irrigation, browse protection, temporary erosion control	Primary area of erosion from water leak. Pipe repair and filling performed by general engineering contractor
Area 2	200	Manual backfilling of gullies, weed control, planting, irrigation, browse protection.	Several gullies near base of slope.

**1.3 Protection of Yadon’s Piperia**

As described in the *Botanical Survey Report*, populations of Yadon’s piperia in the vicinity of the restoration area or access corridors will be protected from construction impacts by temporary rope fencing and signage. In addition, erosion repair and restoration activities will be performed by hand in order to minimize impacts to the

surrounding environment. Temporary protective measures will remain in place throughout the duration of initial habitat restoration as well as the 1-year establishment period. Any additional protective measures described in the forthcoming Environmental Assessment (EA) or required by resource agencies shall be followed during restoration.

**Site Photographs**



**Photo 1:** Area 1, view north. (March 21, 2013)



**Photo 2:** Area 2, view north towards lower fire road and access. Two downed Monterey pine logs may need to be cut in order to provide access and provide timber for cut-off wall in gully (March 21, 2013)

## 2.0 HABITAT RESTORATION METHODS

### 2.1 Plant Material and Propagation

The native plant species selected for restoration purposes have been chosen based on their presence at the site and/or within Monterey pine forest in the surrounding area, ease of propagation, ability to compete with weeds, and effectiveness at reducing erosion. In addition, the native plants proposed for restoration plantings are included in Table 7 of the POM Integrated Natural Resource Management Plan, “Native Species Suitable for Planting in Monterey Pine and Riparian Forest at the POM and OMC, Monterey County, California” (Presidio of Monterey, 2008). Seed and/or cuttings for the plants listed below shall be collected from Monterey pine forest habitat at Huckleberry Hill and will be propagated at a local nursery.

The ideal collection time for these species ranges from spring to early fall, depending on the species. Horticultural cultivars of these species are not acceptable for restoration purposes. Plant names, spacing, quantities, and container types are listed below in **Table 2**.

**Table 2 – Native Plant Materials List**

Botanical Name	Common Name	Container Type	Approximate Spacing (inches)	Quantity
<b>Area 1</b>				
<i>Achillea millefolium</i>	common yarrow	6" cone	24	100
<i>Bromus carinatus</i>	California brome	6" cone	24	100
<i>Elymus glaucus</i>	blue wildrye	6" cone	24	100
<i>Bromus carinatus</i>	California brome	1" x 1" plug	--	216
<i>Elymus glaucus</i>	blue wildrye	1" x 1" plug	--	216
<i>Juncus patens</i>	spreading rush	6" cone	36	45
<i>Mimulus aurantiacus</i>	sticky monkey flower	6" cone	36	45
<i>Pinus radiata</i>	Monterey pine	D-pot	72	20
<i>Rosa californica</i>	California wild rose	6" cone	36	45
<i>Rubus ursinus</i>	California blackberry	D-pot	48	25
<i>Satureja douglasii</i>	yerba buena	6" cone	48	25
<i>Stachys bullata</i>	hedge nettle	6" cone	48	25
<i>Vaccinium ovatum</i>	evergreen huckleberry	D-pot	48	25
				<b>987</b>
<b>Area 2</b>				
<i>Achillea millefolium</i>	common yarrow	6" cone	12	20

<b>Botanical Name</b>	<b>Common Name</b>	<b>Container Type</b>	<b>Approximate Spacing (inches)</b>	<b>Quantity</b>
<i>Elymus glaucus</i>	blue wildrye	1" x 1" plug	--	72
<i>Festuca rubra</i>	red fescue	1" x 1" plug	--	72
<i>Elymus glaucus</i>	blue wildrye	6" cone	12	40
<i>Festuca rubra</i>	red fescue	6" cone	12	50
<i>Fragaria vesca</i>	woodland strawberry	6" cone	24	10
<i>Rubus ursinus</i>	California blackberry	D-pot	24	10
<i>Satureja douglasii</i>	yerba buena	6" cone	24	10
				<b>284</b>
<b>Replacement Plant Material (10%)</b>				
Species TBD from above list – as needed				<b>130</b>

Note:

Plants listed in Table 7, “Native Species Suitable for Planting in Monterey Pine and Riparian Forest at the POM and OMC, Monterey County, California”

## **2.2 Site Preparation**

As described above, gullies eroded by runoff and/or the water line leak will be repaired prior to habitat restoration activities. Because very little native fill material is present on site, backfilling will utilize primarily imported fill material in both Area 1 and Area 2. Cement cutoff walls installed in the Area 1 gully by the general engineering contractor will prevent the fill material from slumping or migrating down slope should the fill material become saturated. In Area 2, which has a very gentle slope, two downed Monterey pine logs will be cut and used for a log cut-off wall in the largest of the Area 2 gullies. Like the cut-off walls in Area 1, this structure will inhibit fill from being washed out of the gully during storm events. Alternatively, 2 by 12 wooden planks could be used in place of logs for the cut-off structure.

During backfilling of the gullies, the final lifts of material will be of a suitable quality and texture for the establishment of the native plant species specified in Table 2. Any imported fill will originate from a location that is free of invasive non-native weeds. If filled areas are highly compacted, the upper six inches may be loosened using a roto-tiller or equal as needed to promote plant establishment. Clayey soils may be loosened by addition of a compost top dressing.

## **2.3 Staging of Materials**

All materials will be staged on existing fire roads, either at the top of Area 1 or the base of Area 2. No materials or equipment will be staged in the Monterey pine forest plant community.

## 2.4 Erosion Control

Disturbed soils on Area 1 slopes will require protection from erosion during the first winter following the erosion repair activities. Temporary erosion control measures shall be in place by October 15 and at a minimum shall include the following:

- Broadcasting the native seed mix listed in **Table 3** evenly across the prepared areas;
- Broadcasting a layer of clean rice straw across the disturbed slopes (approximately 2 bales);
- Straw wattles shall be placed along the contour of the slope and anchored with 12-inch wooden stakes placed at 4-foot-intervals. One wattle shall be installed for every 20 feet of slope length and each shall be keyed in to a shallow trench in order to prevent water from flowing beneath. Wooden stakes shall extend above the top of the wattle by 2 inches. Metal spikes may be substituted for wooden stakes where the soil is rocky. In addition, a straw wattle or silt fence shall protect the bottom of the slope in order to prevent sediment from washing into the areas below.

**Table 3 – Erosion Control Seed Mix**

<b>Botanical Name</b>	<b>Common Name</b>	<b>Quantity (PLS Oz)</b>
<i>Agrostis pallens</i>	leafy bentgrass	4
<i>Bromus carinatus</i>	California brome	14
<i>Elymus glaucus</i>	blue wildrye	14

Note:

PLS – pure live seed

## 2.5 Planting

Planting shall occur after several winter rain events have moistened the soil. This timeframe typically occurs during late October to early December. Plants shall be delivered to the site and installed in a random pattern. Each shrub or tree species shall receive one slow release feeder fertilizer pack (RTI Leap Start 8-4-4 or equal) placed in the bottom of the planting hole. After planting, a watering basin shall be constructed around shrubs and tree species by building the soil up into a 4-inch berm. Each plant shall be watered immediately after planting.

## 2.6 Irrigation

New restoration plantings will be established using supplemental irrigation during winter/spring periods of dry weather and during the first summer after installation. Irrigation events are anticipated to occur on a monthly basis during the summer and as needed during dry periods during the winter/spring. Plants will be watered manually

either from a water tank on a pickup truck parked on the Tank Road at the top of Area 1 or from a 500-foot-long lateral line run from an existing fire hydrant along Summit Road. As of the date of this report, it is not known if the existing fire hydrant along Summit Road is operational. If the fire hydrant along Summit Road is not operational, an alternate water source will be identified in cooperation with POM.

## 2.7 Browse Protection

Protection from browsing deer and other animals will be provided by installing a 7-foot-high mesh fence anchored with t-posts or wooden stakes around the perimeter of each restoration area. Due to the relatively small size of the restoration areas, a perimeter fence will be more cost effective and easier to maintain than individual cages.

## 2.8 Weed Control

Invasive non-native weeds will be controlled in each of the restoration areas. However, naturalized annual grasses will not be controlled. Because of its current presence on site, French broom (*Genista monspessulana*) will likely be the focus of weed control activities. Target weed species for control are those species that are listed in Table 4, or any other species rated by the California Invasive Plant Council (Cal-IPC) as “High”. Weeds will be hand pulled in restoration areas before they are allowed to set viable seed. Iceplant and any weeds with viable seeds will be bagged and transported off site for disposal.

**Table 4 – Target Weed Species**

<b>Botanical Name</b>	<b>Common Name</b>
<i>Genista monspessulana</i>	French broom
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Carpobrotus edulis</i>	iceplant
<i>Cirsium vulgare</i>	bull thistle
<i>Cortaderia jubata</i>	pampas grass
<i>Ehrharta erecta</i>	veldt grass

## 2.9 Maintenance

Maintenance inspections and activities will be performed by the restoration contractor for one year following initial restoration. Maintenance visits will assess plant survival/growth and the presence of weeds. Weeds will continue to be controlled as described above in Section 1.9. If installed plant material fails to become established in a given area, appropriately timed remedial planting in accordance with this plan shall be implemented in order to achieve the applicable performance criteria (see Section 3.9).

## 2.10 Plant Replacement

During the first year following initial restoration, dead trees and/or shrubs shall be replaced at a 1:1 ratio, unless deemed unnecessary by the restoration biologist and POM environmental staff. If certain species perform poorly, plant replacement selections should favor species with a higher success rate at the site.

### **2.11 Removal of Browse Fence and Temporary Erosion Control**

If after the 1-year establishment period, it is determined that erosion has been controlled and the restoration plantings have become established, the temporary erosion control measures and browse fencing may be removed. Temporary erosion control measures to be removed may include: sand bags, straw wattles, silt fence, construction fencing. Temporary erosion control measures and browse fence may be left in place for an additional season if deemed necessary during the final site inspection.

## **3.0 MONITORING**

The site shall be monitored by the restoration biologist periodically to track restoration success and identify any remedial action requirements relevant to weed control, irrigation, browse protection, erosion control, or plant replacement. Monitoring inspections will be limited to qualitative observations and a plant survival count.

### **3.1 Photo-documentation**

Digital photographs will be taken of the restoration areas from consistent locations and angles on a quarterly basis. Photo-documentation will provide a visual, qualitative assessment of the restoration work.

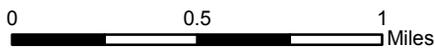
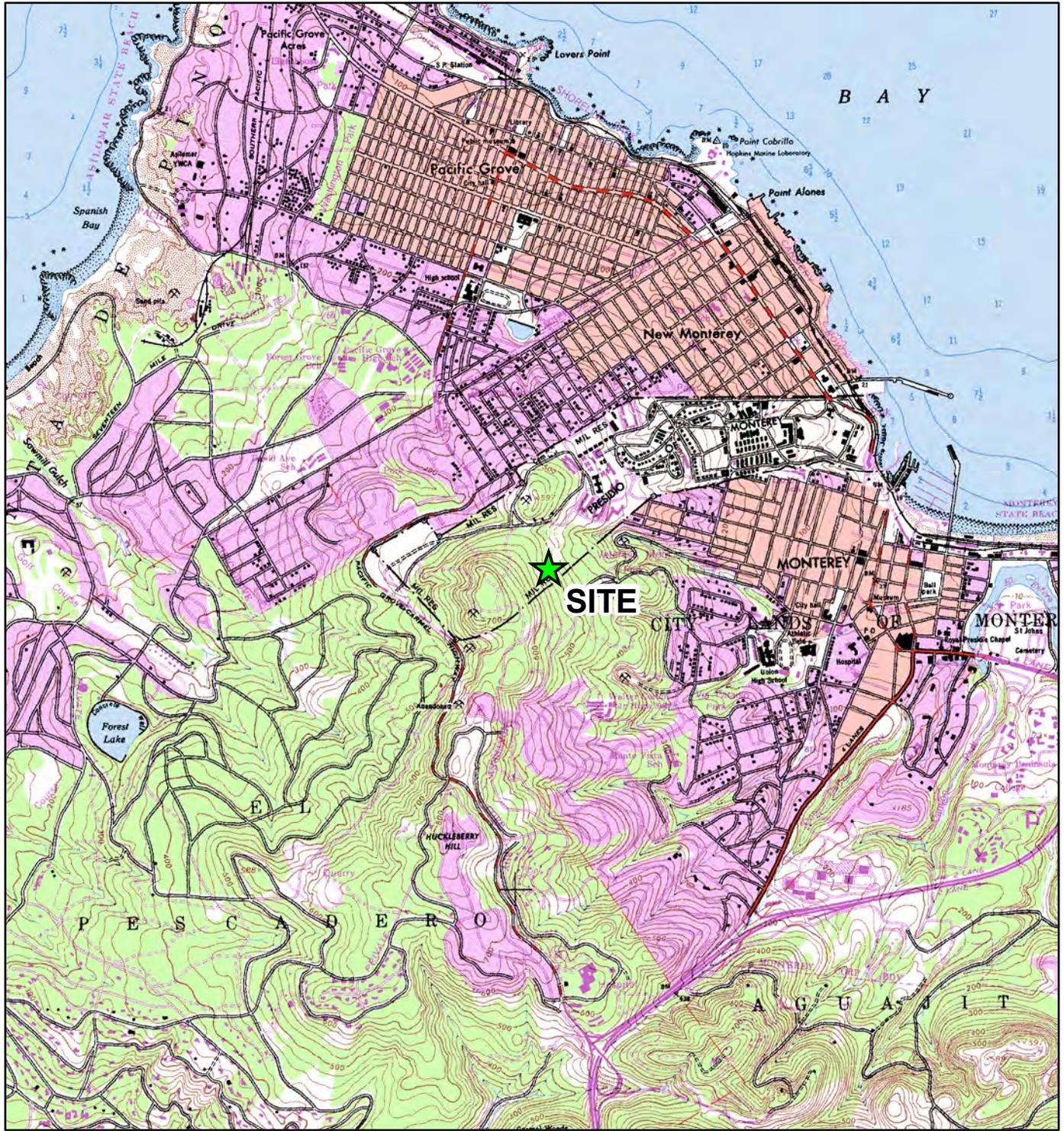
### **3.2 Reporting**

Unless required by resource agencies, reporting activities will be limited to quarterly activity reports submitted to POM. Reports will indicate maintenance activities performed, provide a list of plant replacements, if any, and include photo-documentation.

## **4.0 REFERENCES**

California Invasive Plant Council. 2006. California invasive plant inventory: Cal-IPC Publication 2006-02.

U.S. Army Presidio of Monterey. 2008. Integrated Natural Resource Management Plan (INRMP), Presidio of Monterey and Ord Military Community, Monterey County California. U.S. Army Publication POM-EMS-MP-004, 124 pp.



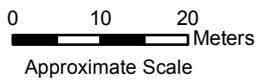
Approximate Scale

### Map 1 - Vicinity Map

Restoration Plan  
 Huckleberry Hill Restoration  
 Presidio of Monterey  
 Date: May 2013



rana creek 10 Harris Court, Suite C-5  
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**Legend**

-  *Piperia yadonii*
-  Path of water flow
-  Fence
-  Staging
-  Dirt Road
-  Erosion & Habitat Restoration
-  Contours 10ft

**Map 2 - Site Plan**

Restoration Plan  
 Huckleberry Hill Restoration  
 Presidio of Monterey  
 Date: May 2013



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