Redwood National and State Parks

1111 Second Street
Crescent City, California 95531

IN REPLY REFER TO:
D-22(REDW)

December 1, 2004

Interested Parties:

On behalf of the Redwood National and State Parks, we are pleased to present the Redwood Maintenance Facility Relocation Environmental Assessment and Initial Study/Mitigated Negative Declaration. The National Park Service (NPS) and California Department of Parks and Recreation (CDPR) propose to develop a new maintenance facility for Redwood National and State Parks at the Aubell area, which is located near Crescent City, California on state-owned land. The new maintenance facility would consolidate federal and State maintenance operations, and would be jointly operated by NPS and CDPR. The Aubell facility would replace an existing NPS maintenance facility at the Requa area, which would be restored to the extent feasible. The Aubell facility would additionally replace a CDPR maintenance complex formerly located at Jedediah Smith Redwoods State Park that was irreparably damaged by fire. This project has been analyzed pursuant to the requirements of the National Environmental Policy Act and the California Environmental Quality Act.

Public and agency participation is an important component of this planning process. Redwood National and State Parks issued a news release on May 28, 2003 and held a public scoping meeting following the release to announce NPS and CDPR's intent to prepare an environmental assessment and initial study for the project, and to solicit ideas and concerns from park visitors, staff, American Indian groups, scientists, neighbors, and government agencies. The planning team reviewed the comments received and used them to develop the alternatives and analysis in this environmental assessment and initial study/mitigated negative declaration.

Copies of the Redwood Maintenance Facility Relocation Environmental Assessment and Initial Study/Mitigated Negative Declaration will be distributed to the general public, congressional delegations, state and local elected officials, federal agencies, federally recognized tribes, organizations and local businesses, public libraries, and the news media. There will be a 30-day comment period on the environmental assessment and initial study/mitigated negative declaration. NPS and CDPR will conduct focus group meetings with specific interested groups and individuals during this time. A decision on whether to hold a general public meeting will be based on expressions of interest in the early stages of the comment period. Following the 30-day comment period, a Finding of No Significant Impact and a Notice of Determination may be prepared and if approved, project construction would likely take place from approximately spring 2007 through spring 2009.

We appreciate your interest in this planning effort and welcome your participation. Comments must be submitted in writing by January 13, 2005 and may be sent to:

Mail: Superintendents, Redwood National and State Parks
ATTN.: Redwood Maintenance Facility Relocation
1111 Second Street
Crescent City, California 95531
Fax: 707/464-1812
Email: redw_superintendent@nps.gov

The document will be available for review at http://www.nps.gov/redw/current ppm.htm. For additional information, please call Ray Cozby at 707/464-6101, extension 5030.

Sincerely,

Bill Pierce
National Park Superintendent

Marilyn Murphy
State Parks Superintendent

National Park Service
U.S. Department of the Interior

State of California - The Resources Agency
Department of Parks and Recreation

Redwood Maintenance Facility Relocation

Environmental Assessment and Initial Study/
Mitigated Negative Declaration

December 2004

Redwood

National and State Parks, California

Requa Site

Aubell Site

Redwood Maintenance Facility Relocation
Environmental Assessment and
Initial Study/Mitigated Negative Declaration

Redwood National and State Parks

Lead Agencies: National Park Service and California Department of Parks and Recreation

ABSTRACT

The National Park Service (NPS) and California Department of Parks and Recreation (CDPR) propose to develop a new maintenance facility for Redwood National and State Parks (the parks) at the Aubell area, which is located near Crescent City on CDPR-owned land. The new jointly-operated maintenance facility would consolidate federal and state park maintenance operations. The Aubell facility would replace an existing NPS maintenance facility at the Requa area, which would be restored to the extent feasible. The new facility would also replace a CDPR maintenance complex that was irreparably damaged by fire. This project has been analyzed pursuant to the requirements of the National Environmental Policy Act and the California Environmental Quality Act. The actions identified herein would be implemented consistent with the parks' *General Management Plan / General Plan*.

This environmental document analyzes the environmental impacts that would occur as a result of project implementation. The document identifies and analyzes three alternatives. Alternative 1 is the No Action Alternative and represents the status quo; the existing maintenance facilities would remain unchanged, except for normal maintenance and repair. Under both Alternative 2 (Preferred Project) and Alternative 3, the agencies propose to relocate the maintenance facility from the Requa area to the Aubell area. Under Alternative 2, the Requa area would be restored and the new maintenance facility would be located at the Elk Valley Road site at Aubell. Alternative 3 would restore the Requa area to a lesser degree than Alternative 2, and the new maintenance facility would be located at the Midway site at Aubell.

Written comments regarding this document must be submitted in writing by January 13, 2005 and should be directed to:

Mail: Superintendents, Redwood National and State Parks
ATTN.: Redwood Maintenance Facility Relocation
1111 Second Street
Crescent City, California 95531
Fax: 707/464-1812
Email: redw_superintendent@nps.gov

The document will be available for review at http://www.nps.gov/redw/current ppm.htm. For additional information, please call Ray Cozby at 707/464-6101, extension 5030.

U.S. Department of the Interior • National Park Service
California Department of Parks and Recreation

Redwood Maintenance Facility Relocation

Environmental Assessment and Initial Study/
Mitigated Negative Declaration

December 2004

PMIS 59882

Redwood

National and State Parks, California

Table of Contents

Chapter I: Purpose and Need **I-1**
Background I-1
Purpose of and Need for the Action I-3
Relationship to Other Plans I-4
Regulations and Policies I-4
Public Involvement I-4
Issues Addressed in this Document I-5
Impact Topics Selected for Detailed Analysis I-6
Impact Topics Dismissed from Detailed Analysis I-7

Chapter II: Alternatives **II-1**
Alternative 1: No Action II-1
Alternative 2: Requa Restoration/Elk Valley Road Site (Preferred Project) II-4
Alternative 3: Requa Partial Restoration/Midway Site II-13
Environmentally Preferable Alternative II-17
Actions Considered but Dismissed II-18
Mitigation Measures II-20
Comparison of Alternatives II-20

Chapter III: Affected Environment **III-1**
Introduction III-1
Geology, Geologic Hazards, and Soils III-1
Hydrology, Floodplains, and Water Quality III-3
Wetlands III-4
Vegetation III-6
Wildlife III-7
Special-status Species III-8
Air Quality III-9
Natural Soundscapes III-10
Cultural Resources III-12
Transportation III-15
Scenic Resources III-15
Visitor Experience III-16
Park Operations and Facilities III-17

Chapter IV: Environmental Consequences **IV-1**
Introduction IV-1
Methodology IV-1
Analysis of Environmental Consequences IV-3
Alternative 1 IV-3
Geology, Geologic Hazards, and Soils IV-3
Hydrology, Floodplains, and Water Quality IV-5
Wetlands IV-6
Vegetation IV-7
Wildlife IV-8
Special-status Species IV-8
Air Quality IV-9
Natural Soundscapes IV-11

Chapter IV: Environmental Consequences (cont.)

Cultural Resources IV-12
Transportation IV-13
Scenic Resources IV-14
Visitor Experience IV-15
Park Operations and Facilities IV-16
Alternative 2 (Preferred Project) IV-17
Geology, Geologic Hazards, and Soils IV-17
Hydrology, Floodplains, and Water Quality IV-19
Wetlands IV-21
Vegetation IV-23
Wildlife IV-25
Special-status Species IV-26
Air Quality IV-28
Natural Soundscapes IV-30
Cultural Resources IV-33
Transportation IV-34
Scenic Resources IV-36
Visitor Experience IV-37
Park Operations and Facilities IV-38
Alternative 3 IV-41
Geology, Geologic Hazards, and Soils IV-41
Hydrology, Floodplains, and Water Quality IV-42
Wetlands IV-44
Vegetation IV-45
Wildlife IV-47
Special-status Species IV-48
Air Quality IV-50
Natural Soundscapes IV-52
Cultural Resources IV-54
Transportation IV-55
Scenic Resources IV-57
Visitor Experience IV-58
Park Operations and Facilities IV-59

Chapter V: Consultation and Coordination V-1
Scoping History V-1
Compliance History V-1
List of Agencies, Organizations, Interested Parties, and Businesses that Received this Document V-5
List of Preparers V-6

Chapter VI: References VI-1
Bibliography VI-1
Glossary of Terms VI-4
Acronyms VI-8

List of Figures

I-1	Project Location	I-2
II-1	Alternative 1 Requa Area (No Action)	II-2
II-2	Alternative 1 Aubell Area (No Action)	II-5
II-3	Alternative 2 Requa Area Restoration Concept (Preferred)	II-6
II-4	Alternative 2 and Alternative 3 Restoration Cross Section Concepts	II-7
II-5	Alternative 2 Aubell Area (Preferred)	II-9
II-6	Aubell Area Illustrative Building Diagrams	II-11
II-7	Alternative 3 Requa Area Restoration Concept	II-14
II-8	Alternative 3 Aubell Area	II-16
III-1	Sensitive Biological Resources Habitat	III-5

List of Tables

II-1	Existing Requa Area Buildings and Use (Alternative 1)	II-3
II-2	Aubell Maintenance Facility Interior Building Program (Alternatives 2 and 3)	II-10
II-3	Summary of Environmental Consequences	II-21
IV-1	Typical Noise Levels from Heavy-duty Equipment	IV-31

Appendices

A	CEQA Initial Study	A-1
B	Applicable Legislation and Policies	B-1
C	Mitigation Measures	C-1
D	Special-status Species	D-1
E	NEPA Impact Threshold Definitions	E-1
F	Past, Present, and Reasonably Foreseeable Actions	F-1

Chapter I: Purpose and Need

Background

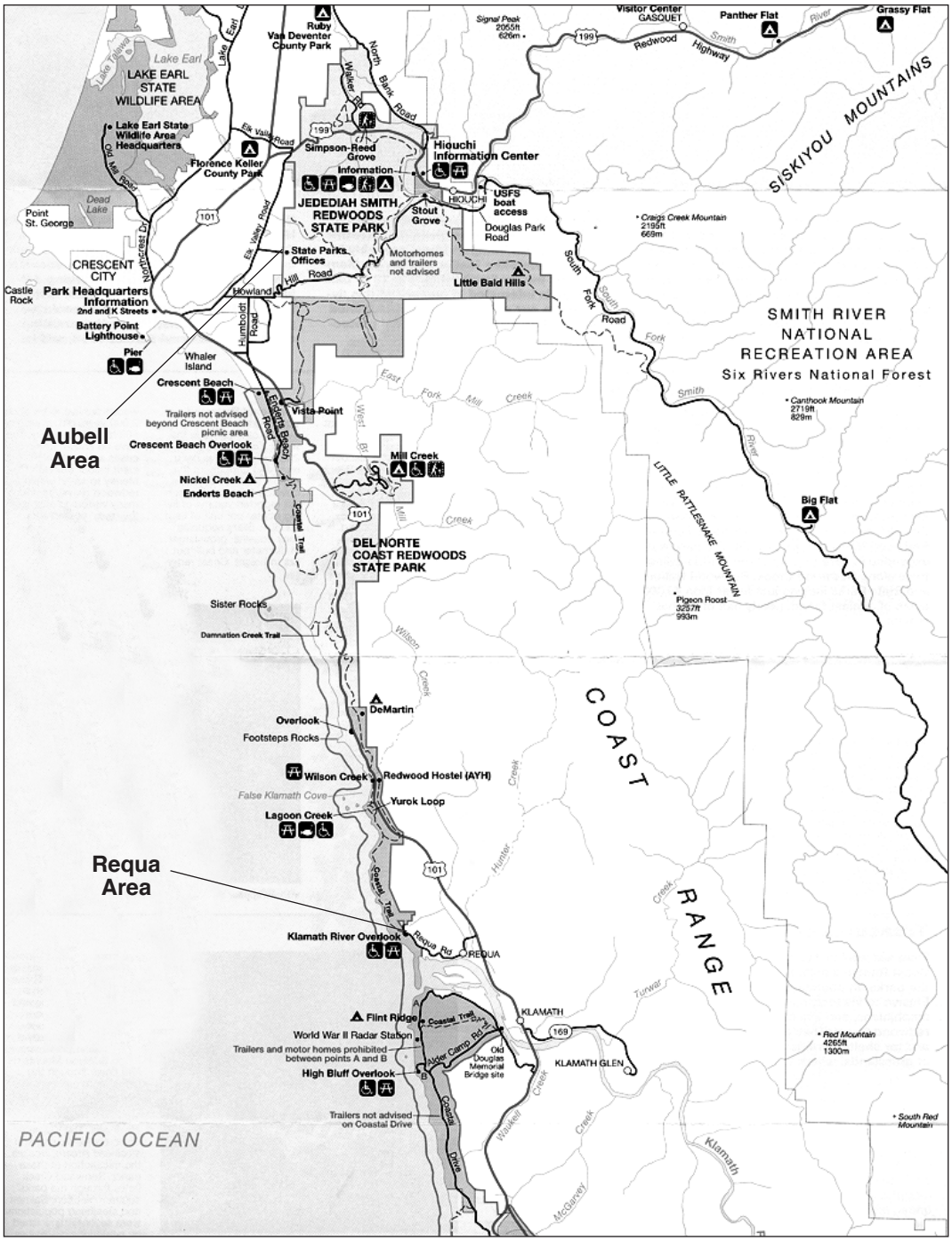
The National Park Service (NPS) and California Department of Parks and Recreation (CDPR) propose to develop a new maintenance facility for Redwood National and State Parks (the parks) at the Aubell area, which is located in the northern area of the parks near Crescent City, California on CDPR-owned land (see figure I-1). The Aubell area is currently utilized for CDPR operations and NPS ranger functions. The new maintenance facility would consolidate federal and State maintenance operations, and would be jointly operated by NPS and CDPR.

The Aubell facility would replace an existing NPS maintenance facility at Requa (see figure I-1), comprised of numerous retrofitted cold war-era structures on a geologically unstable site. NPS would restore the Requa area, located within the boundary of the Yurok reservation. The proposed Aubell maintenance facility would also replace a CDPR maintenance complex, located at Jedediah Smith Redwoods State Park that was irreparably damaged by fire.

This proposed project is a joint effort by NPS and CDPR, authorized under the Cooperative Management Agreement between NPS and CDPR for Cooperative Management of the Redwood National and State Parks (2002). Redwood National and State Parks *Final General Management Plan / General Plan, Environmental Impact Statement / Environmental Impact Report* and its *Record of Decision and Notice of Determination* (NPS 1999) indicates that NPS and CDPR maintenance facilities would be consolidated wherever it would be cost-effective to do so. The *General Management Plan / General Plan* calls for the primary maintenance facility at Requa to be relocated when complex land sliding and earth-flow movement at Requa threaten the structural integrity of the buildings or the safety of their occupants. The new facility would be planned and designed to meet both NPS and CDPR operational requirements and would have safe, dependable access to area highways and convenient access to park facilities. The Aubell area was identified in the *General Management Plan / General Plan* as an administration site, which allows for maintenance facilities.

The Redwood Maintenance Facility Relocation Environmental Assessment and Initial Study/Mitigated Negative Declaration describes the conservation planning and analysis of environmental impacts of the proposal and alternatives, pursuant to the National Environmental Policy Act (NEPA) for NPS and the California Environmental Quality Act (CEQA) for CDPR. NPS actions analyzed in the environmental assessment pursuant to NEPA include the proposed restoration of the Requa area and the relocation of park maintenance facilities at the Aubell area. CDPR actions analyzed in the draft mitigated negative declaration (see Appendix A, CEQA Initial Study) include the development of park maintenance facilities at the Aubell area.

Figure I-1
Project Location



SOURCE: National Park Service

Redwood Maintenance Facility Relocation Environmental Assessment and Initial Study/Mitigated Negative Declaration
Redwood National and State Parks

DSC / November, 2004 / 167 / 20098

Purpose of and Need for the Action

The purpose of the project is to:

- Provide a joint federal and State maintenance facility for the parks on a geologically stable site with safe and dependable access to various highways and park facilities
- Develop an appropriately sized facility specifically designed for park maintenance operations to increase operational and organizational efficiencies for the parks
- Provide opportunities for increased communication and cooperation between NPS and CDPR staff
- Create sustainable facilities with reduced operational costs
- Restore natural resources at the Requa area, including those that contribute to traditional hunting and gathering values
- Remove an existing sewage treatment plant at the Requa area that no longer meets new State Water Quality Control Board discharge requirements for ocean waters of California

The action is needed because the existing NPS maintenance site at Requa is geologically unstable, with slopes that are steadily sliding towards the Pacific Ocean. Ongoing downslope creep and slumping of underlying materials have created cracks in building foundations, severed subsurface utility lines, and damaged roads. The cold war-era buildings at Requa were not designed for park maintenance operations purposes. The configuration of the buildings, as well as the design of the buildings themselves, hinder NPS maintenance activities and are costly to maintain. The remote coastal location of the Requa area is difficult to access from Highway 101, particularly by large maintenance vehicles and private freight haulers.

CDPR's maintenance facility, formerly located at Jedediah Smith Redwoods State Park, was irreparably damaged by fire. CDPR is currently conducting their maintenance operations from the Aubell area; however, the facilities at Aubell are not appropriately sized nor are the buildings designed for park maintenance purposes. In addition, separate maintenance facilities for the two agencies have limited the agencies' ability to coordinate park maintenance or communicate about maintenance priorities and ongoing maintenance efforts.

The existing operation of the sewage treatment plant at the Requa area is a source of ongoing water quality concern for NPS. The Requa sewage treatment plant no longer meets new State Water Quality Control Board discharge requirements for ocean waters of California.

This report is a joint federal-state compliance document. The environmental assessment has been prepared in accordance with NEPA, regulations of the Council on Environmental Quality (40 Code of Federal Regulations 1508.9), NPS Director's Order-12 (*Conservation Planning, Environmental Impact Analysis, and Decision-making*), and the National Historic Preservation Act of 1966 (as amended). The initial study/mitigated negative declaration has been prepared in accordance with the requirements of CEQA and only analyzes potential impacts associated with the preferred project, considered the "proposed project" for CEQA compliance purposes.

Relationship to Other Plans

The Redwood National and State Parks *Final General Management Plan / General Plan, Environmental Impact Statement / Environmental Impact Report* and its *Record of Decision and Notice of Determination* are the guiding documents for this environmental assessment and initial study/mitigated negative declaration. The proposed project is consistent with guidance set forth in these documents. The project actions were identified in the *General Management Plan / General Plan*.

Regulations and Policies

This environmental assessment and initial study/mitigated negative declaration is written with the guidance of a set of regulations and policies. The project must comply with requirements of NEPA, CEQA, the National Historic Preservation Act, and the federal Endangered Species Act, as well as other legislation that governs land use, natural resource protection, and other policy issues within Redwood National and State Parks (see Appendix B, Applicable Legislation and Policies).

Public Involvement

An extensive public involvement effort was carried out during the planning process for the *General Management Plan / General Plan*. The public outreach effort included a discussion of the need to relocate NPS maintenance operations from the Requa area. The *General Management Plan / General Plan* also showed Aubell as a park administrative site, although the Aubell area was not specifically identified as the primary maintenance area for the parks.

NPS and CDPR conducted public scoping for the Redwood Maintenance Facility Relocation project. The agencies issued a public news release on May 28, 2003, announcing a public scoping meeting, plans to relocate the parks' maintenance facility to the Aubell area and restore the Requa area, and intent to prepare an environmental assessment and initial study analyzing the environmental impacts of this action. A public open house was held following the press release to begin the scoping process for the Redwood Maintenance Facility Relocation project. Three persons attended and no substantive comments were raised at the public meeting. NPS and CDPR also met with the Crescent City Manager, Elk Valley Rancheria representatives, Yurok Tribal representatives, and Smith River Rancheria representatives addressing concerns they may have had regarding the project. No objections to siting the new maintenance facility at the Aubell area were raised during these meetings; however, the Yurok Tribe expressed concerns regarding the disposition of Requa after the park vacates the structures there and the desire to see some buildings and related infrastructure left intact. Consultations with applicable agencies and tribal representatives are ongoing.

Issues Addressed in this Document

Issues and concerns raised during NPS and CDPR internal scoping that are addressed in this document include:

- *Natural Resources*. NPS should restore natural resources at Requa. The proposed maintenance facility at Aubell should be sited to minimize adverse effects to natural resources, including being located outside a 100-foot setback from the tributary to Elk Creek to minimize creek disturbance, and greater than a quarter-mile from old growth redwood forest. This issue was incorporated into Alternatives 2 and 3, and is also addressed in the Natural Resources impact topic discussion.
- *Geologic Instability of Requa Area*. NPS was concerned about the geologic instability of the Requa area, and the associated damage to maintenance facilities at Requa, based on a geological study conducted in 2000 (Kleinfelder 2000). The agency recommended the relocation of park maintenance operations to a more geologically stable site. This issue was incorporated into Alternatives 2 and 3, and is also addressed in the impact topic discussion.
- *Regrading the Requa Area*. NPS would like to restore natural conditions (including those that contribute to traditional hunting and gathering values) at the Requa area to the extent feasible, including removing existing roadway and building benches from the site topography using a balanced cut and fill approach. All removal and restoration activities should consider potential existing hazardous materials. This issue was incorporated into Alternative 2, and is addressed in the impact topic discussion.
- *Sewage Treatment Plant*. The Requa sewage treatment plant no longer meets new State Water Quality Control Board discharge requirements for ocean waters of California. NPS has requested a twilight period to address this issue by the State Water Quality Control Board. This issue was incorporated into Alternatives 2 and 3, and is addressed in the Hydrology, Floodplains, and Water Quality impact topic discussion.
- *Private Water Delivery*. At the Requa area, NPS operates a water supply system that provides water for NPS facilities, as well as five private residences. Upon the closure and restoration of the Requa area, NPS would dismantle the water supply system within park boundaries. Provision of water and development or retrofit of the water system on non-federal lands, if it is to remain, would become the responsibility of the private residences. This issue is addressed in Alternatives 2 and 3. Ongoing maintenance and operation of the system would be the responsibility of the private landowners.
- *Telecommunications Facilities*. NPS has issued, or is processing, right-of-way permits to two companies for telecommunications facilities at the Requa area. The telecommunications companies would continue to be responsible for maintenance and operation of their facilities. This issue is addressed in Alternatives 2 and 3.
- *100-year Flood Flow Conveyance*. If Aubell Lane is reconstructed past the tributary to Elk Creek, the new arch culvert would be sized to convey 100-year flood flows. This issue was incorporated into Alternative 3, and is also addressed in the Hydrology, Floodplains, and Water Quality impact topic discussion.
- *Roadway Condition*. Aubell Lane is too narrow to support the proposed maintenance facility traffic and would need to be widened. The intersection of Aubell Lane with Elk Valley Road is not appropriately configured to support turning movements associated with maintenance facility traffic. This issue was incorporated into Alternatives 2 and 3.
- *Aubell Area Utilities*. The utilities at the Aubell area are insufficient to support the proposed maintenance facility. The utilities would need to be upgraded at sufficient capacities to support park maintenance functions. This issue is addressed in Alternatives 2 and 3.

Impact Topics Selected for Detailed Analysis

A short rationale for each impact topic analyzed in this document is provided below. A description of the existing conditions for each selected topic is provided in Chapter III, Affected Environment. The potential impacts of each alternative within each topic area are presented in Chapter IV, Environmental Consequences.

Natural Resources

NPS and CDPR management policies and natural resource management guidelines require the consideration of natural resources in planning proposals. The Requa and Aubell areas are located within Redwood National and State Parks – an area of abundant natural resources. It is therefore necessary to characterize both these natural resources and the environmental consequences to these resources that could result from implementation of the preferred project and alternatives.

NPS and CDPR analyzed the impacts of each alternative on the following natural resource topics:

- Geology, geologic hazards, and soils
- Hydrology, floodplains, and water quality
- Wetlands
- Vegetation
- Wildlife
- Special-status species
- Air quality
- Natural soundscapes

Cultural Resources

NPS and CDPR management policies and cultural resource management guidelines call for the consideration of cultural resources during the planning of proposed actions and preparation of environmental compliance documentation. Cultural resources exist within the project area and could be affected by implementation of the preferred project and alternatives. Therefore, analysis was performed for:

- Archeological resources
- Historic resources
- Ethnographic resources

Other Resource Topics

The environmental assessment examines the effects of the Redwood Maintenance Facility Relocation project on the social environment of the project location and surrounding areas. Analysis of transportation examines the circulation and access effects of the alternatives on transportation in these areas of the park. Analysis of park operations and facilities is important to ensure the quality and effectiveness of the infrastructure, and the agencies' ability to maintain the infrastructure, used in the operation of the parks to adequately protect and preserve vital resources and provide for an effective visitor experience.

Analysis of the preferred project and alternatives was performed for the following resource topics:

- Transportation
- Scenic resources (including lightscape management)
- Visitor experience
- Park operations and facilities

Impact Topics Dismissed from Detailed Analysis

Environmental Justice

According to the Environmental Protection Agency, environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Presidential Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Cleanup of materials from past activities would occur and the project would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Draft Environmental Justice Guidance (July 1996). Therefore, environmental justice was dismissed as an impact topic.

Prime and Unique Agricultural Lands

The Aubell and Requa areas are not considered Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The Elk Valley Road and Midway sites (for clarification of the sites see figure II-2 in Chapter II, Alternatives) are zoned agricultural; however, they are not currently in agricultural use and are part of Redwood National and State Parks. The project would not convert existing farmland to non-agricultural use. Therefore, the action alternatives would not affect prime and unique agricultural lands.

Land Use

Both the Requa and Aubell areas are considered Developed Zones in the parks' *General Management Plan / General Plan.* The Requa and Aubell areas are located in Del Norte County, and the Elk Valley Road and Midway sites (for clarification of the sites, see figure II-2 in Chapter II, Alternatives) are zoned for agricultural use. A conditional use permit would be requested for the proposed action prior to the start of any construction, if required.

Public Health and Safety

Public health and safety is not presented as a separate topic in this analysis because other sections (geology, geologic hazards, and soils and hydrology, floodplains, and water quality) evaluate park-related public health and safety issues.

Cultural Landscapes

A Yurok Tribe archeologist surveyed the area of potential effect for cultural landscape resources. Through research, field work, and consultation with the Yurok Tribe, and in consultation with the Smith River Rancheria, no such resources were identified within the area of potential effect for the Requa and Aubell areas (Sloan 2004). Implementation of elements of the action alternatives would not have a direct or indirect effect on cultural landscapes.

Museum Collections

Implementation of elements of the action alternatives could result in minimal additions to museum collections, if archeological data recovery is performed as mitigation for direct site impacts. Although such additions would require museum storage space and ongoing collections maintenance and management, the discovery of new artifacts would be uncertain and likely of limited number. Implementation of the action alternatives would not have a perceptible impact on museum collections.

Wilderness Experience

There is no designated Wilderness within the project area. Implementation of elements of the action alternatives would not have a direct or indirect effect on the parks' Wilderness areas.

Socioeconomics

The proposed action would not appreciably impact local businesses or the local economy. Implementation of the proposed action could provide a negligible beneficial impact to the economies of nearby communities, such as Crescent City, Klamath, or other parts of Del Norte County. For example, the proposed action could result in minimal increases in employment opportunities for the local construction workforce and revenues for local businesses and government generated from construction activities and workers. Any increase, however, would be temporary and negligible, lasting only as long as project construction. Therefore, socioeconomic environment was dismissed as an impact topic.

Chapter II: Alternatives

This environmental compliance document presents three alternatives prepared by the National Park Service (NPS) and the California Department of Parks and Recreation (CDPR) for the Redwood Maintenance Facility Relocation project: a no action alternative and two action alternatives.

Alternative 1: No Action

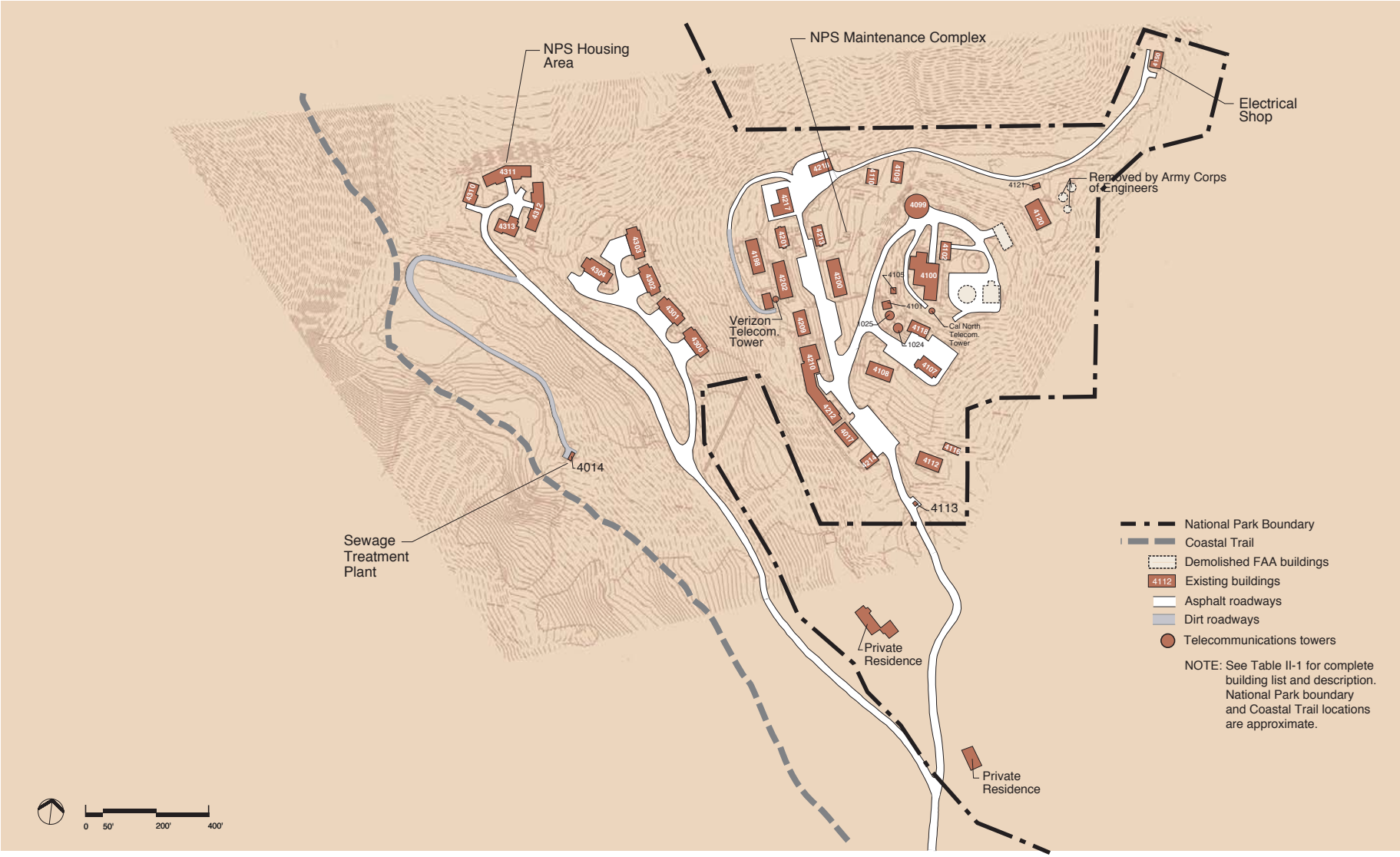
Under Alternative 1, the existing conditions in the project area would be maintained as described in Chapter III, Affected Environment. Alternative 1 provides a baseline from which to compare Alternative 2 and Alternative 3 for the environmental assessment, evaluate the magnitude of proposed changes, and measure the environmental effects of those changes.

Requa Area

Under this alternative, NPS would continue to use the Requa facilities in the most effective manner possible, in support of its mission. The 14-acre Requa area (owned by NPS), located on and accessed by Requa Road, would continue to serve as the primary Federal maintenance facility at Redwood National and State Parks (the parks). The area is located within the boundary of the Yurok reservation. The Requa area was previously a United States Air Force radar base constructed in the 1950s, during the Cold War. Requa's military era structures would continue to consist of approximately 110,000 square feet in 40 buildings of various shapes and sizes (see figure II-1 and table II-1). Approximately 38,500 square feet of building space would continue to be used by NPS to support the park's maintenance operation. NPS would continue to use an additional 7,800 square feet of outdoor space for storage. Over time, the buildings structures would continue to degrade. NPS would conduct ongoing maintenance of the area associated with routine building maintenance and erosion control. Two telecommunications facilities would continue to operate at the area. The Requa area would continue to provide housing for some NPS staff.

Maintenance offices at the Requa area.

Figure II-1
Alternative 1 Requa Area (No Action)



SOURCE: National Park Service and BSA Architects

Table II-1
Existing Requa Area Buildings and Use (Alternative 1)

Building Number	Description/Original Use	Approx. Size (sf)	Existing/Future Use
1024	75,000 Gallon Water Tank	n/a	In Use
1025	75,000 Gallon Water Tank	n/a	In Use
500	Salt Creek Pump House	n/a	In Use
4014	Sewage Treatment Plant	250	In Use
4017	New Metal Building	2,480	Not Used
4098	Radar Dome	2,530	Removed
4099	Old Radar Dome	1,900	Storage
4100	Operations Building	7,400	Storage
4101	Water Booster Station	510	In Use
4102	Storage	1,603	Removed
4105	Shed	260	Not Used
4106	Building	2,220	Removed
4107	Plumbers	2,580	In Use
4108	Bachelor Officer Quarters Barracks	2,770	Storage
4109	Storage	1,840	Storage
4110	Radio	1,200	In Use
4112	Noncommissioned Officer Building	2,750	In Use
4113	Entrance		Removed
4114	Ground-to-air Transmit and Receiver	2,240	Storage
4116	Church		Removed
4118	Sign Shop	1,850	In Use
4120	Power Plant	3,400	Storage
4121	Fuel Shed	280	Not Used
4150	Ceramics Shop	1,200	In Use
4198	Noncommissioned Officer Gym	3,360	Not Used
4200	NPS Offices - Maintenance Division	3,780	In Use
4201	Training Building	1,580	In Use
4202	Barracks	3,710	Not Used
4203	Firewood Storage	n/a	Storage
4208	Barracks	2,450	Storage
4209	Workshop		Not Used
4210	Dining Hall	5,100	Not Used
4212	Offices	4,070	Not Used
4213	Hobby House	1,590	Storage
4214	Steam Plant	1,420	Not Used
4217	Carpenter Shop	3,000	In Use
4218	Mechanic Shop (Road & Trails)	2,120	In Use
4300	Apartment	3,220	Not Used
4301	Apartment	3,220	Not Used
4302	Apartment	3,220	Not Used
4303	Apartment	3,220	Not Used
4304	Apartment	3,220	Not Used
4310	Half-Duplex	1,840	In Use
4311	Duplex	4,450	In Use
4312	Duplex	4,450	In Use
4313	Commanders Residence	2,550	In Use
	Total Square Footage:	**100,833**	

The existing Requa water supply system would continue to operate, providing service to Requa facilities as well as five private homes connected to the existing water system. The water system would continue to consist of a well, a 4-inch transmission line that delivers water to two 75,000-gallon water storage tanks, a hydropneumatic booster station, and a distribution system. The sewage treatment plant at the Requa area would continue to be outmoded, and not meet State and Regional Water Quality Control Board discharge standards.

Aubell Area

Main ranch house at Aubell serving as a CDPR ranger station.

Under Alternative 1, the Aubell area would remain in its existing condition and current use. The Aubell area is an L-shaped parcel located on Elk Valley Road. Access to the area is provided by Aubell Lane. The Aubell area would continue to be utilized for CDPR operations and ranger functions, and include two houses, one four-door garage, and a small barn. The unused fields would remain as open space.

Redwood water storage tank and chlorinator at the Abell area.

Utilities at the Aubell area would be unchanged. The onsite water system would continue to consist of an infiltration gallery at a fresh water spring. A 1 ½-inch line would continue to deliver the spring water to a slow sand filter, chlorinator, and a 1,200 gallon redwood water storage tank. The onsite wastewater system would continue to consist of a small septic tank and leach field. Single-phase overhead electric lines would continue to service the existing buildings. The narrow access road into the site would remain unchanged.

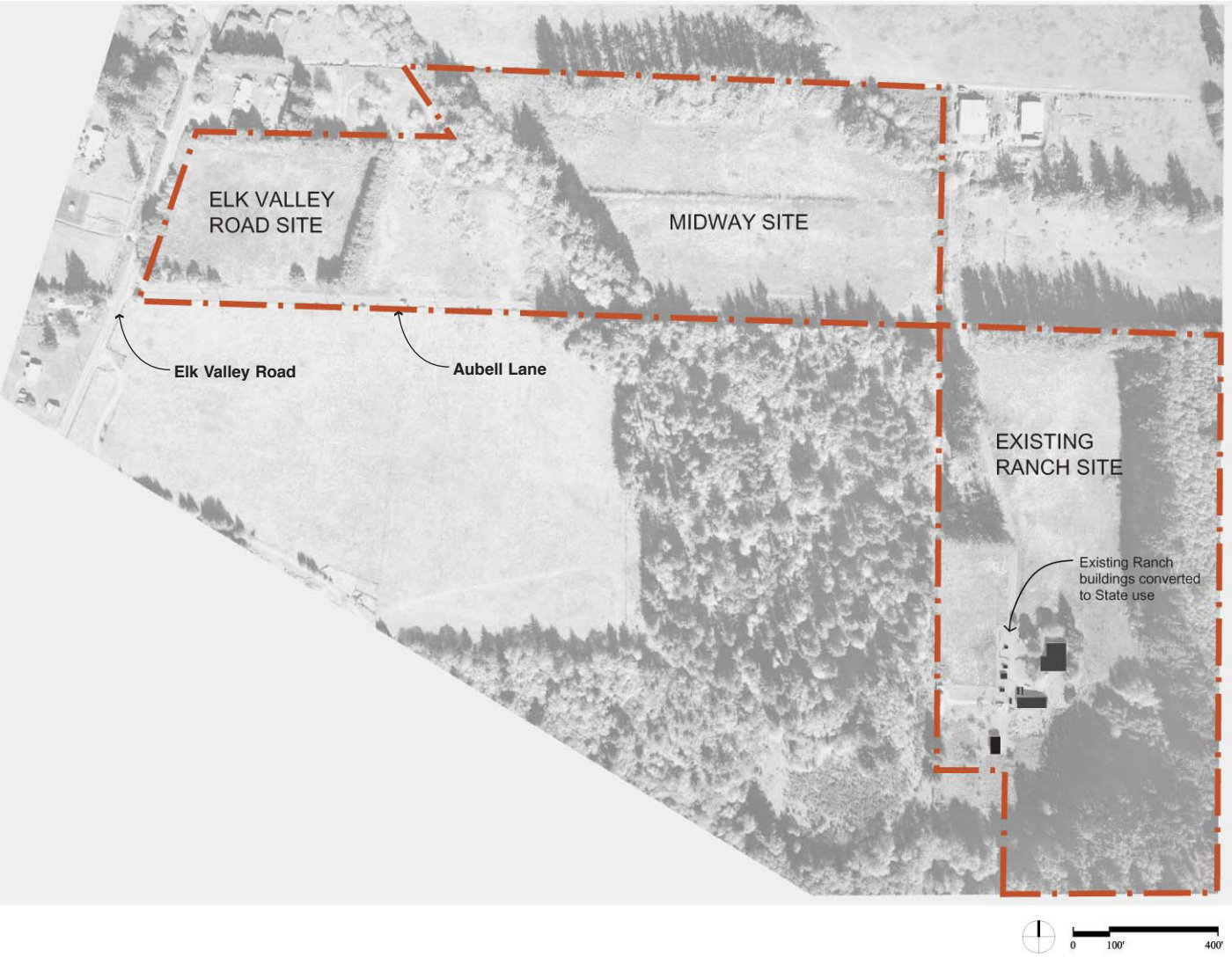
Alternative 2: Requa Restoration/Elk Valley Road Site (Preferred Project)

Requa Area

Alternative 2 includes restoration of the Requa area to conditions more similar to natural conditions (see figures II-3 and II-4). The Requa area would be available for casual use by park visitors; however, no new visitor facilities would be included and entry to the area would be gated. Use of the area is expected to be minimal based on existing use of nearby areas. Few, if any, specific Requa area visitor trips are anticipated. NPS would demolish the existing structures to their foundations just below the ground surface. The sewage treatment plant would be removed, and the old septic tanks would be decommissioned. NPS would remove the two 75,000-gallon water storage tanks from the area; the tanks would be salvaged.

Most of the existing paved roadways would be removed from the area. The two telecommunications facilities and the roads servicing them would remain in their existing locations.

Figure II-2
Alternative 1 Aubell Area (No Action)

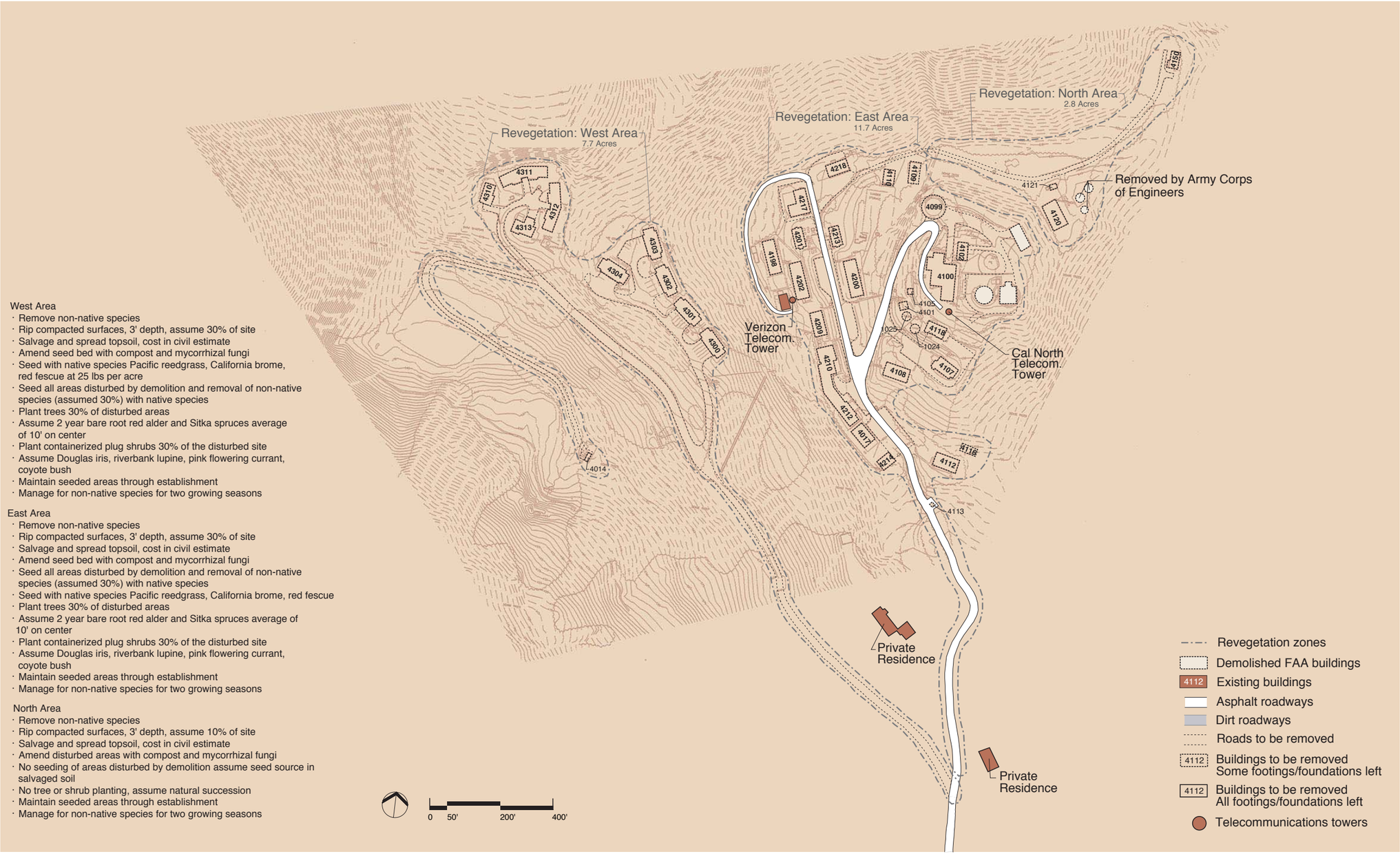


SOURCE: National Park Service and BSA Architects

Redwood Maintenance Facility Relocation Environmental Assessment
and Initial Study/Mitigated Negative Declaration
Redwood National and State Parks

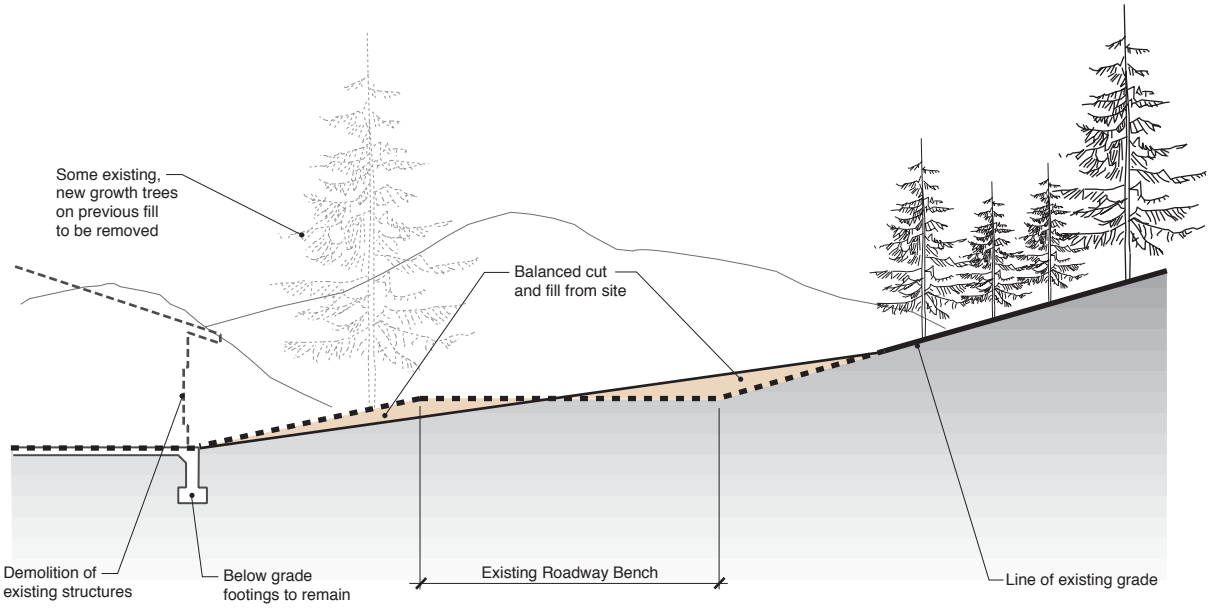
DSC / November, 2004 / 167 / 20100

Figure II-3
Alternative 2 Requa Area Restoration Concept (Preferred)

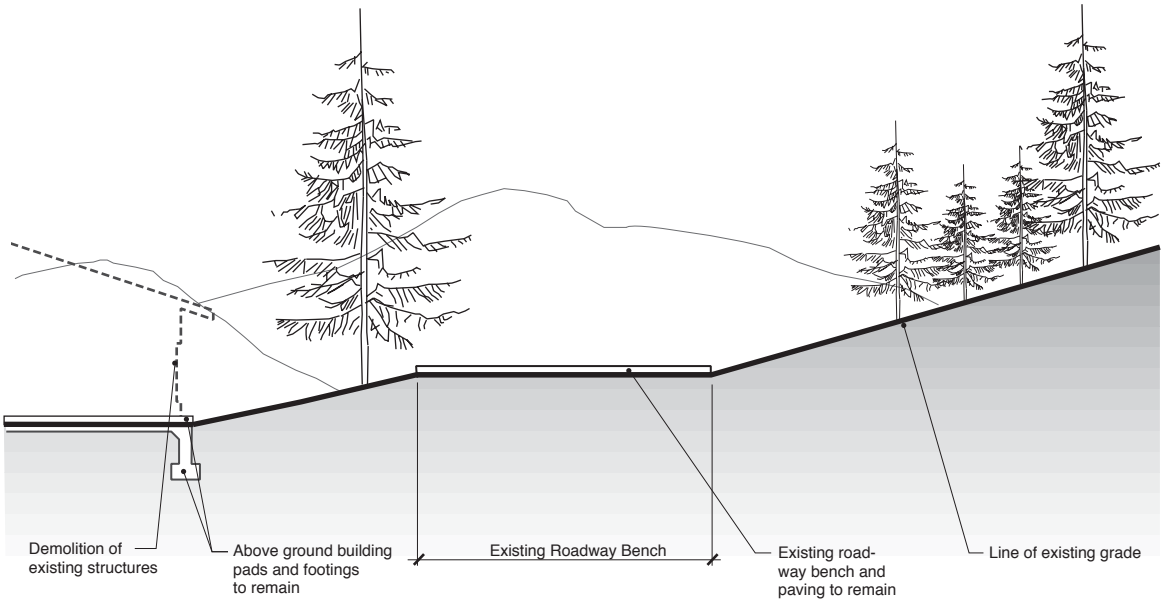


SOURCE: National Park Service and BSA Architects

Figure II-4
Alternative 2 and Alternative 3 Restoration Cross Section Concepts



Alternative 2 (Preferred)



Alternative 3

SOURCE: National Park Service and BSA Architects

As part of the restoration effort, NPS would remove non-native plant species from the Requa area. A detailed restoration plan would be incorporated into the project design process. The restoration concept would include tilling of compacted soils in approximately 30 percent of the west and east areas and 10 percent of the north area (see figure II-3) to a depth of about three feet. NPS would salvage and spread topsoil, and amend the seed bed with compost and mycorrhizal fungi. Approximately 30 percent of the west and east areas would be seeded with native species of Pacific reedgrass, California brome, red fescue, Douglas iris, riverbank lupine, pink flowering currant, coyote bush, red alder, and Sitka spruce. The north area is wetter and would naturally revegetate from existing seed sources. NPS would remove non-native plant species for two growing seasons, following the completion of revegetation activities.

NPS would demolish and remove above-ground drainage facilities, including culverts, concrete ditches, and drop inlet boxes. In addition, debris and other materials would be removed. The overhead electric lines would also be removed. Many of the retaining walls on the Requa area would be removed, and manholes would be abandoned and filled. NPS would remove the exterior and interior property fencing. However, facilities associated with roads that would continue to provide access to the Requa area (i.e., drainage facilities and electric lines) would be retained. Implementation of Alternative 2 would include maximum recycling of materials to the extent practicable.

Existing asbestos, lead paint, or other hazardous materials would be surveyed, contained, and removed to a qualified landfill, in compliance with federal, state, and local regulations. A portion of the existing area and building infrastructure would remain, including some roadways, retaining walls, and existing drainage facilities.

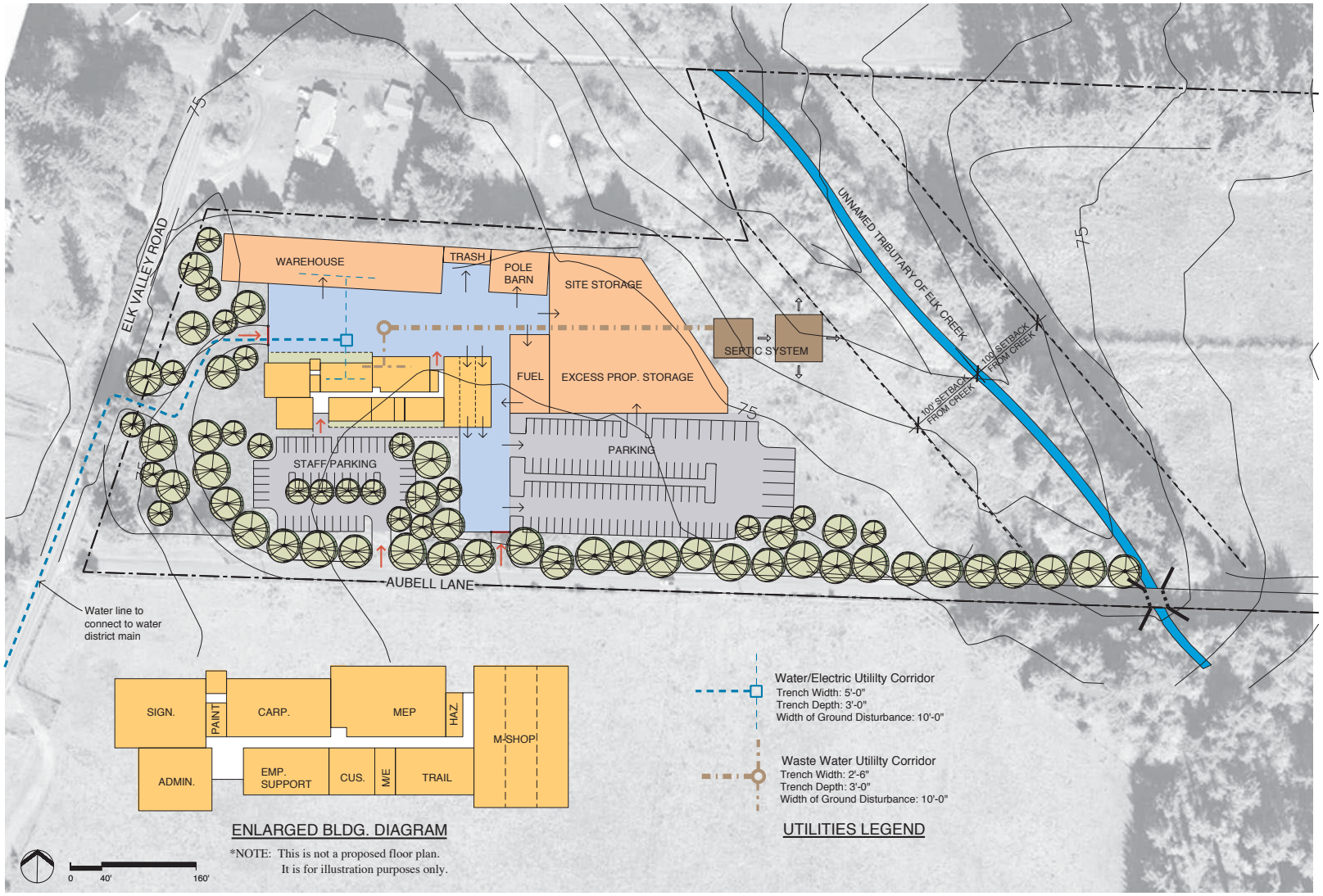
NPS would grade the building pad and roadway corridor areas of the Requa area to re-contour the area, using a balanced approach to cut and fill (see figure II-4). No soil would be imported and previous fill areas would be reclaimed. NPS would implement an erosion control plan following completion of the earthwork, and would revegetate the area with native plant species. This alternative would require removal of some trees that are located within up to approximately 4 acres of disturbed and fill areas on the Requa area. The trees are approximately 50-year old Sitka spruce and red alder that are 6- to 24-inches in diameter at breast height. This area includes minimal understory vegetation.

Under Alternative 2, the Requa water supply system would be dismantled within federal land; however, water service to the private residences could be offered by converting the existing system located on non-federal lands to private use. The water system conversion and ongoing operations and maintenance would be the responsibility of the private landowners.

Aubell Area (Proposed Project Under CEQA)

As shown in figure II-5, Alternative 2 would develop the proposed Aubell maintenance facility on a 9-acre parcel on the Aubell area adjacent to Elk Valley Road (the Elk Valley Road site). The new maintenance facility would be sited outside a 100-foot setback from an unnamed tributary of Elk Creek. The facility would include a variety of work, shop, storage, and office functions. Maintenance facility operations would include welding, electrical repair work, carpentry, equipment repair, telecommunications operation, sign development and maintenance, grounds keeping, road and trail maintenance, and related office support space. NPS and CDPR would consolidate building functions within several large structures: the maintenance and administrative

Figure II-5
Alternative 2 Aubell Area (Preferred)



SOURCE: National Park Service and BSA Architects

functions, the central warehouse, and the covered storage/"pole barn." This consolidation would minimize the amount of perimeter wall and developed footprint, and improve HVAC energy conservation and other building system efficiencies. The maintenance facility buildings would be oriented in an east-west configuration to provide the maximum winter sun and summer shade, as well as other passive solar opportunities.

Building layout and exterior would be developed during the project design (working drawings) phase and would include a soils investigation. However, figure II-6 illustrates a conceptual, potential maintenance facility building layout and exterior under the action alternatives. The new parks maintenance facility would include sustainable technologies to the extent practicable and would include approximately 36,000 square feet of interior building area (see table II-2), and a 4,000 square foot building for covered equipment storage.

Table II-2
Aubell Maintenance Facility Interior Building Program (Alternatives 2 and 3)

Building Element	Square Feet
Administration, including lobby, offices, conference room, meeting room, etc.	1,850
Employee Support, including break room, locker room, showers, restrooms, etc.	1,600
Carpentry Shop	2,450
Sign Shop	2,925
Hazardous Materials Storage (such as paint and miscellaneous materials)	300
Mechanical, Electrical, Plumbing, and Radio Shop	3,170
Park Grounds and Custodial Shop	875
State Requirements	800
Maintenance of Roads and Bridges Shop	4,500
Trail Maintenance Shop	1,475
Centralized Warehouse	10,000
Total Buildings (Net Area)	**29,945**
Total Buildings (20% Grossing Factor)[a]	**36,000**

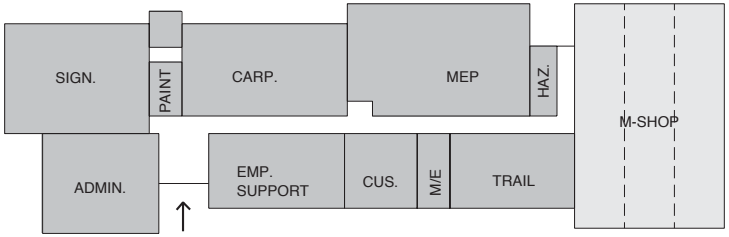
[a] The grossing factor includes all additional building space necessary to connect the buildings in an efficient design (e.g., enclosed corridors), mechanical spaces (e.g., telephone, electrical), closests. etc.

The entire maintenance facility site would include approximately 145,000 square feet of developed area (i.e., including approximately 70,000 square feet of paved lots, 52,000 square feet of unpaved lots, 28,000 square feet of landscaping, 60,000 square feet of restoration, and 2,800 square feet of concrete sidewalks). Site development would involve the following:

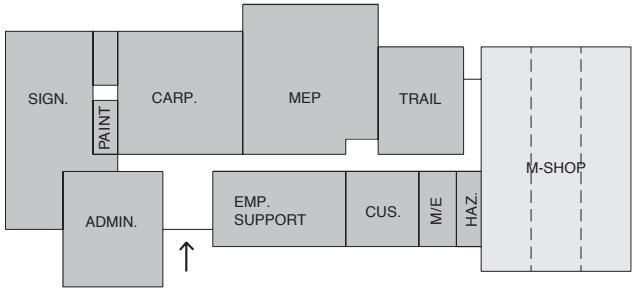
- Approximately 43,000 cubic yards of earthwork (to a depth of approximately 3 feet) for site grading
- Amend approximately 7,000 cubic yards of topsoil (to a depth of about 6 inches overall)
- Perimeter fencing and an access gate, site lighting, and signs

Site development could require removal of Sitka spruce and red alder from less than 0.5 acre of the site. The trees that could be removed are approximately 12- to 24-inches in diameter at breast height.

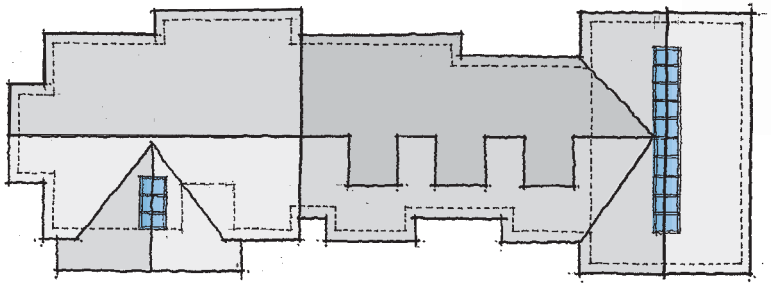
Figure II-6
Aubell Area Illustrative Building Diagrams



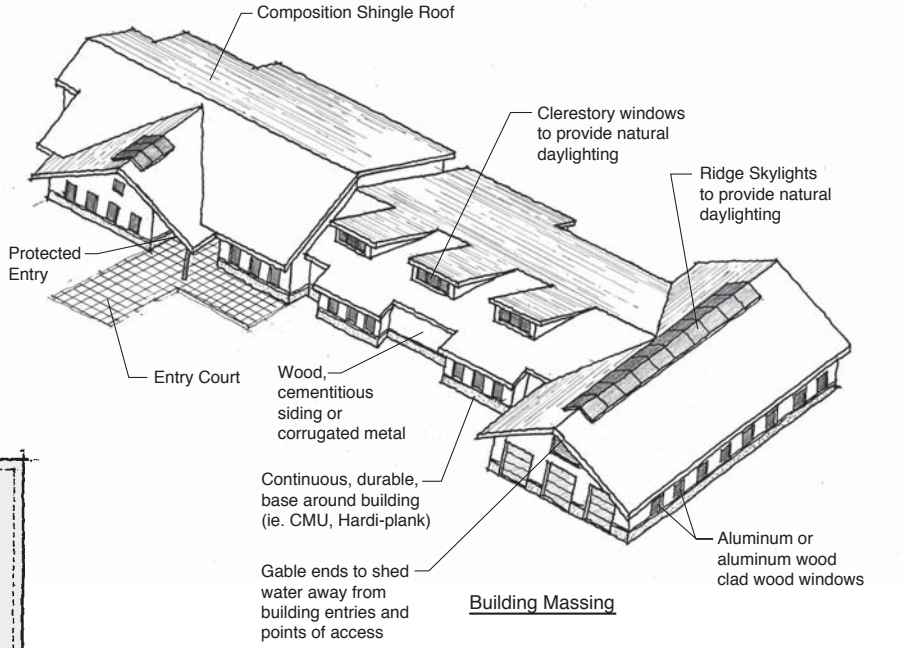
Enlarged Building Diagram - Alternative 2



Enlarged Building Diagram - Alternative 3



Typical Roof Plan



Building Massing

0 3' 15' 30'

*NOTE: These drawings are conceptual and are for illustration purposes only.

SOURCE: National Park Service and BSA Architects

The facility would also include approximately 135 equipment, park vehicle, and employee parking spaces, as well as an appropriate number of parking spaces that meet or exceed the minimum requirements of the Americans with Disabilities Act and other applicable accessibility standards. This building program was developed with the aid of NPS maintenance facility planning model.

The estimated daily water requirement for the new maintenance facility would be about 2,000 gallons per day, including demand for building uses and minor irrigation requirements. The fire flow requirements for the new facility, which would be equipped with a fire sprinkler system, would be approximately 1,500 gallons per minute for two hours (180,000 gallons) with 20 pounds per square inch residual pressure at the fire hydrant. Water would be supplied to the maintenance facility by connecting to the Bertsch Ocean View Water District's public water supply system. A 10-inch, water pipe would be installed a distance of approximately 5,200 feet beneath Elk Valley Road to the Aubell area. A 6-inch water pipe would extend approximately 300 feet to the facility.

Alternative 2 would include an onsite wastewater treatment and disposal system. Approximately 1,100 gallons of wastewater per day would be generated at the new facility. The design difference between wastewater treatment and water requirement (approximately 2,000 gallons per day) is due to irrigation and equipment washdown. The wastewater treatment system would include a septic tank and leach field system connected to the building by a 4-inch sewer line approximately 500 feet in length.

Stormwater would be collected and treated with passive treatment techniques such as a grassy swale or filter strips. The grassy swales would be approximately 20 feet by 50 feet in dimension, and would be located between the parking area and a 100-foot setback from the creek. These vegetated surfaces would allow run-off to flow in sheets through vegetation, slowing and filtering the flow. Sediments would be removed from the water, and vegetation would absorb any nutrients in the water. Agency maintenance would consist of regular mowing, clearing litter, and periodic removal of excess silt.

Under Alternative 2, the new maintenance facility would be supplied with three-phase power. The overhead electrical line that parallels Elk Valley Road has both single phase and three-phase power. A new underground power line would be installed from the existing line to the new building (approximately 300 feet of electrical line).

Alternative 2 would include road modifications to Elk Valley Road and Aubell Lane to accommodate maintenance vehicles and increased traffic at the site following the development of the new facilities. The intersection of Aubell Lane and Elk Valley Road would be shifted to the north to allow for better vehicular sight distances. Elk Valley Road would be widened at the new Aubell Lane intersection to provide a deceleration lane and a left turn lane. In addition, approximately 500 feet of Aubell Lane itself would be widened to two lanes to allow maintenance and park vehicles to access the back side of the proposed facility.

The main ranch house would serve as a NPS/CDPR ranger station providing facilities for approximately 12 park staff.

Conditional Use Permit

The Requa and Aubell areas are located in Del Norte County, and the Elk Valley Road site is zoned for agricultural use. A conditional use permit would be requested for the proposed action prior to the start of any construction, if required.

Construction Schedule

The construction schedule for the entire project would extend from approximately spring 2007 through spring 2009. Construction activity would begin at the Aubell area and would occur over an approximately 12-month period. NPS would begin demolition and restoration activities at Requa upon completion of the new maintenance facility at the Aubell area. Requa demolition and restoration would occur over approximately 12-months, with the demolition phase lasting approximately 2 months.

Construction Equipment

Alternative 2 would include use of the following types of construction equipment: dump truck, concrete truck, hauling truck, small crane truck, loader, excavator, grader, backhoe, bulldozer, cherry picker, paving machine, watering truck, air compressor, jackhammer, chainsaw, powered hand tools, and small electric generators. Transport materials or equipment, delivery trucks, and crew vehicles would also be present intermittently at the site.

Staging Area

At the Requa area, restoration activities would be staged throughout the area. At the Aubell area, construction activities would be staged within the proposed development footprint. Additional staging areas outside the Requa and Aubell areas are not required.

Alternative 3: Requa Partial Restoration/Midway Site

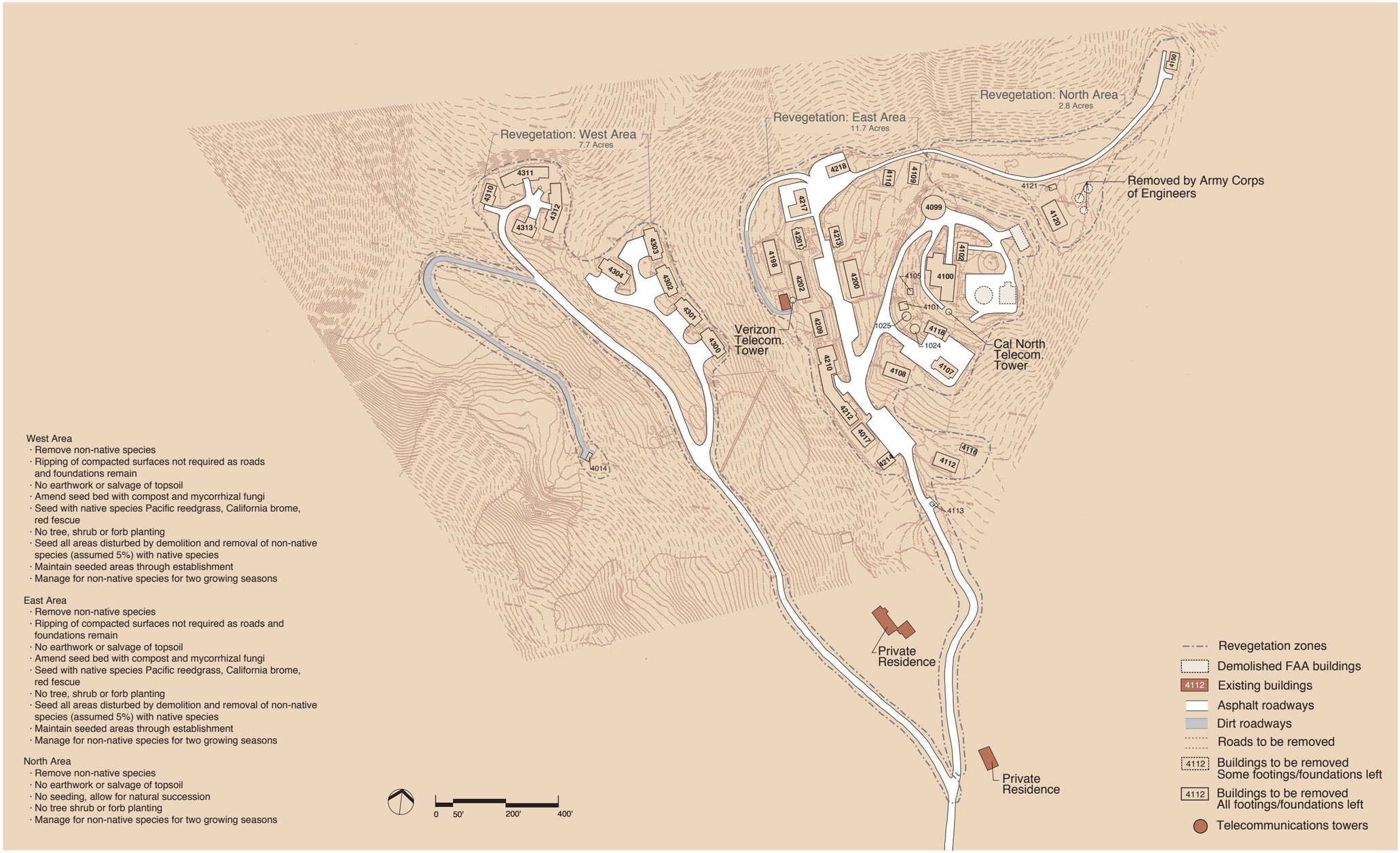
Requa Area

Alternative 3 would restore the Requa area to a lesser degree than Alternative 2. NPS would demolish the existing Requa structures leaving their foundations in place (see figure II-7). The sewage treatment plant would be removed by NPS, and the old septic tanks would be decommissioned. NPS would remove the two 75,000-gallon water storage tanks from the area; the tanks themselves would be salvaged. Implementation of Alternative 3 would include maximum recycling of materials to the extent practicable.

The existing paved roadways would be left in place and would be gated. In addition, the two telecommunications facilities and the roads servicing them would continue to be located at the Requa area, similar to Alternative 2.

A detailed restoration plan would be incorporated into the project design process. The restoration concept includes returning the site to conditions more similar to natural conditions by removing non-native plant species from the Requa area from a much smaller amount of land than under Alternative 2. NPS would amend the seed bed with compost and mycorrhizal fungi. Areas disturbed by demolition and removal of non-native plant species (approximately 5 percent of

Figure II-7
Alternative 3 Requa Area Restoration Concept



SOURCE: National Park Service and BSA Architects

Redwood Maintenance Facility Relocation Environmental Assessment
and Initial Study/Mitigated Negative Declaration
Redwood National and State Parks

DSC / November, 2004 / 167 / 20105

area) in the west and east areas of the Requa area (see figure II-7) would be seeded with native species of Pacific reedgrass, California brome, and red fescue. The north area would naturally revegetate from existing seed sources. NPS would remove non-native plant species for two growing seasons, following the completion of demolition and revegetation activities.

NPS would leave the existing roadway pavement, benches, and building pads in place, and would not recontour the topography of the area (see figure II-4). The existing retaining walls and above-ground drainage facilities (e.g., culverts, concrete ditches, drop inlet boxes, etc.) would be abandoned on site. Since the existing retaining walls and drainage system would remain in place, the Requa area would require ongoing maintenance by park staff to prevent erosion from deteriorating infrastructure.

Manholes would be abandoned and filled for safety reasons. NPS would remove the exterior and interior property fencing. Some overhead electric lines would be removed. Existing asbestos, lead paint, or other hazardous materials would be surveyed, contained, and removed to a qualified landfill, in compliance with federal, state, and local regulations.

Because building foundations and pavement would remain in place, NPS would undertake little or no grading activities at the area. No soil would be imported to the area. Due to the minimal amount of grading envisioned under this alternative, if any, NPS would not implement an erosion control plan. NPS would allow the Requa area to naturally revegetate. It is not anticipated that tree removal would be required.

Under Alternative 3, the Requa water supply system would be dismantled within federal land; however, water service to the private residences could be offered by converting the existing system located on non-federal lands to private use. The water system conversion and ongoing operations and maintenance would be the responsibility of the private landowners.

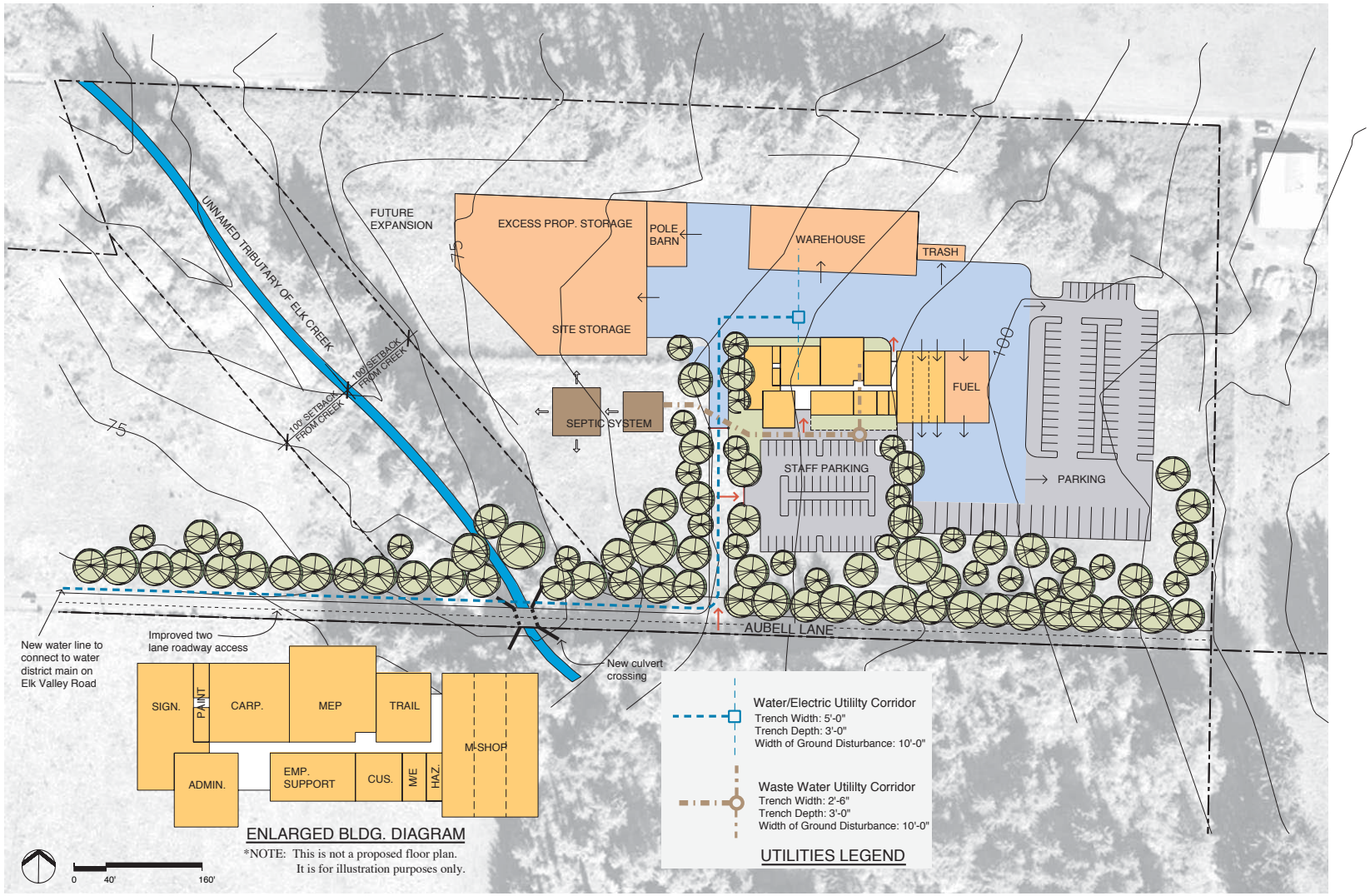
Aubell Area

Under Alternative 3, the maintenance facility would be developed on an approximately 13-acre parcel in the middle of the Aubell area (the Midway site, see figure II-8). The facility would be sited outside a 100-foot setback from an unnamed tributary of Elk Creek. The building program and utility provision would be the same as described under Alternative 2. The primary facility construction differences of Alternative 3 would be related to the proximity of the Midway site to utility connections and the length of Aubell Lane road improvements for the interior site. These distinctions are noted below.

Similar to Alternative 2, water would be supplied to the facility by connecting to the Bertsch Ocean View Water District's public water supply. A 10-inch water pipe would be installed a distance of approximately 2,400 feet along Elk Valley Road. A 6-inch water pipe would extend approximately 1,800 feet down Aubell Lane to the Midway site. It is not anticipated that tree removal would be required.

Similar to Alternative 2, the new maintenance facility would be supplied with three-phase power from Elk Valley Road. The power line would be extended approximately 1,800 feet underground down Aubell Lane from Elk Valley Road to the Midway site.

Figure II-8
Alternative 3 Aubell Area



SOURCE: National Park Service and BSA Architects

Approximately 1,800 feet of Aubell Lane would be widened to two lanes to provide adequate road service to the Midway site. In addition, a new arch culvert would be constructed over the unnamed tributary to Elk Creek crossing the Aubell area. The arch culvert would accommodate the road widening, and adequately convey 100-year flood flows.

Similar to Alternative 2, the main ranch house would remain as a ranger station providing facilities for approximately 12 park staff.

Conditional Use Permit

The Requa and Aubell areas are located in Del Norte County, and the Midway site is zoned for agricultural use. A conditional use permit would be requested for the proposed action prior to the start of any construction, if required.

Construction Schedule

The construction schedule for Alternative 3 would be the same as Alternative 2.

Construction Equipment

The construction equipment for Alternative 3 would be the same as Alternative 2.

Staging Area

The staging area requirements for Alternative 3 would be the same as Alternative 2.

Environmentally Preferable Alternative

The environmentally preferable alternative is determined by applying criteria identified in NEPA Section 101 to each alternative considered. The criteria are as follows:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations
- Assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences
- Preserve important historic, cultural and natural aspects of our national heritage and maintain wherever possible, an environment that supports diversity and variety of individual choice
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources

NPS considered the alternatives in this analysis in accordance with NEPA and Council on Environmental Quality regulations (Section 1505.2) and determined that Alternative 2 (Preferred Project), including the proposed project under CEQA at the Aubell area, as presented in the Redwood Maintenance Facility Relocation Environmental Assessment and Initial Study/

Mitigated Negative Declaration would be environmentally preferable based on its furtherance of NEPA Section 101 goals. After review of potential natural and cultural resource impacts and effects on public safety and visitor access, Alternative 2 would attain the widest range of beneficial uses of the environment achieving a balance between population and resource use, while minimizing environmental impacts on natural and cultural resources and assuring safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

Of the alternatives considered in this document, Alternative 2 would result in the greatest restoration to the Requa area, resulting in site conditions that most closely replicate pre-development conditions. The cut slopes at Requa would be partially regraded using a balanced cut and fill approach and areas would be revegetated, which would improve slope stability and reduce erosion on the Requa area. Under Alternative 2, the new maintenance facility would be developed at the Elk Valley Road site, which is the part of the site at the Aubell area most distant from old growth forest and associated special-status species habitat. Alternative 2 would result in less ground disturbance for new utility installation than Alternative 3, as well as fewer linear feet of road widening for Aubell Lane. Unlike Alternative 3, Alternative 2 would not require the development of an arch culvert over the unnamed tributary to Elk Creek, and would avoid associated disruption of the riparian corridor in this area.

Alternative 2 and Alternative 3 would similarly provide a range of beneficial uses of the environment without degradation or risk to health or safety by relocating the parks' maintenance facility from the geologically unstable Requa area to the Aubell area. The outmoded sewage treatment plant at Requa would be dismantled, reducing water quality impacts at the area. Alternative 2 and Alternative 3 would similarly approach maximum attainable recycling of depletable resources by implementing sustainable technologies in the development of the new maintenance facility at the Aubell area, and discontinuing use of Requa structures (recycling materials to the extent practicable), which are not energy efficient.

Under Alternative 1, the maintenance facility would remain at the geologically unstable Requa area, resulting in continued health and safety risks. The Requa area would not be restored. The parks' operational inefficiencies would continue due to the poorly configured Requa structures and the insufficient facilities for CDPR operations at the Aubell area.

Actions Considered but Dismissed

During the Redwood Maintenance Facility Relocation planning process, alternative actions were eliminated from detailed study for any one or a combination of the following reasons:

- Does not implement the decisions of the *General Management Plan/General Plan* for the project area
- Does not satisfy guidance criteria, meet project goals, or resolve park planning needs
- Unacceptable environmental, cultural, scenic, visitor experience, or operational impacts would be caused
- Is not technically or economically feasible

Those alternative actions considered but eliminated from detailed study are described below.

Maximum restoration of the Requa area

NPS considered a maximum restoration effort of the Requa area. This alternative would involve importing large amounts of fill material to re-establish the pre-development topographic contours of the area. This alternative action was considered but dismissed for the following reasons:

- Unacceptable environmental, cultural, scenic, visitor experience, or operational impacts would result. This alternative would somewhat replicate the pre-development contours of the Requa area through the importation of substantial volumes of fill material. The area's roadway benches and building pads would be recontoured with earthen fill to replicate natural contours. NPS dismissed this alternative due to the large amounts of imported fill that would be required. Large amounts of fill material could result in the potential introduction of non-native plant species associated with the fill material, as well as potential impacts at the fill material borrow site associated with site excavation. NPS Management Policies 2001 (Section 9.1.3.2) discourage the use of large amounts of imported fill. In addition, this alternative would result in a high project cost and is not economically feasible.

Development of the Aubell facility at the existing ranch site

NPS and CDPR considered developing the Aubell maintenance facility at the existing Aubell ranch site. This alternative action was considered but dismissed for the following reasons:

- Unacceptable environmental, cultural, scenic, visitor experience, or operational impacts would result. This alternative would develop the Aubell maintenance facility at the Existing Ranch site in the interior area of the Aubell area. The agencies dismissed this alternative because the site is located within a quarter-mile of the old growth redwood forest. Old growth redwood forest and the area within a quarter-mile of such forest are important habitat for the federally–listed endangered spotted owl and marbled murrelet. In addition, this alternative would result in a high project cost and is not economically feasible.

Development of a larger maintenance facility at the Aubell area.

NPS and CDPR considered developing a 40,000 to 42,000 square foot maintenance facility building with a 6,600 square foot pole barn. This alternative action was considered but dismissed for the following reasons:

- Unacceptable environmental, cultural, scenic, visitor experience, or operational impacts would result. The agencies considered developing a 40,000 to 42,000 square foot maintenance facility with a 6,600 square foot pole barn. This alternative would have provided approximately 20,000 square feet in building area, 20,000 to 22,000 square feet in warehouse area, and 6,600 square feet of pole barn storage area. The agencies determined that this larger building program exceeded their maintenance facility needs. The larger development footprint of the facility would have resulted in unnecessary disturbance of undeveloped areas of the Aubell area. In addition, this alternative would result in a high project cost and is not economically feasible.

Mitigation Measures

NPS and CDPR place a strong emphasis on avoidance, minimization, and mitigation of potential impacts. As identified in Appendix C, Mitigation Measures, the agencies developed protective measures for the proposed action consistent with the guiding principles and commitments outlined in the *General Management Plan / General Plan*. Mitigation measures identified in Appendix C would apply to both of the action alternatives, Alternative 2 and Alternative 3. No mitigation measures are proposed for Alternative 1, the No Action Alternative.

Comparison of Alternatives

Table II–3 summarizes and compares the potential environmental consequences associated with each alternative pursuant to NEPA. Analysis of impacts pursuant to CEQA is conducted on Alternative 2, only, and a summary of impacts is included in Appendix A, CEQA Initial Study. Potential environmental consequences are analyzed in more detail in Chapter IV, Environmental Consequences.

Table II-3
Summary of Environmental Consequences

Alternative 1	**Alternative 2** (Preferred Project)	**Alternative 3**
GEOLOGY, GEOLOGIC HAZARDS, AND SOILS		
Alternative 1 would have a continuing local, long-term, moderate, adverse impact associated with geologic hazards and erosion. Hazards from unavoidable seismic ground shaking would continue to affect Requa. Due to the nature of the surficial soils, subsurface bedrock, and topography, soil erosion and slope instability would continue, and potentially accelerate during storm events or earthquake-induced landslides, causing future long-term debilitation of the Requa facility structural integrity.	Alternative 2 would have a local, long-term, minor, beneficial impact. Earthquake ground shaking would continue to affect both the Aubell and Requa areas; however, demolition of damaged, older structures at Requa and replacement with new structures at Aubell would reduce exposure of NPS personnel to seismic hazards. Slopes at Requa would remain unstable, and ongoing downslope creep and landsliding would continue, although removal of Requa infrastructure would not increase slope instability. Installation of the grassy swale at Aubell which slows and filters stormwater runoff prior to discharge into the unnamed tributary of Elk Creek would reduce potential long-term erosion of the tributary stream bed or banks. The beneficial operation-related effects of Alternative 2 would offset the adverse construction-related impacts.	Alternative 3 would have a local, long-term, negligible, beneficial impact. Earthquake ground shaking would continue to affect both the Aubell and Requa areas; however, demolition of damaged, older structures at Requa and replacement with new structures and roadways at Aubell would reduce exposure of NPS personnel to seismic hazards. Slopes at Requa would remain unstable, with ongoing downslope creep and landsliding would continue, and the existing drainage system would continue to be prone to breakage from slope movement or clogging from vegetation and debris. Installation of a stormwater system at Aubell that slows and filters stormwater runoff prior to discharge into the unnamed tributary of Elk Creek would reduce potential long-term erosion of tributary stream bed or banks. The beneficial operation-related effects of Alternative 3 would offset the adverse construction-related impacts and ongoing erosion issues at Requa.
HYDROLOGY, FLOODPLAINS, AND WATER QUALITY		
Alternative 1 would have continuing local, long-term, minor, adverse impacts on water quality. At Requa, potential continued operation of the outdated sewage treatment plant, and untreated discharges of stormwater flows from parking and maintenance areas could result in downstream water quality impacts to Salt Creek, the Klamath River, and the Pacific Ocean. Activities at the existing Aubell area would have minimal water quality impacts due to the adequacy of wastewater treatment and limited use by park personnel.	Impacts related to flooding and water quality under Alternative 2 would be local, long-term, minor, and beneficial. Beneficial operation-related impacts associated with improved water quality and Aubell facility designs to prevent flooding would offset short-term and adverse construction related impacts.	Impacts related to flooding and water quality under Alternative 3 would be local, long-term, negligible, and beneficial. Beneficial operation-related impacts associated with improved water quality and Aubell facility designs to prevent flooding would offset short-term and adverse construction related impacts on water quality.
WETLANDS		
Under Alternative 1, no wetlands would be affected at the Requa or Aubell areas. No impacts on the size, function and value of wetlands would result under Alternative 1.	No wetlands would be affected by project activities at the Requa area under Alternative 2. With implementation of mitigation measures, Alternative 2 would result in local, short- and long-term, negligible, adverse effect on wetlands. Potential construction-related effects on wetlands at the Aubell area under Alternative 2 would include trampling and soil compaction during construction of the grassy swale and potential soil discharge into the creek during grading activities for the swale.	No wetlands would be affected by project activities at the Requa area under Alternative 3. With implementation of mitigation measures, Alternative 3 would result in local, short- and long-term, minor, adverse effects on wetlands. Potential construction-related effects on wetlands at the Aubell area under Alternative 3 would include trampling and soil compaction during construction of the grassy swale and arch culvert, soil discharge into the creek during construction activities for the arch culvert and during grading activities for the swale.

Table II-3 (Continued)
Summary of Environmental Consequences

Alternative 1	**Alternative 2** (Preferred Project)	**Alternative 3**
VEGETATION		
Alternative 1 would have a continuing local, long-term, negligible, adverse impact on vegetation at the Requa area due to ongoing maintenance activities.	Overall, Alternative 2 would result in local, long-term, negligible, beneficial effect on vegetation due to restoration activities in the Requa area, although vegetation growth and full cover would require many years to establish. The long-term beneficial effects of restoration activities at the Requa area would offset the short-term and adverse construction-related effects at Requa and Aubell, and temporary and permanent vegetation removal activities at the Aubell area.	Overall, Alternative 3 would result in local, short- and long-term, minor, adverse effects on vegetation due to temporary construction-related effects and temporary and permanent vegetation removal activities. Although the Requa area would be partially restored, vegetation growth and full cover would require many years to establish and provide habitat for a wide range of wildlife species. Therefore, the adverse effects on vegetation associated with construction activities and new development would offset the beneficial effects of restoration.
WILDLIFE		
Alternative 1 would have a continuing local, long-term, minor, adverse impact on wildlife at the Requa area due to ongoing maintenance activities.	Alternative 2 would have a local, short- and long-term, minor adverse effect on wildlife. Adverse wildlife impacts associated construction-related noise and human disturbance, and new facility development would occur at the Aubell area. Beneficial wildlife impacts would occur at the Requa area associated with restoring the area.	Alternative 3 would have a local, short- and long-term, minor adverse effect on wildlife. Adverse wildlife impacts associated construction-related noise and human disturbance, new facility development would occur at the Aubell area while beneficial wildlife impacts would occur at the Requa area associated with restoration of the area.
SPECIAL-STATUS SPECIES		
Alternative 1 would have a continuing local, long-term, minor, adverse impact on special-status species under Alternative 1. The Requa area would continue to receive regular maintenance and erosion control.	Overall, with implementation of mitigation measures, Alternative 2 would result in a local, short- and long-term, negligible, adverse effects on special-status species. Construction-related activities would have adverse effects on special-status species due to exposure to noise and human disturbance, trampling, and potential discharge of sediments to the northernmost tributary to Elk Creek. Special-status bird species at both Requa and Aubell areas would be temporarily exposed to construction-related noise and human disturbance within a localized area. Adverse special-status species impacts associated with construction-related noise and human disturbance, new facility development would occur at the Aubell area while beneficial impacts would occur at the Requa area associated with restoring area.	Overall, with implementation of mitigation measures, Alternative 3 would result in a local, short- and long-term, negligible, adverse effects on special-status species. Construction-related activities would have adverse effects on special-status species at due to exposure to noise and human disturbance, trampling, and potential discharge of sediments to the northernmost tributary to Elk Creek. Special-status bird species at both the Requa and Aubell areas would be temporarily exposed to construction-related noise and human disturbance within a localized area. Adverse special-status species impacts associated construction-related noise and human disturbance, new facility development would occur at the Aubell area while beneficial impacts would occur at the Requa area associated with restoration of the area.
AIR QUALITY		
Ongoing maintenance activities at the Requa area, including routine building maintenance and erosion control, would intermittently result in continuing local, short-term, negligible, adverse impacts to air quality.	Alternative 2 would have a local, short- and long-term, minor, adverse impact on air quality. Construction activities would have short-term and minor adverse effects on air quality at the Requa and Aubell areas related to use of heavy equipment, dust generation, and construction-related vehicle trips. These adverse air quality impacts would be reduced by the implementation of dust abatement measures	Alternative 3 would have a local, short- and long-term, minor, adverse impact on air quality. Construction activities would have short-term and minor adverse effects on air quality at the Requa and Aubell areas related to use of heavy equipment, dust generation, and construction-related vehicle trips. These adverse air quality impacts would be reduced by the

Table II-3 (Continued)
Summary of Environmental Consequences

Alternative 1	**Alternative 2** (Preferred Project)	**Alternative 3**
	as described in Appendix C, Mitigation Measures. Development of a new maintenance facility at the Aubell area would result in slightly detectable increases in emissions that would be proximate to sensitive receptors. Most park employees reside in Crescent City and the length of employee trips under Alternative 2 would be reduced by traveling to a new facility located at Aubell, reducing emission impacts associated with the addition of operational activities at Aubell. In general, air quality would have a minor improvement due to reduced vehicle trip miles and more efficient building technology.	implementation of dust abatement measures as described in Appendix C, Mitigation Measures. Development of a new maintenance facility at the Aubell area would result in slightly detectable increases in emissions that would be proximate to sensitive receptors. Most park employees reside in Crescent City and the length of employee trips under Alternative 3 would be reduced by traveling to a new facility located at Aubell, reducing commuter emission impacts associated with the addition of operational activities at Aubell. In general, air quality would have a minor improvement due to reduced vehicle trip miles and more efficient building technology.
NATURAL SOUNDSCAPES		
At the Requa area, Alternative 1 would have a local, short-term, minor, adverse impact on natural soundscapes due to ongoing maintenance activities, including routine building maintenance and erosion control. Impacts would be slightly detectable and would not be expected to have an overall effect due to the presence of human-induced sound in the existing environment and the intermittent and brief duration of ongoing maintenance activities.	Alternative 2 would have a local, long-term, minor, adverse impact on the natural soundscape environment. Construction activities and development of the new maintenance facility at the Elk Valley Road site would adversely affect the local natural soundscape environment; however, the beneficial impacts of reduced noise levels at the Requa area would reduce the overall adverse effect under Alternative 2.	Alternative 3 would have a local, long-term, minor, adverse impact on the natural soundscape environment. Construction activities and development of the new maintenance facility at the Midway site would adversely affect the local natural soundscape environment; however, the beneficial impacts of reduced noise levels at the Requa area would reduce the overall adverse effect under Alternative 3.
CULTURAL RESOURCES		
There would be no change in the treatment and management of cultural resources as a result of Alternative 1. Maintenance activities at both the Aubell and Requa areas would not result in a known adverse effect to cultural resources. Therefore, Alternative 1 would have a local, long-term, minor, adverse impact on archeological resources, and no discernible impact on historic and ethnographic resources. Further, any site-specific planning and compliance actions would be accomplished in accordance with stipulations in the park's *Final General Management Plan / General Plan, Environmental Impact Statement / Environmental Impact Report*, and the park would continue to consult with culturally associated American Indian tribes regarding Yurok cultural sites, traditions, and religious practices per the 1996 Memorandum of Understanding.	Alternative 2 would have a local, long-term, moderate, adverse effect on archeological resources due to the potential disturbance of unknown subsurface archeological resources. Implementation of mitigation measures identified in Appendix C would reduce the impact intensity to minor. The decommission and removal of the Requa facility would be considered a local, long-term, minor, adverse impact to historic resources. Actions associated with construction activities at Requa could cause inadvertent adverse effects to the traditional cultural property, resulting in a local, short-term, moderate, adverse impact. However, implementation of cultural resource mitigation measures, as described in Appendix C, Mitigation Measures, would reduce construction-related impacts to ethnographic resources to local, short-term, minor, and adverse. Removal of the Requa facility, with implementation of mitigation measures identified in Appendix C, Mitigation Measures, would return the landscape to the natural conditions much closer to those valued by the Yurok tribe and would result in a local, long-term, minor, beneficial impact.	Alternative 3 would have a local, long-term, moderate, adverse effect on archeological resources due to the potential disturbance of unknown subsurface archeological resources. Implementation of mitigation measures identified in Appendix C would reduce the impact intensity to minor. The decommission and removal of the Requa facility would be considered a local, long-term, minor, adverse impact to historic resources. Actions associated with construction activities at Requa could cause inadvertent adverse effects to the traditional cultural property, resulting in a local, short-term, moderate, adverse impact. However, implementation of cultural resource mitigation measures, as described in Appendix C, Mitigation Measures, would reduce impacts to local, short-term, minor, and adverse. Removal of the Requa facility, with implementation of mitigation measures identified in Appendix C, would return the natural landscape to the conditions valued by the Yurok tribe and would result in a local, long-term, minor, beneficial impact.

Table II-3 (Continued)
Summary of Environmental Consequences

Alternative 1	**Alternative 2** (Preferred Project)	**Alternative 3**
TRANSPORTATION		
Ongoing maintenance activities would result in intermittent and temporary traffic delays and would temporarily impede access to maintenance facilities on Requa Road. This would have a local, short-term, minor, adverse effect on transportation.	Alterative 2 would have a local, long-term, minor, beneficial impact on transportation associated with roadway and intersection improvements. The long-term beneficial impact associated with roadway improvements would offset the short-term, adverse transportation impacts associated with construction activities.	Alterative 3 would have a local, long-term, minor beneficial impact on transportation associated with roadway and intersection improvements. The long-term beneficial impact associated with roadway improvements would offset the short-term, adverse transportation impacts associated with construction activities.
SCENIC RESOURCES		
NPS would conduct ongoing facility maintenance activities at Requa, which would have continuing local, short-term, minor, adverse impacts on scenic resources due to visual intrusions associated with routine building maintenance and erosion control activities.	Alternative 2 would have local, long-term, negligible, beneficial effect on scenic resources due to the proposed restoration of the Requa site. The beneficial impacts of Alternative 2 would offset the short-term, adverse construction impacts, and the permanent adverse scenic impacts associated with the visual transformation of the Elk Valley Road site from a grassy landscape to a developed site and the introduction of new sources of light and glare from the proposed new parking lots and nighttime security lighting at the Elk Valley Road site.	Alternative 3 would have an overall local, long-term, minor, adverse effect on scenic resources associated with the visual intrusions associated with temporary construction activity at the Requa and Aubell areas, and the permanent adverse scenic impacts associated with the visual transformation of the Midway site from a grassy, agrarian landscape to a developed site and introduction of new sources of light and glare from the proposed new parking lots and nighttime security lighting at the Midway site. The adverse effects of the new visual intrusions in the project area would offset the beneficial scenic impacts associated with the partial restoration at Requa.
VISITOR EXPERIENCE		
Alternative 1 would not affect visitor experience in the Requa and Aubell areas, which currently do not include use by park visitors. Visitor experience and use within the parks near the project areas would not be affected by Alternative 1. Alternative 1 would have no impact on visitor use and experience.	Overall, Alternative 2 would have local, short-term, moderate, adverse impact on visitor experience in the project area associated with construction impacts and a local, long-term, negligible visitor experience impact.	Similar to Alternative 2, Alternative 3 would have local, short-term, moderate, adverse impact on visitor experience associated with construction activities and a local, long-term, negligible visitor experience impact.
PARK OPERATIONS AND FACILITIES		
Operation of park maintenance functions at the Requa area and limited existing facilities at the Aubell area would have a continuing local, long-term, moderate, adverse effect on the quality and effectiveness of park operations.	Alternative 2 would have local, long-term, moderate, beneficial impact on the quality and effectiveness of park operations and facilities in the project area. The beneficial impacts associated with the operational efficiencies of the proposed new maintenance facility at the Elk Valley Road site would offset the adverse effects associated with construction activity and location-related operational inefficiencies due to siting the primary maintenance facility in the northern area of the park.	Alternative 3 would have local, long-term, moderate, beneficial impact on the quality and effectiveness of park operations and facilities in the project area. The beneficial impacts associated with the operational efficiencies of the proposed new maintenance facility at the Midway site would offset the adverse effects associated with construction activity, and location-related operational inefficiencies due to siting the primary maintenance facility in the northern area of the park.

Chapter III: Affected Environment

Introduction

This section presents a description of resource topics analyzed in the Redwood Maintenance Facility Relocation Environmental Assessment and Initial Study/Mitigated Negative Declaration and baseline (or existing) conditions under each resource topic.

Geology, Geologic Hazards, and Soils

Geologic Setting

Redwood National and State Parks (the parks) lie within the geologic region of California referred to as the Coast Ranges geomorphic province.[1] Discontinuous northwest-trending mountain ranges, ridges, and intervening valleys composed of ancient seafloor rocks characterize this province. The Franciscan Assemblage which underlies the Requa area is the principal rock complex within the Coast Ranges and is composed of marine sedimentary and volcanic rocks. The Franciscan Assemblage in this region of California consists of Cretaceous-age (approximately 65 to 150 million years old) marine sedimentary and metamorphic rocks that include greywacke, shale, conglomerate, chert (ancient silica-rich ocean deposits), schist, and greenstone (altered volcanic rock). The Aubell area is underlain by younger Quaternary-age (1.6 million years ago to the present) alluvial deposits (California Geological Survey 1973).

Requa is located near the coastline of the Pacific Ocean, on the western slopes of a ridge which separate the Pacific Ocean from northern tributaries of the Klamath River estuary. Elevations at Requa range between approximately 550 feet to 890 feet above mean sea level, with elevations increasing toward the east. Due to Requa's position on a ridge knoll, slopes range from approximately 6:1 (1 foot in elevation change over 6 horizontal feet) at the main facility area to 3:1 at the downslope sewage treatment plant.

The Aubell area is located on the eastern edge of an alluvial plain bordering the foothills of the Siskiyou Mountains. An unnamed tributary of Elk Creek originates east of the Aubell area, and flows northwest bisecting the Midway and Elk Valley Road sites. A second tributary of Elk Creek is located to the south of the Aubell area. The majority of Aubell is located on a gentle western slope, with elevations increasing more rapidly on the eastern edge of the Existing Ranch site. Elevations range between approximately 75 feet to 125 feet above mean sea level.

Soils

Detailed mapping of soils underlying Requa or Aubell have not been conducted. For the most part, soils in Redwood National and State Parks are deep, well-developed soils that are rich in organic matter and nutrients, and are largely derived from rocks of the Franciscan Assemblage. Soils within the parks contain a moderate amount of coarse grained (sand and gravel) materials, but have little cohesion and possess a very low shear strength. The steep terrain, rainy climate,

[1] A geologic province is an area that that possesses similar bedrock, structure, history, and age. California has 11 geologic provinces.

and deep, low cohesive soils make the Requa area very susceptible to erosion, resulting in damage to some structures, as noted in Chapter I, Purpose and Need. In contrast, the gentler slopes at Aubell reduce erosion susceptibility and soils are generally better developed.

Geologic Hazards

Seismicity

The Requa and Aubell areas are located in a seismically active area, as the North American, Pacific, and Gorda tectonic plates intersect approximately 100 miles southwest of the parks near Cape Mendocino. Seismic activity associated with the intersection of these faults has been the source of several large earthquakes in recent history, including nine earthquakes in the 1990's of Richter magnitude 6.0 and above (NPS 1999). Nearby potentially active faults include Sulphur Creek and Lost Man faults, located west and south of Requa and Aubell, respectively, in addition to several unnamed potentially active faults which underlie the Pacific Ocean west of Crescent City (California Geologic Survey 1994).[2] The California Geologic Survey estimates that maximum ground shaking at Requa could reach 0.3g to 0.4g, while ground shaking at Aubell and the surrounding region may reach 0.2g to 0.3g (California Geologic Survey 1999). This difference in ground shaking intensity estimations is due to Requa's closer proximity to the active fault intersection near Cape Mendocino. Ground shaking intensity of 0.2 to 0.4g is similar to that experienced in the San Francisco Bay Area during the 1989 Loma Prieta earthquake, which resulted in widespread structural and infrastructure damage. Although both the Requa and Aubell areas are susceptible to damage from ground shaking, the facilities at Requa are particularly vulnerable to earthquake-induced landslides.

Erosion and Slope Instability

Ground failure is dependent on site slope and geology, as well as the amount of rainfall, excavation, or seismic activities. Steep slopes and downslope creep of surface materials characterize landslide-susceptible areas. Areas of Redwood National and State Parks are susceptible to erosion and slope instability, particularly during periods of high precipitation in steep terrain. Aubell is located on relatively gentle slopes and has not historically been subject to landslides or severe soil erosion. Although surface water flows can cause erosion, an unnamed tributary of Elk Creek traverses the Aubell area in a shallow streambed corridor that is absent of culverts, bridges, slope armoring, or existing erosional features such as cut banks.

Due to the project area's hillside location, subsurface soils, and underlying Franciscan Formation bedrock, the Requa area is susceptible to erosion and is largely located on an unstable slope that is steadily sliding toward the Pacific Ocean. Specifically, areas of the area between buildings 4201, 4108, and 4112 and the Pacific Ocean are underlain by a landslide approximately 1,400 feet wide. Smaller sides to the north of the area are also present. Although sudden, catastrophic landslides have not historically affected Requa, ongoing downslope creep have created cracks in building foundations, severed subsurface utility lines, and damaged roads. Slope movement has historically broken numerous water and sewer lines throughout the area. Due to the extreme susceptibility of the sewer lines to breaks, they have been placed aboveground in some places. Buildings 4300, 4301, and 4304 are considered the most prone to slope instability hazards (Kleinfelder 2000).

[2] A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer.

In some areas, asphalt is up to 6 feet think due to gradual slumping of area roadways and ongoing road repairs.

Hydrology, Floodplains, and Water Quality

Surface Water

Surface waters in Redwood National and State Parks in the vicinity of Requa include freshwater resources consisting of Salt Creek and an associated unnamed tributary that drain the eastern slopes of the ridge upon which the Requa area is located, and the valley that separates Requa from ER-Wern Ridge. Salt Creek joins with Hunter Creek, Mynot Creek, and several other drainages west of Requa at the juncture of three alluvial valleys that divide Mynot Ridge, Teno Ridge, ER-Wern Ridge, and the ridgeline upon which Requa is located prior to flowing into the broader Klamath River estuary. The Klamath River is the second largest river in California, and encompasses a drainage area of 15,000 square miles in California and Oregon. The Klamath River is designated as a unit of both the state and federal Wild and Scenic River systems. Surface water run-off from the Requa facility flow west into the Pacific Ocean.

Freshwater resources in the vicinity of Aubell include tributaries of Elk Creek, which drains the Elk Valley. The Midway and Elk Valley Road sites at Aubell are traversed by an intermittent stream that is one of several unnamed tributaries of Elk Creek. The stream originates west and south of the Existing Ranch and Midway sites, respectively, and flows northwest where it denotes the boundary between the Midway and Elk Valley Road sites. Another unnamed tributary of Elk Creek originates just west of the Existing Ranch site, and merges with Elk Creek approximately 1 mile west of Aubell. Elk Creek eventually discharges into the Crescent City Harbor and into several unnamed lakes immediately east of downtown Crescent City.

Floodplains and Flooding

Neither Requa nor Aubell are not located within or immediately adjacent to a 100-year flood zone, as classified by the Federal Emergency Management Agency (FEMA 1983 and 1986). The 100-year flood flows of the unnamed tributaries of Elk Creek located at the Aubell area do not overflow their existing banks. These areas are not within a tsunami hazard area (Humboldt State University 2001).

Water Quality

The North Coast Regional Water Quality Control Board has not established beneficial uses for Elk Creek. However, established beneficial uses for the Crescent City Harbor include freshwater replenishment, navigation, cold water and marine habitat, wildlife and migratory habitat, boating and other recreation, and habitat for rare, endangered, or threatened species. Near Requa, beneficial uses have not yet been established for Salt Creek. Lower Klamath River beneficial uses include municipal and agricultural supply, groundwater recharge, freshwater replenishment, wildlife habitat, freshwater habitat, warm and cold water habitat, migration and spawning, navigation, and for canoeing, rafting, and other recreation (California Regional Water Quality Control Board 1993).

Overall, water quality in Redwood National and State Parks near the project sites meets or exceeds the water quality objectives established by the North Coast Regional Water Quality Control Board. At Requa, potential inhibitors to water quality include sediments from erosion associated with slope instability, and automobile and maintenance activity-related pollutants. The existing sewage treatment plant at the Requa area is outmoded, no longer meets new State Water Quality Control Board discharge requirements for ocean waters of California.

The existing structure at the Aubell area is serviced by a septic system sized for residential use, and consists of a septic tank and leach field. The system is considered adequate to handle wastewater flows from the existing ranch house and no information exists indicating groundwater quality in the immediate area has been diminished. Aubell is composed of fallow pasture lands and forests, and no animal grazing or farming activities occur. There is no evidence of recent timber harvesting operations.

Wetlands

A description of wetland definitions and applicable regulations are included in Appendix B, Applicable Legislation and Policies.

Requa Area

No wetlands are present at the Requa area.

Aubell Area

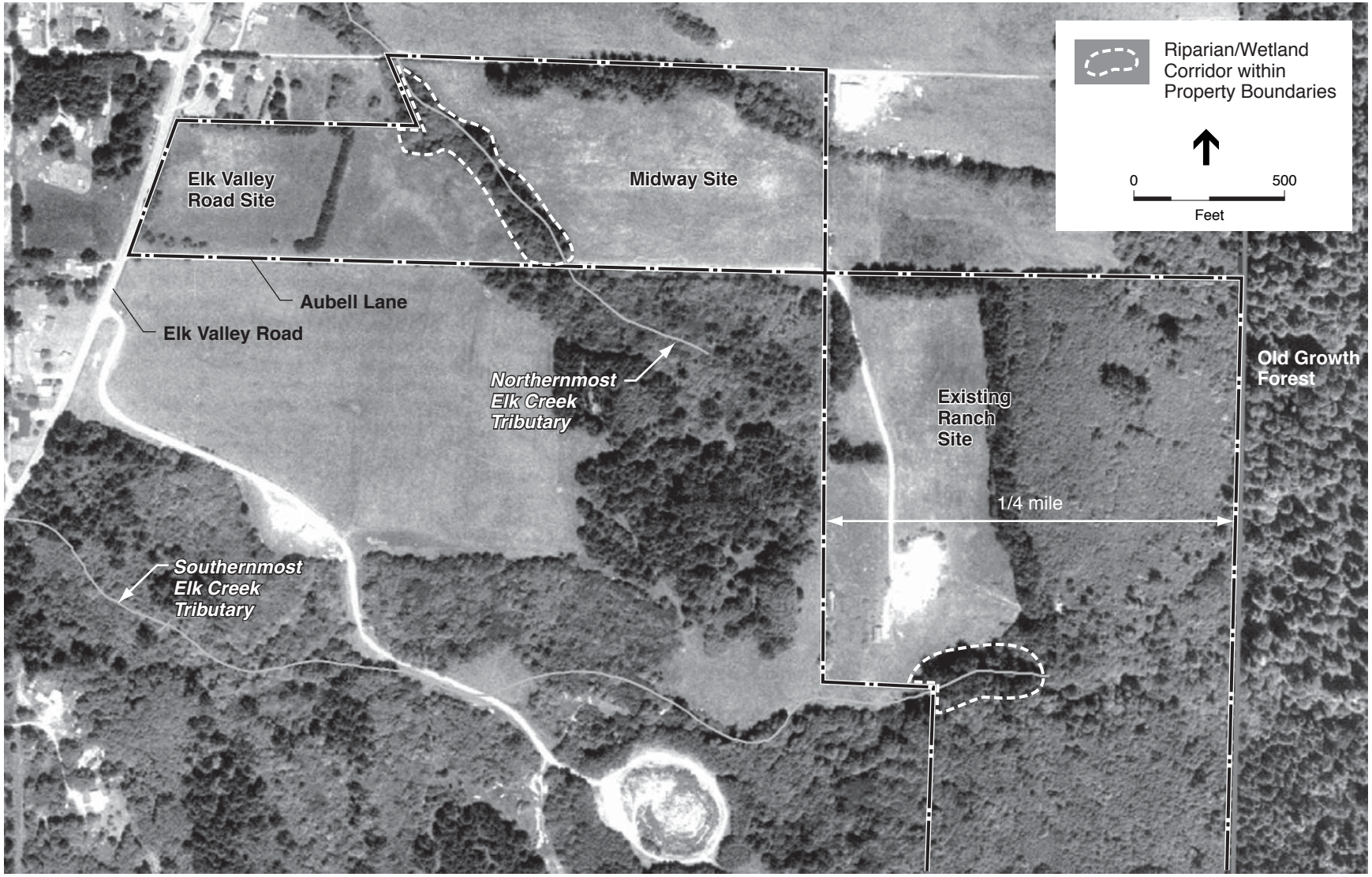
Specific wetland and deepwater classes within the project area are limited to palustrine forested streams and palustrine emergent wetlands at the Aubell area.

The northern portion of the project area supports the upper reach of a palustrine forested broad-leaf deciduous temporarily flooded stream, which traverses the project area northwest to southeast and crosses Aubell Lane (see figure III-1). The southern portion of the project area supports the upper reach of a palustrine forested broad-leaf deciduous seasonally flooded stream that flows from east to west and is located about ¼-mile south of Aubell Lane (see figure III-1). Both palustrine streams support dense riparian vegetation, including red alder (*Alnus rubra*) and Sitka spruce (*Picea sitchensis*). These palustrine streams are tributaries to Elk Creek, which drains to the Pacific Ocean.

An adjacent palustrine emergent wetland occurs along the palustrine stream at Aubell Lane. This wetland supports horsetail (*Equisetum* sp.) and rushes (*Juncus* spp.)

Both streams (excluding riparian vegetation) and the emergent wetland would be regulated as waters of the U.S., and subject to the jurisdictions of the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act and the North Coast Regional Water Quality Control Board under Section 401 of the Clean Water Act. The aquatic streams and their associated riparian vegetation are subject to the jurisdiction of the California Department of Fish and Game under Section 1602 of California Fish and Game Code.

Figure III-1
Sensitive Biological Resources Habitat



SOURCE: National Park Service and ESA

Redwood Maintenance Facility Relocation Environmental Assessment
and Initial Study/Mitigated Negative Declaration
Redwood National and State Parks

DSC / November, 2004 / 167 / 20107

Vegetation

Requa Area

The Requa area supports four primary plant communities, including Sitka spruce forest, red alder forest, coastal bluff scrub, and ornamental landscape vegetation. No old-growth forest occurs at the Requa area. Plant communities within the Requa area are described below.

Sitka spruce forest is fairly dense in some areas and sparse in others at the Requa area. It is a second-growth forest within the project area. Sitka spruce is the dominant conifer species. Associated species include red alder in the understory. Sitka spruce forest is interspersed with red alder forest in upland and wetland areas. Within the Requa area, this integration occurs in upland areas since no wetland areas are present. Sitka spruce forest, along with other types of coniferous forests, eventually replaces red alder forest over time.

Red alder forest occupies the open areas of Sitka spruce forest. Red alder forest can occur in upland areas as well as along streams. Within the Requa area, red alder occurs as an upland community. Red alder is the dominant species in this community. Isolated individual Sitka spruce trees overtop red alder in some areas.

Coastal scrub occurs closer to the ocean, west of the forested communities. Coyote brush (*Baccharis pilularis*) is the dominant species in this community. Coastal bluff scrub is exposed to harsh conditions such as salt-spray and wind.

Ornamental landscape vegetation typically includes a number of native and non-native species that have been planted and are maintained to enhance the character of the built environment. This vegetation type occurs among the facilities at the Requa area. Some landscaped areas are heavily disturbed and support non-native annual plant species that favor disturbed areas.

Aubell Area

Plant communities within the Aubell area include Sitka spruce forest, red alder/Sitka spruce forest, and annual prairie grassland. Old-growth redwood forest occurs more than a quarter mile east of the Elk Valley Road and Midway sites. These communities are described below.

Sitka spruce forest is similar to the community at the Requa area as described above, except this second-growth forest occurs as an upland community and riparian community. Sitka spruce is the dominant species in upland areas, which is primarily east of the existing facility. Within riparian areas above the creeks, Sitka spruce is associated with coast redwood (*Sequoia sempervirens*) and big-leaf maple (*Acer macrophyllum*) in the overstory. The understory consists of many species, including red alder, rhododendrons (*Rhododendron* spp.) and sword fern (*Polystichum munitum*). This riparian community occurs primarily along the upper reach of the southernmost Elk Creek tributary.

Red alder/Sitka spruce riparian forest occurs along the northernmost Elk Creek tributary as well as along a portion of the southernmost Elk Valley tributary as a riparian corridor. Red alder and Sitka spruce are co-dominant in this community.

Prairie grassland is the dominant community at the Aubell area. This community consists of primarily non-native annual wildflowers and grasses. Non-native Himalayan blackberry (*Rubus discolor*) is also scattered throughout the grassland. Few native species, such as California bottlebrush (*Elymus californicus*) and beach strawberry (*Fragaria chiloensis*), are present. The prairie is highly disturbed in some locations as evidenced by the lack of vegetation and exposed bare soil. A small patch of native grass occurs about 500 feet north of the existing buildings in the Existing Ranch site.

Old-growth redwood forest occurs east of second-growth Sitka spruce forest adjacent to the Aubell area (see figure III-1).

Wildlife

As described in the Redwood National and State Parks *Final General Management Plan / General Plan, Environmental Impact Statement / Environmental Impact Report*, animal species diversity in younger-aged forests is lower than in other habitats such as riparian forests (NPS 1999). The mosaic of various habitats provides wildlife diversity.

Moist, cool, forested environments provide habitat for amphibians such as Pacific giant salamander (*Dicamptodon ensatus*), California slender salamander (*Batrachoseps attenuatus*), and northern rough-skinned newt (*Taricha granulose*). Streams at the Aubell area provide habitat for Pacific treefrog (*Hyla regilla*) and the other aforementioned amphibians. Reptiles, such as gopher snakes (*Pituophis melanoleucus*), common garter snakes (*Thamnophis* spp.), and western fence lizard (*Sceloporus occidentalis*) are found in dry upland areas such as in the prairie grassland at the Aubell area, and in open exposed areas at the Requa area.

About 200 birds are known to breed in the Redwood National and State Parks. The Requa and Aubell areas provide habitat for such bird species as chestnut-backed chickadee (*Parus rufescens*) and winter wren (*Troglodytes troglodytes*) within coastal forests. These species may also nest in riparian habitats at the Aubell area. Trees and snags at both areas provide nesting habitat for owls and other raptors. Raptors, such as red-tailed hawk, sharp-shinned hawk, and Cooper's hawk, may breed and nest in riparian habitats at the Aubell area. The Requa area attracts bird species, such as corvids (e.g., crows and ravens), including Stellar's jay (*Cyanocitta stellari*), and European starling (*Sturnus vulgaris*), that are tolerant of humans.

The facilities at the Requa area attract small mammal species, such as raccoon (*Procyon lotor*), that are tolerant of humans. Coastal riparian areas at the Aubell area are important foraging grounds for aerial species, such as *Myotis* bat species, and ground-foraging insectivores, such as shrews (*Sorex* spp.) and moles (*Scapanus* spp.). Mammals such as western harvest mouse, deer mouse, western gray squirrel, and raccoon may also utilize streamside habitats for breeding and foraging at the Aubell area. These species may also forage at the Requa area. Pacific fisher (*Martes pennanti*) may use forest habitats for feeding on small mammals, cover, and reproduction at the Requa and Aubell areas. Mammals, including bobcat (*Lynx rufus*) and gray fox (*Urocyon cinereoargenteus*), may feed on small mammals and birds within both project areas. Mountain lions (*Felis concolor*) have been observed at Requa. Black bear (*Ursus americanus*) may forage in forests within the Aubell area and in the vicinity of the Requa area. The prairie areas described above under vegetation, primarily west of the northernmost tributary to Elk Creek, are inhabited by Roosevelt elk. This species may use the Aubell area second-growth forest for mating, cover, and shade.

Special-status Species

A total of 98 special-status species (49 wildlife species and 49 plant species) have been considered in the evaluation of this project (see Appendix D, Special-status Species). Species evaluated include federally listed threatened or endangered species; species of concern (former federal category 2 species); state-listed threatened, endangered, and rare species; and species that are locally rare or threatened that are known to be or could be present within the planning area. The species list is from the Redwood National and State Parks *Final General Management Plan / General Plan, Environmental Impact Statement / Environmental Impact Report* (NPS 1999). The list was updated by park staff to include recent information regarding occurrence and status, and was cross checked with current data from the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 2004a and 2004b) and California Natural Diversity Database (California Department of Fish and Game 2004).

Special-Status Species at the Requa Area Retained in this Analysis

Of the 98 special-status species evaluated (see Appendix D, Special-status Species), no endangered or threatened species are known or likely to breed within the affected environment of the Requa area. However, the project vicinity, outside the affected environment may provide marginally suitable habitat for northern spotted owl. Raptors, such as bald eagle[3] (*Haliaeetus leucocephalus*) and peregrine falcon[4] (*Falco peregrinus*), may occur as transient species. This area may support nesting habitat for bird species protected under the Migratory Bird Treaty Act. Special-status species bats, including Townsend's big-eared bat, are not known to occur at the Requa area (NPS 2004b). The Requa area does not support suitable habitat for other species listed in Appendix D, Special-status Species.

Special-Status Species at the Aubell Area Retained in this Analysis

Of the 98 special-status species evaluated (see Appendix D, Special-status Species), the Aubell area or its vicinity supports habitat for 8 special-status wildlife species. The remaining special-status wildlife species are not known or likely to occur due to a lack of suitable habitat or the range of the species. No special-status plant species are known or likely to occur at the Aubell area. The high level of disturbance in the prairie grassland may preclude the establishment of special-status plants.

Special-status species that are known to or potentially occur at the Aubell area or its vicinity include:

Federal or State Listed or Candidate Species

- Northern spotted owl
- Coho salmon, Southern Oregon/ Northern California Coast ESU

Federal and/or State Species of Concern

- Del Norte salamander
- Southern torrent (or seep) salamander
- Tailed frog
- Northern red-legged frog
- Foothill yellow-legged frog
- Coastal cutthroat trout

[3] Proposed for delisting by the U.S. Fish and Wildlife Service in 1999.
[4] Delisted by the U.S. Fish and Wildlife Service on August 25, 1999.

The project area includes suitable habitat for these species and northern red-legged frog was observed during an October 7, 2003 site visit. The southern portion of the second-growth Sitka spruce forest west of the existing park facilities supports marginally suitable nesting habitat for northern spotted owl. Northern spotted owl are presumed present within the project area based on the presence of suitable habitat.

Coastal cutthroat trout and coho salmon are known to occur in Elk Creek (downstream of the tributaries to Elk Creek at the Aubell area) (California Department of Fish and Game 2004; NPS 2004a). None of these species are known to occur in the tributaries to Elk Creek in the project area.

Federal and/or state amphibian and reptile species of special concern that potentially occur within streams and streamside habitats at the project area include tailed frog (*Ascaphus truei*), Del Norte salamander (*Plethodon elongatus*), southern torrent (or seep) salamander (*Rhyacotriton variegatus*), yellow-legged frog (*Rana boylii*), and northern red-legged frog (*Rana aurora draytonii*).

Additional data on special-status species is included in the *General Management Plan / General Plan* (NPS 1999), and information on federally listed species is included in *Conservation Strategy for Managing Threatened and Endangered Species in Redwood National and State Parks* (NPS 2003a).

Critical Habitat

The three state parks (Jedediah Smith Redwoods, Del Norte Coast Redwoods, and Prairie Creek Redwoods State Parks) within Redwood National and State Parks contain designated critical habitat for marbled murrelet and coho salmon (NPS 1999). Critical habitat for marbled murrelet does not occur on federal parklands and suitable habitat for the species is located more than a quarter mile from the Elk Valley Road and Midway sites. There is no critical habitat designated for northern spotted owl in Redwood National and State Parks. Critical habitat for the southern Oregon/California coastal populations of coho salmon was proposed by the National Oceanic Atmospheric Administration Fisheries in 1998 for all streams accessible to these species. There are no sections of streams within the parks that are inaccessible by specific structures identified by the National Oceanic Atmospheric Administration Fisheries. Elk Creek (downstream of the Aubell area) supports critical habitat for coho salmon.

Air Quality

Redwood National and State Parks has been designated as a class I airshed pursuant to Part C of the Clean Air Act, as amended (42 United States Code 7401 et al.). The class I designation is given to areas where air quality is cleaner than the national ambient air quality standards. Class I areas have the most stringent regulations for the protection of air quality, permitting the lowest increments of air quality degradation (NPS 1999).

The Requa and Aubell areas are located in the North Coast Air Basin of the California Air Resources Board, which is under the jurisdiction of the North Coast Unified Air Quality Management District. A particle monitor in the parks measures fine particle mass (matter less than 2.5 micrometers in diameter), sulfates, nitrates, and aerosol elemental composition. An ozone and meteorological monitoring site operated in the parks between 1987 and 1995. Other

monitoring stations are in Crescent City and Eureka (NPS 1999). The Crescent City (Northcrest) air monitoring station is located near the intersection of Northcrest Drive and West Harding Avenue, approximately three miles west of the Aubell area. The Crescent City station has monitored PM-10 (particulate matter less than 10 micrometers in diameter) since 1998. No exceedences of the state or federal standard have been recorded in the past three years (2001 through 2003) at the Northcrest station (California Air Resources Board 2004).

Air quality in Redwood National and State Parks is considered good to excellent because of the low population, scarcity of pollutant sources, and prevailing westerly ocean winds. All federal standards are consistently achieved, including those for ozone, carbon monoxide, particulate matter, nitrogen dioxide, sulfur dioxide, and lead. An air pollutant of concern in the parks is PM-10, which is primarily from widespread non-industrial burning and the industrial burning of timber harvest slash piles. In the past, total suspended particulates exceeded air quality standards, but improved technology, better use of materials, and fewer sawmills in the region have resulted in a reduction in suspended particulates (NPS 1999).

The federal Clean Air Act Amendments of 1970 established criteria standards for PM-10 and California has established its own air quality standards that are generally more restrictive than federal standards. The North Coast Air Basin is considered a state non-attainment area for PM-10, but is in attainment with or listed as unclassified for other state and federal air quality standards (California Air Resources Board 2004). Under guidelines set forth by the California Clean Air Act, each air quality district in the state is to achieve and maintain the state ambient air quality standards for PM-10 by the earliest practicable date.

Sensitive air quality receptors include residential areas, day care centers, schools, hospitals, nursing homes, and recreation areas. There are no day care centers, hospitals, or nursing homes in the project vicinity. Park visitors recreate in the parks near the Requa and Aubell areas. Residences are adjacent to the Requa area, and Margaret Keating Elementary School is located approximately 1.5 miles northwest of the Requa area. Similarly, residences are adjacent to the Aubell area, and the Elk Valley Head Start School is located 0.5 miles south and the McCarthy Alternative Education Center is located approximately 1.5 miles west of the Aubell area.

Natural Soundscapes

An important part of NPS mission is the preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sounds considered acceptable varies among NPS units, as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas.

By definition, noise is human-caused sound that is considered to be unpleasant and unwanted. One of the primary concerns with noise in the project area is its effect on special-status species. Noise has been identified as a source of disturbance and thus a potential threat to some listed threatened and endangered species, particularly to northern spotted owls during their respective

breeding seasons (NPS 1999). Noise within the parks results from mechanical sources, such as motor vehicles, generators, and overhead aircraft, and from human activities such as shouting.

Some land uses are considered more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, libraries, churches, hospitals, and parks are generally more sensitive to noise than commercial and industrial land uses. Adjacent residences and park recreational users would be the closest sensitive receptors to the Requa and Aubell areas. Sensitive land uses located near the Requa area include the Klamath River Overlook and picnic area, located approximately 1,000 feet from the Requa area. There are 6 churches are located within 1.5 miles of the Aubell area.

Existing Noise Sources

The ambient natural soundscape environment in the Requa project area is primarily influenced by existing maintenance activities (e.g., carpentry, welding, sign fabrication, equipment repair, etc.), motor vehicle traffic, and occasional aircraft overflights. The natural soundscape environment at the Aubell area is affected by the existing park maintenance and ranger facilities at the area, frequent vehicular traffic on Elk Valley Road, intermittent traffic on Aubell Lane, and occasional aircraft overflights, including private helicopter use by an adjacent neighbor.

Sound and noise levels are measured in units known as decibels (dB). For the purpose of this analysis, sound and noise levels are expressed in dB on the “A”-weighted scale (dBA). This scale most closely approximates the response characteristics of the human ear to low-level sound. Human hearing ranges from the threshold of hearing (0 dBA) to the threshold of pain (140 dBA). Environmental sound or noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability.

Very limited measurements of noise have been taken in the park; those measurements taken were to estimate the noise generated by park maintenance activities in old-growth habitat. Background noise measured by park staff in the forest ranged from 45 to 60 dBAs. Qualitative determinations of noise levels can be made for general locations and noise sources throughout the park. Baseline, or ambient, levels of noise are highest in intensity and most frequent or of long duration in the U.S. Highway 101 corridor and in the vicinity of local communities (i.e., Requa and Crescent City) and their commercial and residential areas. The Aubell area also has elevated ambient noise levels due to its proximity to Crescent City and adjacent residences, frequent vehicular traffic on Elk Valley Road, and existing maintenance activities at the area.

Parks maintenance operations generate noise from staff, vehicles, generators, hand tools such as hammers and power saws, heavy equipment such as backhoes and tractors, and smaller power equipment such as chain saws and weedeaters. Noise from park operations above ambient levels is confined to daylight hours.

Cultural Resources

Prehistoric Context

Redwood National and State Parks lies within the Northwest Coast cultural area, or the Lower Klamath subarea of Northwest California. The earliest archaeological evidence for human occupation in northwest California was identified from a suite of Borax Lake pattern sites located well inland (Fredrickson 1984; Hildebrandt and Hayes 1983). Exhibiting dates between 4500-1500 B.C., these sites consist of several small habitation sites found in mostly upland settings, but also to a lesser extent along lower-elevation river terraces. The artifacts associated with these sites reflect the activities of organized social groups and remain unaltered between environmental zones. Lacking tools used for acorn processing, the sites indicate a mainly foraging based economy.

By 1000 B.C., upland areas shifted from mainly open areas of pine, oaks, and shrubs to a Montane Forest, which reduced the productivity of subsistence resources (West 1989 and 1990). With this ecological shift, a concomitant change in the archeological record is seen, whereby upland residential bases were replaced by task-specific tool kits associated with hunting. Along with this change, the lowland residential bases became more permanently occupied, with increased use of salmon and acorns (Hildebrandt and Jones 2004). Further contributing to the level of permanence to lowland villages was the development of new fishing technologies and storage innovations (Testart 1982). With this shift in technology and settlement patterns, northwest California's prehistory shows a greater similarity to the cultural areas of Oregon, Washington, and British Columbia given the heavy reliance on fish resources.

With the exception of a few early, little known sites, the northern coast was not permanently occupied until about A.D. 500 (Hildebrandt and Jones 2004). By A.D. 1000, sites like the Point St. George site, north of Crescent City (Gould 1966 as cited in Moratto 1984), represented a host of sites that maintained sedentary villages on the coast devoted to marine resources. A subsequent archeological phase, known as the Gunther Pattern exemplified this reliance on maritime resources, as shown by the assemblages of harpoon points, woodworking tools, and stone net sinkers (Moratto 1984).

Archeological Resources

Approximately 30,000 acres (almost 30%) of Redwood National and State Parks lands have been previously surveyed for archeological resources. One hundred and twenty archaeological sites have been recorded in Redwood National and State Parks. The sites identified within Redwood National and State Parks are located inland and are primarily around Redwood Creek Basin, including five sites west of and 34 sites east of Redwood Creek. The 34 prehistoric sites east of Redwood Creek are primarily along ridgetops, which served as trail routes, and on midslope benches near springs and creeks.

Requa Area

A literature and archival review revealed that approximately 10% of the Requa area of potential effect for the proposed action has been previously surveyed. No previously documented archaeological sites were identified within the area of potential effect (Sloan 2004).

An intensive pedestrian survey was conducted of the Requa Facility area of potential effect by Yurok tribal representatives (Sloan 2004). No archaeological sites or artifacts were identified during this survey.

Aubell Area

Previous cultural resource investigations located four archeological sites within one mile of the area of potential effect. The two prehistoric sites, CA-Dno-281 and CA-Dno-1 (an isolate), represent lithic reduction processing that support the interpretation that the area was used as a hunting site. Elk Valley is identified as traditional Tolowa elk hunting (tutne'sme translated 'Elk hunting tract"), acorn gathering, and deer hunting areas associated with the village of Ta'ta'dun (his spelling of To'ot'dun) between Smith River and the redwood hills south of Crescent City (Drucker 1937 as cited in Sloan 2004). The entire Aubell area has been previously surveyed for cultural resources (Roscoe & Eidsness 1986; Haversat & Breschini 1987; Brown 1992).

A pedestrian field survey and test pitting was conducted in the Aubell area of potential effect. Two potential historic properties were identified: the remains of a fence and a berm (Sloan 2004). No other cultural resources or features were located on the surface of the project area or Elk Valley Road. Further examination of the fence remains and berm revealed that neither were determined to be significant archaeological or cultural resources (Sloan 2004).

Historic Resources[5]

Requa Area

The Requa area was previously a radar base known as the Klamath Air Force Station during the height of the Cold War. The initial Klamath Air Force Station was constructed in the 1950's and was associated with the 777th Aircraft Control and Warning Squadron of the 28th Air Division of the Western Air Defense Force. Its role was surveillance and control of air space for the Pacific Coast of northern California and southern Oregon. It was originally concealed under the designation of the "Klamath Weather Station" (Chappell 1985).

The National Register of Historic Places nomination form (Chappell 1985) concluded that the former radar base was found ineligible for the National Register of Historic Places because it had not yet reached the minimum fifty-year milestone. Since the time of its initial recordation, NPS and the Federal Aviation Administration have made modifications to structures and facilities at the former Klamath Air Force Station. Since 1986, building and structural removals by both the Air Force and the Federal Aviation Administration have left only 30 of the original 83 buildings. The most character-defining components of the complex have been removed—specifically, all of the Randome (radar tower buildings) have been removed.

A review of the extant military-era buildings and structures on the Requa site was conducted by Sloan (2004) to re-examine the potential eligibility of the complex. Due to the history of removals and modifications, and the generally impaired integrity to the existing built resources, the military era complex was again found to be ineligible for the National Register of Historic Places (Sloan 2004).

---

[5] For the purposes of this assessment, historic resources refers to any object, building, structure, district, site, area, place, record, or manuscript included in or eligible for inclusion in the National Register of Historic Places (36 CFR 60.4) and the California Register of Historic Resources (Public Resource Code SS5024.1, Title 14 CCR, Section 4850 et seq.).

Aubell Area

The Elk Valley area, which includes the Aubell area, was settled by non-Indians in 1854. Historic uses of the area included livestock and agriculture as early as 1855. Subsequent land use in Elk Valley was predominately for timber extraction and other logging related operations between 1871 and 1920. The existing complex within the Aubell area of potential effect includes two houses, one four-door garage, and a small barn, which are located beyond the area of potential effects for the proposed action. No historic resources were identified during the pedestrian survey within the Aubell area of potential effect (Sloan 2004).

Ethnographic Resources

Requa Area

The lands of the Requa area are a part of the ancestral territory of the Yurok people. The Yurok villages of Re'kwoi (Requa) and T'mri are located within two miles of the Requa facility (Sloan 2004). The Yurok village site of Re'kwoi is regarded as the largest coastal Yurok village in pre-contact times (Sloan 2004). During the course of the cultural resources investigation, consultation with knowledgeable parties (i.e., the Yurok Tribe Culture Committee) was conducted in order to determine if traditional cultural properties are present within the area of potential effects for the proposed action (Sloan 2004). Tribal elders indicated that the project area is associated with myths and songs on the Yurok Creation story. Additional consultation in the community identified the area as a good hunting and gathering area for people from Re'kwoi. Being a high promontory with a panoramic view of the ocean and a view of the mouth of the river, it was also likely used as a place for traditional prayer. Therefore, the Requa site is potentially eligible for inclusion in the National Register of Historic Places as a traditional cultural property (Sloan 2004). A formal evaluation pursuant to the *National Register Criteria for Evaluation* (36 CFR Part 60) has not been conducted.

The Yurok settlement of Tmr'i, located less than one mile northeast of Re'kwoi, a ceremonial rock formation known as O'regos located below the town site at the mouth of the River, and several additional rock formations located along the river that possess Yurok place names and hold significance in Yurok culture and history (Waterman 1920 as cited in Sloan 2004).

Aubell Area

No traditional place of significance was identified during the ethnographic review for the Aubell area (Sloan 2004).

Cultural Landscapes

A Yurok Tribe archeologist surveyed the area of potential effect for cultural landscape resources for the Requa and Aubell areas. Through research, field work, and consultation with the Yurok Tribe, no such resources were identified within the area of potential effect (Sloan 2004).

Museum Collections

Implementation of elements of the action alternatives could result in minimal additions to museum collections, if archeological data recovery is performed as mitigation for direct site impacts. Although such additions would require museum storage space and ongoing collections maintenance and management, the discovery of new artifacts would be uncertain and likely of

limited number. Implementation of the action alternatives would not have a perceptible impact on museum collections.

Transportation

Roadway Network

U.S. Highway 101 is the major north-south transportation route along the west coast of the United States and the primary access route for Redwood National and State Parks. The highway intersects with Requa Road approximately two miles north of the Klamath River. U.S. Highway 101 also intersects with Elk Valley Road, which leads to the Aubell area, at the southern edge of Crescent City, approximately 20 miles north of Requa Road.

Requa Area

Requa Road is a Del Norte County four-mile, two-lane roadway with a steep grade. The roadway is used primarily for access to the small community of Requa, and recreational activities such as hiking, picnicking, and whale watching. Requa Road provides access to the existing NPS maintenance facilities at the Requa area. The posted speed limit is 30 miles per hour. The approximate daily average traffic is 100 vehicles. Requa Road provides access to several trailheads including: Coastal Trail, Klamath Overlook Trail, and Hidden Beach.

Aubell Area

Elk Valley Road is a paved, two-lane, undivided roadway. Agricultural, residential, and recreational are the primary uses along the roadway. There are recreational bicycle and pedestrian uses on Elk Valley Road. The roadway is posted at 35 to 45 miles per hour.

Aubell Lane is a paved, single-lane roadway located off Elk Valley Road. The roadway is used primarily for access to the existing Aubell area maintenance facilities. The roadway is posted at 15 miles per hour. The approximate daily average traffic is 50 vehicles and is limited to park administrative traffic.

Scenic Resources

Redwood National and State Parks are located in a regional setting that includes unique scenic resources, including the world's tallest trees. The visual resources within this region are a source of inspiration for park visitors.

Requa is a topographically diverse area located on a scenic bluff overlooking the Pacific Ocean and the Klamath River Estuary. As an active maintenance area, the Requa area is visually characterized by developed features, including buildings, roadways, water

View of the Requa area.

storage tanks, telecommunications facilities, and overhead utility lines. The majority of the area is vegetated providing natural visual screening of some developed features. The western part of the area provides views of the Pacific Ocean. Night skies are somewhat obstructed by security lighting and lighting associated with housing functions. The Klamath River overlook is located just southwest of the Requa area and provides broad views of the Pacific Ocean, rocky shoreline, and the Klamath River mouth.

The Aubell area is visually characterized by grasslands, which provides visual contrast and variety to the adjacent forested hillsides. The area is largely flat, with limited viewsheds from the area to the surrounding landscape. The L-shaped parcel is bisected by a tributary of Elk Creek, which introduces water as a visual element of the area and supports a forested riparian corridor that screens the Elk Valley Road site from the Midway site. The hardscape surface of Aubell Lane and Elk Valley Road form a clear demarcation of the property edge.

Grasslands of the Aubell area.

The Existing Ranch site is characterized by grassy swales with an eastern and southern and western forested perimeter. Developed features are a dominant visual feature of the area, including two houses, a garage, and a small barn. The facilities formerly operated as a small ranch, and contribute to the agrarian visual character of the area.

Small barn within the Aubell area.

Neither the Requa area nor the Aubell area is visible from a state scenic highway.

Visitor Experience

Both the Requa area and the Aubell area are park administrative facilities that do not provide visitor services and are not formally utilized by park visitors. The Klamath River Overlook is located near the Requa area, and provides a picnic area and outstanding opportunities to view the Pacific Ocean and Klamath River Estuary. A trailhead providing access to the Coastal Trail is also located at the Klamath River Overlook. Park visitors hike and recreate in Jedediah Smith Redwoods State Park near the Aubell area.

Park Operations and Facilities

Requa Area

The Requa facility is the primary maintenance site for Redwood National and State Parks. The Requa area includes approximately 40 buildings comprising about 110,000 square feet of building area. Approximately 38,000 square feet of building space is used to support park maintenance operations, including maintenance offices, carpenter shop, roads and trails shop, radio shop, electric shop, plumbing shop, sign shop, and storage facilities. The Requa area also hosts 4 duplex structures and 1 dormitory that provide housing for up to 25 people. Verizon and Cal North each have a telecommunications facility and related outbuilding at Requa.

The Requa area was formerly a United States Air Force radar base constructed during the Cold War. All of the Requa buildings are military era structures that have been adaptively reused for their current functions.

The Requa area is geologically unstable; however, and ongoing landslides have made the area unsuitable for continued use as a maintenance facility. The geologic instability of the area has resulted in structural damage to the buildings. The buildings themselves are in moderate to poor condition given their age and the geologically unstable nature of the area. The configuration of the buildings in the area is poorly suited for their current uses, and impedes operational efficiencies in maintenance work. The existing sewage treatment plant at the Requa area is outmoded, and no longer meets new State Water Quality Control Board discharge requirements for ocean waters of California.

The existing Requa water supply system provides service to Requa facilities, as well as five private homes connected to the NPS water system. The water system consists of a well located in the bottomlands at Salt Creek, near U.S. Highway 101, a 4-inch transmission line that delivers water to two 75,000-gallon water storage tanks, a hydropneumatic booster station, and a distribution system located at Requa.

Aubell Area

The State of California owns the Aubell area and prior to its purchase, the Aubell area was used as a private residence and ranch. Existing facilities are located approximately ½-mile from Elk Valley Road accessed by Aubell Lane, a paved, single-lane roadway. The Aubell area includes two houses, a four-door garage, and a small barn. These facilities are currently used for park maintenance and ranger operations, although the majority of the area is grasslands and forest.

Aubell is currently served by an on-site surface water collection system of limited capacity, comprising an infiltration gallery collecting water from a natural spring. The water system filters the spring water through a slow sand filter, a chlorinator, and into a 1,200 gallon redwood water storage tank. Wastewater is treated in a residential-sized septic system and leach field. Single-phase overhead electric lines service the existing buildings. The power lines originate from service on Elk Valley Road. The site is served by a T1 telephone line.

Chapter IV: Environmental Consequences

Introduction

The Redwood Maintenance Facility Relocation Environmental Assessment and Initial Study/Mitigated Negative Declaration provide environmental compliance pursuant to the National Environmental Policy Act (NEPA) for the National Park Service (NPS) and the California Environmental Quality Act (CEQA) for the California Department of Parks and Recreation (CDPR). NPS actions analyzed in the environmental assessment pursuant to NEPA include the proposed restoration of the Requa area and the relocation of park maintenance facilities to the Aubell area. CDPR actions analyzed in the initial study/mitigated negative declaration include the development of park maintenance facilities at the Aubell area, which is CDPR-owned land. While NEPA requirements for an environmental assessment require development and analysis of a range of alternatives as presented in the environmental assessment, CEQA requirements for an initial study/mitigated negative declaration require development and analysis of the proposed project only. In the following sections, NEPA analyses are presented for Alternatives 1, 2, and 3 and CEQA analyses are presented for Alternative 2 (Preferred Project). NEPA and CEQA analyses are integrated in the discussion of environmental impacts for Alternative 2. The CEQA Initial Study is included in Appendix A, which also includes the CEQA impact thresholds.

Following this introduction, the chapter presents the methodologies used in the environmental impact analysis. The impact analyses sections are organized by alternative. Environmental impacts are summarized in table II-3: Summary of Environmental Consequences, located at the end of Chapter II, Alternatives.

Methodology

NEPA Analysis

The NEPA analysis of environmental impacts considers the context, duration, intensity, and type of impact, as defined below.

Context

The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would generally be those that occur within the immediate vicinity of the Requa or Aubell area. Regional impacts would be impacts affecting the larger Klamath or Crescent City area.

Duration

The duration of the impact considers whether the impact would occur in the short term or the long term. Appendix E, NEPA Impact Threshold Definitions, provides a description of the impact duration by resource topic.

Intensity

The intensity of the impact considers whether the effect would be negligible, minor, moderate, or major. Appendix E, NEPA Impact Threshold Definitions, provides a description of the impact intensity definitions by resource topic.

Type of Impact

Impacts were evaluated in terms of whether they would be beneficial or adverse. Beneficial impacts would improve resource conditions. Adverse impacts would deplete or negatively alter resources.

CEQA Analysis

CEQA analyses are integrated in this chapter with the NEPA analyses; however, only Alternative 2 (Preferred Project), was analyzed pursuant to CEQA. The Initial Study is included in Appendix A. The initial study checklist provides the criteria that define significant effects on the environment (consistent with Public Resources Code §21082.2 and CEQA Guidelines §15064). These thresholds of significance provide the basis for the conclusions as to whether impacts will be significant.

Cumulative Impacts

A cumulative impact is described in regulations developed by the Council on Environmental Quality, Regulation 1508.7, as follows. CEQA also requires analysis of cumulative impacts pursuant to Section 15355 of the CEQA Guidelines.

> A "cumulative impact" 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 what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Past, present, and reasonably foreseeable actions are evaluated in conjunction with the impacts of an alternative to determine if they have any additive effects on a particular resource. Because most of the reasonably foreseeable actions are in the early planning stages, the evaluation of cumulative impacts was based on a general description of the projects. Appendix F, Past, Present, and Reasonably Foreseeable Actions, contains the list of actions included in the cumulative impacts analysis. The projects include:

- Elk Valley Rancheria Martin Ranch Project – Bureau of Indian Affairs and Elk Valley Rancheria
- Solid Waste Transfer Station – Del Norte County
- Elk Valley Road Improvements – Del Norte County
- Redwood National and State Parks Trail Plan – NPS and CDPR
- Requa Radar Station Underground Storage Tank Environmental Restoration – U.S. Army Corps of Engineers

Impairment

Pursuant to the 1916 Organic Act, NPS has a management responsibility "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." As a result, NPS cannot take an action that would "impair" the resources of Redwood National and State Parks (the parks). NPS *Management Policies 2001* (NPS 2000) provide guidance on addressing impairment.

Director's Order #12 (NPS 2001) requires that impairment be addressed in all environmental assessments and draft and final environmental impact statements, as well as in the decision documents (Finding of No Significant Impact, Record of Decision). In this document, impairment is addressed in the conclusion section of each impact topic under each alternative.

NPS does not make impairment determinations for transportation, visitor experience, or park operations and facilities unless the impact is resource-based. Impairment relates to park values and purpose. Pursuant to the 1916 Organic Act, one cannot impair visitor enjoyment or park operations in the same way park resources or values could be impaired.

Analysis of Environmental Consequences

Alternative 1

Geology, Geologic Hazards, and Soils

Analysis

Effects of Seismic Safety. Requa and Aubell would remain similar to existing conditions. The project area would continue to be susceptible to earthquake ground shaking, particularly from the seismically active intersection of the North America, Pacific, and Gorda tectonic plates southwest of Redwood National and State Parks. This condition would continue under the No Action Alternative. Although the expected ground motions would be low compared to those in areas closer to the causative faults, the predicted 0.2 g to 0.4 g peak ground acceleration possible during a substantial earthquake would be felt by most people and would cause varying levels of damage. The existing structures at Requa were largely constructed during the 1950's and do not meet current California seismic building codes. The integrity of some structural foundations have already been compromised by slope instability, such as the Maintenance Office (Building 4200) which visibly leans towards the Pacific Ocean. Other immediately endangered structures include Buildings 4300, 4301, and 4304. Existing structures, particularly those with faulty foundations, could sustain damage as a result of ground shaking. Earthquake-induced landslides could also damage facilities at Requa by accelerating existing slope instability and associated damage to roadways, subsurface utilities, and structures. During an earthquake, Requa structures could suffer substantial damage.

Under the No Action Alternative, NPS would continue to maintain and repair the Requa facility when needed, although structures damaged by earthquakes would likely not be replaced due to slope instability constraints. Earthquakes are unavoidable, and would continue to expose NPS employees to potential hazards from ground shaking. Alternative 1 would result in a continuing local, long-term, moderate, adverse impact.

Effects on Erosion and Slope Stability. Soils at Requa are highly susceptible to erosion and slope instability due to their composition, site topography, high precipitation rates in the North Coast region, and past history of downslope creep. NPS would continue to perform maintenance, such as asphalt patching to repair, slumps, holes, or cracks in the road surface, replacement of damaged underground utility infrastructure, and clearing of sediment and vegetation debris at culvert inlets to the stormwater drainage system. Operations and use of the Requa facility would remain similar to existing conditions.

The No Action Alternative would continue to expose facilities at Requa to slope instability resulting in a local, long-term, moderate, adverse impact. Damage to building foundations, paved roadways, and underground utility lines would continue to occur as the majority of the facility is located upon slopes which persist in sliding towards the Pacific Ocean. Specifically, areas between Buildings 4201, 4108, and 4112 and the Pacific Ocean are underlain by a landslide, the size of which could increase in the future to affect other structures. Damage to the Requa facilities could render buildings unfit for human occupancy, or necessitate the need for relocation of underground utility lines or the area's septic system. Additionally, undetected damage or clogging of vegetation and debris in the stormdrain system during periods of high precipitation could saturate regions of the hillside and intensify slope instability.

Summary of Alternative 1 Impacts. Alternative 1 would have a continuing local, long-term, moderate, adverse impact associated with geologic hazards and erosion. Hazards from unavoidable seismic ground shaking would continue to affect Requa. Due to the nature of the surficial soils, subsurface bedrock, and topography, soil erosion and slope instability would continue, and potentially accelerate during storm events or earthquake-induced landslides, causing future long-term debilitation of the Requa facility structural integrity.

Cumulative Impacts

The past, present, and reasonably foreseeable actions propose substantial new developments within 2 miles of the Aubell area, including the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, and Elk Valley Road Improvements. The U.S. Army Corps of Engineers is implementing remediation activities at Requa. In addition, a comprehensive trail plan is proposed for the parks, including a proposed trailhead and parking area at the Aubell area. Construction of these facilities could create short-term, minor, adverse impacts to soils due to grading or cut and fill operations. However, development and implementation of control measures to protect soils from erosion and prevent sediment and hazardous materials from entering water bodies, consistent with federal, state, and local standards and requirements, would reduce potential construction-related soil erosion. The Elk Valley Rancheria Martin Ranch Project also would increase exposure of people to seismic hazards through construction of a casino, hotel, and conference center in a seismically active area, although compliance with seismic and building code standards would reduce potential long-term adverse impacts. Overall, the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, adverse impact on geology, geologic hazards, and soils.

Alternative 1 in combination with the past, present, and reasonably foreseeable actions would have a regional, long-term, moderate, adverse impact on geology, geologic hazards, and soils due to an increased exposure of individuals and property to seismic hazards, and continued landslide activity at Requa. Alternative 1 would contribute to the overall cumulative impact more than other projects.

Impairment

Alternative 1 would have a local, long-term, moderate, adverse impact associated with geologic hazards and soil erosion, slope instability, and soil loss. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Redwoods National Park; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents, there would be no impairment of park resources or values.

Hydrology, Floodplains, and Water Quality

Analysis

Effects of Flooding. The existing Requa facility is not located within a 100-year floodplain, nor does stormwater discharge from the facility contribute to downstream flooding. Continued operation of the Requa facility would therefore have no effect on flooding. The ranch house at Aubell currently used by park personnel is similarly located outside the 100-year floodplains of the nearby unnamed tributaries to Elk Creek. There would be no change in the ability of the unnamed tributary floodplains to convey floodwaters or to their functions or values.

Effects on Water Quality. Water quality concerns associated with continued operation of the Requa facility are related to potential continued operation of the substandard sewage treatment plant, automobile or maintenance-related pollutants, and potential soil erosion associated with slope instability resulting in a continuing local, long-term, minor, adverse impact. The sewage treatment plant would continue to not meet State and Regional Water Quality Control Board standards, and would continue to be located on an active landslide area. Sewer system lines have broken in the past with such frequency due to slide activity that NPS has installed above-ground sewer piping in some areas. Releases of sewage due to pipe breakage and potential future loss of untreated sewage flows due to landslide activity would adversely affect groundwater quality and water quality in the downslope Pacific Ocean. Soil erosion associated with landslides would also continue to occur, and stormwater flows from parking and maintenance areas would continue to flow directly into the Pacific Ocean under Alternative 1. At Aubell, the existing septic tank would continue to adequately handle flows from the ranch house used by park personnel. Although stormwater run-off from the Aubell parking area would continue to be a potential water quality concern, the limited number of vehicles that utilize this facility and lack of impervious surfaces minimize potential water quality impacts to the unnamed tributaries of Elk Creek.

Summary of Alternative 1 Impacts. Alternative 1 would have continuing local, long-term, minor, adverse impacts on water quality. At Requa, potential continued operation of the outdated sewage treatment plant, and untreated discharges of stormwater flows from parking and maintenance areas could result in downstream water quality impacts to Salt Creek, the Klamath River, and the Pacific Ocean. Activities at the existing Aubell area would have minimal water quality impacts due to the adequacy of wastewater treatment and limited use by park personnel.

Cumulative Impacts

The past, present, and reasonably foreseeable actions propose substantial new developments within 2 miles of the Aubell area, including the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, and Elk Valley Road Improvements. The U.S. Army Corps of Engineers is

implementing remediation activities at Requa. In addition, a comprehensive trail plan is proposed for the parks, which would include development of a trailhead at the Aubell area near the existing built facilities. Stormwater flows from these areas would not impact the Requa area, and potential flooding impacts are therefore not relevant. Similarly, these areas are almost entirely downstream of the Aubell area structures, with the exception of park trails, and stormwater runoff from these areas are therefore inconsequential to potential flooding of Aubell. Construction of the Elk Valley Rancheria Martin Ranch Project or Solid Waste Transfer Station could create long-term adverse impacts to water quality associated with increased stormwater runoff rates and volumes, and increases in stormwater pollutants. Overall, the past, present, and reasonably foreseeable actions would have a regional, long-term, moderate, adverse impact to hydrology, flooding, and water quality.

Alternative 1 in combination with the past, present, and reasonably foreseeable actions would have a regional, long-term, moderate, adverse impact on hydrology, flooding, and water quality due to increased pollutant concentrations in stormwater and potential continued operation of the existing sewage treatment plant at Requa. Alternative 1 would contribute a small increment the overall cumulative impact.

Impairment

Alternative 1 would have a minor and adverse impact to hydrology, floodplains, and water quality and there would be no impairment of park resources or values.

Wetlands

Analysis

Effects on Wetlands. The Requa area does not support wetlands. The size, function and value of wetlands (including the northernmost and southernmost tributaries to Elk Creek) would remain the same at the Aubell area. No wetlands would be affected under Alternative 1.

Summary of Alternative 1 Impacts. Under Alternative 1, no wetlands would be affected at the Requa or Aubell areas. No impacts on the size, function and value of wetlands would result under Alternative 1.

Cumulative Impacts

The past, present, and reasonably foreseeable actions propose substantial new developments within 2 miles of the Aubell area, including the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, and Elk Valley Road Improvements. The U.S. Army Corps of Engineers is implementing remediation activities at Requa. NPS and CDPR are developing a comprehensive trail plan for Redwood National and State Parks consistent with the guidance in the parks' *General Management Plan/General Plan*. The trail plan would be consistent with the desired resource conditions and visitor experiences of the appropriate management zones identified in the parks' *General Management Plan/General Plan*. The trail plan would include development of a trailhead at the Aubell area near the existing built facilities; as proposed, the trailhead would not be proximate to Aubell area wetlands. Any new trail development would not likely result in substantial adverse effects on wetlands.

Overall, the past, present, and reasonably foreseeable actions would have a regional, short- and long-term, minor, adverse impact on wetlands. Alternative 1 in combination with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on wetlands. Alternative 1 would contribute a small increment to the overall adverse cumulative impact.

Impairment

Alternative 1 would result in no impacts on wetlands and there would be no impairment of park resources or values.

Vegetation

Analysis

Effects on Vegetation. Under Alternative 1, the Requa area would continue to receive ongoing maintenance and erosion control. Alternative 1 would have local, long-term, negligible, adverse impact on vegetation at the Requa area. Under Alternative 1, ongoing maintenance activities would continue and would result in some disturbance to vegetation in the area. Vegetation at the Aubell area would not be affected under Alternative 1.

Summary of Alternative 1 Impacts. Alternative 1 would have a continuing local, long-term, negligible, adverse impact on vegetation at the Requa area due to ongoing maintenance activities.

Cumulative Impacts

The past, present, and reasonably foreseeable actions propose substantial new developments within 2 miles of the Aubell area, including the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, and Elk Valley Road Improvements. The U.S. Army Corps of Engineers is implementing remediation activities at Requa. NPS and CDPR are developing a comprehensive trail plan for Redwood National and State Parks consistent with the guidance in the parks' *General Management Plan/General Plan*. The trail plan would be consistent with the desired resource conditions and visitor experiences of the appropriate management zones identified in the parks' *General Management Plan/General Plan*. The trail plan includes the development of a trailhead at the Aubell area near the existing built facilities. Any new trail development would not likely result in substantial adverse effects on vegetation.

Overall, the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, adverse impact on vegetation. Alternative 1 would contribute a small increment to the overall adverse cumulative impact. Alternative 1 in combination with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on vegetation.

Impairment

Alternative 1 would result in negligible and adverse impacts on vegetation and there would be no impairment of park resources or values.

Wildlife

Analysis

Effects on Wildlife. Under Alternative 1, the Requa area would continue to receive regular maintenance and erosion control as necessary. Alternative 1 would have continuing local, long-term, minor, adverse impact on wildlife at the Requa area. Noise from routine maintenance and use of the facilities at the Requa area would continue as an existing condition. The area would continue to support common wildlife species, such as stellar's jay and raccoon, that are tolerant to humans.

No wildlife or its habitat would be adversely affected at the Aubell area. Wildlife, such as Roosevelt elk and common birds, would continue to use the prairie grassland. There would be no substantial adverse effects on wildlife beyond normal activities under Alternative 1 at the Aubell area.

Summary of Alternative 1 Impacts. Alternative 1 would have a continuing local, long-term, minor, adverse impact on wildlife at the Requa area due to ongoing maintenance activities.

Cumulative Impacts

The past, present, and reasonably foreseeable actions propose substantial new developments within 2 miles of the Aubell area, including the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, and Elk Valley Road Improvements. The U.S. Army Corps of Engineers is implementing remediation activities at Requa. NPS and CDPR are developing a comprehensive trail plan for Redwood National and State Parks consistent with the guidance in the parks' *General Management Plan/General Plan*. The trail plan would be consistent with the desired resource conditions and visitor experiences of the appropriate management zones identified in the parks' *General Management Plan/General Plan*. The trail plan would include development of a trailhead at the Aubell area near the existing built facilities. Any new trail development would not likely result in substantial adverse effects on wildlife.

Overall, the past, present, and reasonably foreseeable actions would have a regional, short- and long-term, minor, adverse impact on wildlife. Alternative 1 would contribute a small increment to the overall adverse cumulative impact. Alternative 1 in combination with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on wildlife.

Impairment

Alternative 1 would result in negligible and adverse impacts on wildlife and there would be no impairment of park resources or values.

Special-status Species

Analysis

Effects on Special-status Species. Under Alternative 1, the Requa area would continue to receive regular maintenance and erosion control as necessary. Alternative 1 would result in a continuing local, long-term, minor, adverse impact on special-status wildlife species at the Requa area. Noise from routine maintenance and use of the facilities at the Requa area would continue as an existing condition. The area would continue to support special-status species, such as birds protected by the Migratory Bird Treaty Act, during the nesting season.

Under Alternative 1, the use of the Aubell area would be similar to existing conditions during normal work and maintenance days. There would be no adverse effects on special-status terrestrial and aquatic animals, including northern spotted owl and salmonid species beyond normal area activities. Except as noted above for noise associated with normal maintenance activities, there would be no adverse effects on special-status wildlife species from noise greater than the existing ambient levels.

Summary of Alternative 1 Impacts. Alternative 1 would have a continuing local, long-term, minor, adverse impact on special-status species under Alternative 1. The Requa area would continue to receive regular maintenance and erosion control.

Cumulative Impacts

The past, present, and reasonably foreseeable actions propose substantial new developments within 2 miles of the Aubell area, including the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, and Elk Valley Road Improvements. The U.S. Army Corps of Engineers is implementing remediation activities at Requa. NPS and CDPR are developing a comprehensive trail plan for Redwood National and State Parks consistent with the guidance in the parks' *General Management Plan/General Plan*. The trail plan would be consistent with the desired resource conditions and visitor experiences of the appropriate management zones identified in the parks' *General Management Plan/General Plan*. The trail plan would include development of a trailhead at the Aubell area near the existing built facilities, likely within a quarter-mile of old-growth redwood forest, which is suitable habitat for marbled murrelet and northern spotted owl. Placing a new trailhead within a quarter-mile of old-growth redwood forest could adversely affect special-status species habitat.

Overall, the past, present, and reasonably foreseeable actions would have a regional, short- and long-term, negligible, adverse impact on special-status species. Alternative 1 would contribute a small increment to the overall adverse cumulative impact. Alternative 1 in combination with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on special-status wildlife species. The proposed adverse effects to special-status species habitat at the Requa site and associated with the trail plan would contribute to adverse impacts to special-status species.

Impairment

Alternative 1 would result in minor and adverse impacts on special-status species and there would be no impairment of park resources or values.

Air Quality

Analysis

Effects on Air Quality. Under Alternative 1, the Requa and Aubell areas would receive ongoing use for operations and maintenance purposes. Such use would include ongoing equipment operation and maintenance vehicle traffic. Continued operations at the Requa and Aubell areas would result in emissions of various air pollutants (primarily carbon monoxide, nitrogen oxides, respirable particulate matter, diesel particulate, and hydrocarbons). Maintenance equipment operation and vehicle trips and resultant air emissions would not be expected to substantially differ from air emissions currently generated by operations at Requa and Aubell.

Alternative 1 would result in continuing local, short-term, negligible, adverse impacts on air quality due to ongoing maintenance activities at the Requa area, including routine building maintenance and erosion control. Ongoing maintenance activities would intermittently affect pollutant concentrations in the vicinity of the Requa area (primarily fugitive dust from maintenance activities, earth-moving activities, and vehicle travel over paved surfaces laden with earthen materials). Dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. These emissions could adversely affect local air quality, but impacts would not be detectable, would not affect the Class I airshed designation of the park, and would have no discernible effect. Air quality impacts associated with ongoing maintenance activities would not effect nearby sensitive receptors, including residences, park visitors, or the Margaret Keating Elementary School located 1.5 miles northwest of the Requa area.

Summary of Alternative 1 Impacts. Ongoing maintenance activities at the Requa area, including routine building maintenance and erosion control, would intermittently result in continuing local, short-term, negligible, adverse impacts to air quality.

Cumulative Impacts

Proposed construction of the past, present, and reasonably foreseeable actions in the Requa and Crescent City areas, including Requa remediation, the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, Elk Valley Road Improvements, and implementation of the park's trail plan would have local, short-term, moderate, adverse effects on air quality. The size and scale of the construction projects would have a clearly detectable effect on local air quality, including emissions related to earth moving activities, equipment and material haul trips, and commute trips by construction works.

Ongoing operation of the past, present, and reasonably foreseeable actions would result in new development and new vehicle trips in the vicinity of Crescent City. Operation of the proposed solid waste transfer station would create objectionable odors in the vicinity of the station. The Martin Ranch Project would include development of 1,120 new parking spaces to support the resort facilities, and Del Norte County estimates the solid waste transfer station would generate approximately 220 vehicle trips on an average workday. Emissions from the proposed new developments (including related vehicle trips) would be detectable, and would create objectionable odors in the vicinity of the transfer station. Overall, the past, present, and reasonably foreseeable actions would have a local, long-term, moderate, adverse effect on air quality.

Alternative 1 in combination with the past, present, and reasonably foreseeable actions would result in a local, long-term, moderate, adverse impact on air quality. Alternative 1 would contribute a small increment to the emissions created by the past, present, and reasonably foreseeable actions.

Impairment

Alternative 1 would result in a negligible and adverse impact to air quality and here would be no impairment of park resources or values.

Natural Soundscapes

Analysis

Effects on Natural Soundscapes. Existing noise sources would continue to be prevalent at levels similar to those currently experienced at the Requa and Aubell areas. Sources of noise at the Requa area would continue to include maintenance operations, such as carpentry, welding, sign building, equipment operation and repair, maintenance vehicles, and the voices and activities of NPS staff. Requa activities would continue to be audible by adjacent residences and park visitors at the Klamath River overlook. At the Aubell area, limited park maintenance and ranger operations would continue to be sources of noise in the area, including vehicle operation, equipment maintenance and repair, and the voices and activities of CDPR staff. Noise from the Aubell area would continue to be audible at adjacent residences.

At the Requa area, Alternative 1 would have a local, short-term, minor, adverse impact on natural soundscapes due to ongoing maintenance activities, including routine building maintenance and erosion control. Ongoing maintenance activities would briefly and intermittently affect noise levels in the vicinity of the project predominantly due to the operation of heavy equipment. Ongoing maintenance-related noise episodes could adversely affect park resources and visitor experience in the project area; however, impacts would be slightly detectable and would not be expected to have an overall effect due to the presence of human-induced sound in the existing environment and the intermittent and brief duration of ongoing maintenance activities.

Summary of Alternative 1 Impacts. At the Requa area, Alternative 1 would have a local, short-term, minor, adverse impact on natural soundscapes due to ongoing maintenance activities, including routine building maintenance and erosion control. Impacts would be slightly detectable and would not be expected to have an overall effect due to the presence of human-induced sound in the existing environment and the intermittent and brief duration of ongoing maintenance activities.

Cumulative Impacts

Proposed past, present, and reasonably foreseeable actions include the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, Elk Valley Road Improvements, Requa remediation, and implementation of the parks' trail plan. The size and scale of the construction projects would result in short-term, readily detectable effects on the local soundscape, including noise associated with construction equipment operation, earth moving activities, and construction truck trips. Overall, these projects would have regional, short-term, moderate, adverse effects on the natural soundscape environment.

Ongoing operation of the past, present, and reasonably foreseeable actions would result in new development, new human uses, and new vehicle trips in the vicinity of Crescent City resulting in a regional, long-term, minor, adverse impact on the natural soundscape environment. The Martin Ranch Project would include development of 1,120 new parking spaces to support the resort facilities, and Del Norte County estimates the solid waste transfer station would generate approximately 220 vehicle trips on an average workday. Noise from the operation of the proposed new developments would be detectable, but the effects would be localized. Overall, the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, adverse effect on the natural soundscapes environment. Because these developments would be located in Crescent City and not in a federal or state park, the impacts of the construction and ongoing operation noise would have less of an impact due to the higher ambient noise levels in an urban environment.

The creation of new noise sources associated with construction activities and new developments would have a detectable, but localized, impact on the project area soundscape. Overall, Alternative 1 combined with the past, present, and reasonably foreseeable actions would result in a regional, long-term, minor, adverse impact on the natural soundscapes environment. Alternative 1 would contribute a small increment to the overall cumulative impact.

Impairment

Alternative 1 would result in a minor and adverse impact to natural soundscapes and there would be no impairment of park resources or values.

Cultural Resources

Analysis

Effects to Archeological Resources. Under Alternative 1, the Requa and Aubell areas would remain similar to existing conditions. Therefore, there would be no change in the treatment and management of archeological resources in the Requa and Aubell areas as a result of Alternative 1. Although no archeological sites are located within the area of potential effect of the Requa and Aubell areas, incidental degradation to unknown archeological sites could still occur due to natural and anthropogenic actions. Since the intensity of incidental impacts would depend upon the nature, location, and extent of disturbance as well as the quantity and data potential of the archeological site(s) affected, the intensity of the adverse impact is uncertain.

Effects on Historical Resources. Under Alternative 1, the Requa and Aubell areas would remain unchanged from the existing conditions. At the Requa area, the complex of buildings and structures that comprise the former Klamath Air Force Station, determined to be ineligible for the National Register of Historic Places(Sloan 2004), would remain on site. No historic resources are known to exist in the Aubell area. Therefore, no historic resources would be adversely affected.

Effects on Ethnographic Resources. Tribal elders have indicated that the Requa area of potential effect is associated with myths and songs on the Yurok Creation story (Sloan 2004). Consequently, the Requa area itself may be eligible for the National Register of Historic Places as a traditional cultural property. However, under Alternative 1, there would be no change in the management and treatment of ethnographic resources, as required by law and NPS and CDPR regulations, or of Yurok cultural sites, traditions, and religious practices in the Requa and Aubell areas per the 1996 Memorandum of Understanding. Therefore, no measurable impacts to ethnographic resources would occur as a result of this alternative.

Summary of Alternative 1 Impacts. There would be no change in the treatment and management of cultural resources as a result of Alternative 1. Maintenance activities at both the Aubell and Requa areas would not result in a known adverse effect to cultural resources. Therefore, Alternative 1 would have a local, long-term, minor, adverse impact on archeological resources, and no discernible impact on historic and ethnographic resources. Further, any site-specific planning and compliance actions would be accomplished in accordance with stipulations in the park's *Final General Management Plan / General Plan, Environmental Impact Statement / Environmental Impact Report*, and the park would continue to consult with culturally associated American Indian tribes regarding Yurok cultural sites, traditions, and religious practices per the 1996 Memorandum of Understanding.

Cumulative Impacts

Past, present, and reasonably foreseeable actions include the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, Elk Valley Road Improvements, Requa remediation, and implementation of the parks' trail plan (including development of a trailhead at the Aubell area). Implementation of these actions could result in effects on cultural (archeological and historical) resources. However, insofar as related projects would be required to comply individually with applicable laws, the potential disturbance, damage or degradation of unique archeological or historic resources could be reduced. Overall, the past, present, and reasonably foreseeable actions would have a regional, long-term, negligible, adverse effect on archeological, historic, and ethnographic resources due to individual project compliance with applicable laws protecting cultural resources.

Alternative 1 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, negligible, adverse cumulative impact on cultural resources. Alternative 1 and the cumulative projects would similarly contribute to the overall cumulative impact.

Impairment

Alternative 1 would have a minor and adverse impact on archeological resources, and no discernible impact on historic and ethnographic resources, and there would be no impairment of park resources or values.

Transportation

Analysis

Effects on Transportation. Under Alternative 1, Requa Road would continue to operate as the primary access road to the NPS maintenance facility at the Requa area, as well as coastal recreational facilities in the area. Aubell Lane would continue to operate as a single-lane roadway that provides access to CDPR maintenance and ranger operations at the Aubell area. Under Alternative 1, ongoing maintenance activities at the Requa area would result in intermittent and temporary traffic delays on Requa Road near the maintenance facility resulting in a local, short-term, negligible, adverse impact. Traffic delays associated with these ongoing repairs, would be very infrequent, and would last approximately one to two days. If a landslide events occurs, it could result in road closures lasting for extended periods of time. Temporary road closures would result in moderate disruptions in access to the maintenance facilities located on Requa Road.

Summary of Alternative 1 Impacts. Ongoing maintenance activities would result in intermittent and temporary traffic delays and would temporarily impede access to maintenance facilities on Requa Road. This would have a local, short-term, minor, adverse effect on transportation.

Cumulative Impacts

Construction of the reasonably foreseeable projects planned or approved within the project areas (i.e., Elk Valley Rancheria Martin Ranch Project, the Solid Waste Transfer Station, Requa remediation, and the Elk Valley Road Improvements) would result in long-term, minor, adverse impacts on transportation. The adverse transportation effects associated with the operation of the Elk Valley Rancheria Martin Ranch Project would be concentrated on U.S. Highway 101. The adverse effects of the operation of the Solid Waste Transfer Station would be concentrated on Elk Valley Road south of Aubell Lane and would be reduced by the proposed Elk Valley Road

improvements, which would widen the roadway to include a center-turn lane and pedestrian/bicycle lanes on both sides of the road between U.S. Highway 101 and Howland Hill Road.

The adverse effects of these projects would be related to construction-generated traffic on roadways serving the project areas, namely Elk Valley Road. Construction activities would increase traffic on local roadways, both from equipment and material haul trips and commute trips by construction workers. Some construction projects, such as the Elk Valley Road Improvements Project, could also result in traffic delays due to reduction in capacity during roadway construction. Activities related to the construction of the reasonable foreseeable projects would result in a regional, short-term, moderate, adverse impact to traffic flow. Implementation of the Redwood National and State Parks Trail Plan would result in increases in localized visitor traffic in areas where new trailheads would be established, including at the Aubell area. These effects would be at a lower level of detection and would not have an appreciable effect on traffic flow in those areas.

Overall, the past, present, and reasonably foreseeable actions would have a regional, long-term, minor adverse effect on traffic flow due to the increased vehicular traffic associated with the past, present, and reasonably foreseeable actions.

Alternative 1 combined with the past, present, and reasonably foreseeable actions would result in a regional, long-term, minor, adverse impact on transportation. The adverse effects associated with intermittent and temporary traffic delays on Requa Road would contribute a small increment to the adverse effect on traffic flows due to increased vehicular traffic associated with the past, present, and reasonably foreseeable actions.

Scenic Resources

Analysis

Effects on Scenic Resources. The Requa area would continue to be visually characterized by built features, including military-era structures, telecommunications facilities, roads, and overhead electrical lines. Although a working landscape, the dominant natural features of the Requa area (varied topography and dense vegetation) would continue to be visually prominent. NPS would conduct ongoing facility maintenance activities at Requa, which would have continuing local, short-term, minor, adverse impacts on scenic resources due to visual intrusions associated with routine building maintenance and erosion control activities.

The Aubell area would continue to be visually characterized as an agrarian working landscape, with grassy fields and a localized development of ranch structures. The pastoral setting of the area would continue to feature CDPR maintenance operations and ranger activities.

Summary of Alternative 1 Impacts. NPS would conduct ongoing facility maintenance activities at Requa, which would have continuing local, short-term, minor, adverse impacts on scenic resources due to visual intrusions associated with routine building maintenance and erosion control activities.

Cumulative Impacts

The past, present, and reasonably foreseeable actions propose substantial new developments within 2 miles of the Aubell area, including the Elk Valley Rancheria Martin Ranch Project, Solid Waste Transfer Station, Requa remediation, and Elk Valley Road improvements. On a regional

level, these new developments on the outskirts of Crescent City would modify the rural character of the area. Although these areas of Crescent City are more rural and agrarian in nature, they are proximate to existing developed areas of Crescent City and would not be out of visual context with the area's setting. Construction activities associated with the proposed past, present, and reasonably foreseeable actions would introduce visual intrusions in the area associated with construction traffic, fencing, staging areas, etc. The construction activities and establishment of new development in a predominantly rural area of Crescent City would have a regional, long-term, moderate, adverse impact on scenic resources.

Implementation of the parks' trail plan would provide new scenic viewing opportunities for park visitors, including at a new trailhead planned for the Aubell area. Overall, the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, adverse impact on scenic resources. The adverse effect of new development in a predominantly rural area of Crescent City would be partially offset by the beneficial impact of new visitor opportunities for scenic views from the implementation of new trails.

Alternative 1 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, adverse impact on scenic resources due to visual intrusions associated with routine building maintenance and erosion control activities at Requa and the adverse effect of new past, present, and reasonably foreseeable actions in a predominantly rural area of Crescent City. Alternative 1 would contribute a small increment to the overall cumulative impact.

Impairment

Alternative 1 would result in a minor and adverse impact to scenic resources and there would be no impairment of park resources or values.

Visitor Experience

Analysis

Effects on Visitor Experience. Alternative 1 would not affect visitor experience in the Requa and Aubell areas, which currently do not include use by park visitors. Visitor experience and use at the Klamath River Overlook and nearby Coastal Trail would not be affected by Alternative 1. Similarly, visitor use and experience at Jedediah Smith Redwoods State Park near the Aubell area would not be affected by Alternative 1.

Summary of Alternative 1 Impacts. Alternative 1 would not affect visitor experience in the Requa and Aubell areas, which currently do not include use by park visitors. Visitor experience and use within the parks near the project areas would not be affected by Alternative 1. Alternative 1 would have no impact on visitor use and experience.

Cumulative Impacts

Implementation of the parks' trail plan would provide new recreation opportunities for park visitors, including at a proposed trailhead at the Aubell area. The expanded trail system would have a readily apparent, minor, beneficial impact on the parks visitor experience. In the short-term, the beneficial impact of the parks expansion on visitor experience would be partially offset by adverse construction-related impacts associated with development of the past, present, and reasonably foreseeable actions, including construction noise and traffic. Overall, the past, present,

and reasonably foreseeable actions would have a regional, long-term, minor, beneficial impact on visitor experience due to the expanded trail system.

Although Alternative 1 would have no impact on visitor experience, Alternative 1 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, long-term, minor, beneficial impact on visitor experience. The proposed expanded trail system would beneficially affect visitor experience.

Park Operations and Facilities

Analysis

Effects on Park Operations and Facilities. Under Alternative 1, NPS maintenance facility at the Requa area would continue to be in poor condition and located on a geologically unstable area. Due to the poor condition of the buildings and the ongoing damage to the structures due to landslides, NPS would continue to undertake higher-than-routine maintenance repairs to maintain use of the facilities, including maintaining buildings, stable slopes, and roadbeds. Road closure associated with landslide events could result in park operations disruptions lasting for extended periods of time. Temporary road closures would result in moderate disruptions in access to the maintenance facilities located on Requa Road, as well as recreational uses accessed from Requa Road. The organization and layout of the buildings themselves would continue to result in inefficient maintenance operations because related work functions and staff would not be located proximate to each other. Investigation and remediation of diesel fuel, motor oil, gasoline, and oil and grease impacts to soil associated with aboveground storage tanks and past maintenance activities would continue to occur in accordance with federal and Regional Water Quality Control Board requirements. Under Alternative 1, NPS would continue to operate a water supply system and water treatment system at the Requa area. The sewage treatment system would continue to be outmoded, and not meet State and Regional Water Quality Control Board standards. Operation of the parks maintenance facility at Requa would have a continuing local, long-term, moderate, adverse effect on park operations.

Operation and maintenance of the two telecommunication facilities at the Requa area would continue to be the responsibility of private entities.

CDPR's small maintenance facility at the Aubell area would continue to be undersized for CDPR park operations requirements, and an insufficient maintenance facility replacement for the maintenance complex formerly located at Jedediah Smith Redwoods State Park that was irreparably damaged by fire. The inadequate capacity of the Aubell maintenance facility would continue to have a local, long-term, moderate, adverse impact on park operations. CDPR would continue to operate a water supply and water treatment system at the Aubell area.

Maintenance vehicle access to the Requa and Aubell area would continue to have compromised access to the Requa and Aubell areas due to the narrow and unimproved access roads, and the need for frequent road repairs at the Requa area.

Summary of Alternative 1 Impacts. Operation of park maintenance functions at the Requa area and limited existing facilities at the Aubell area would have a continuing local, long-term, moderate, adverse effect on the quality and effectiveness of park operations.

Cumulative Impacts

Implementation of the parks' trail plan (including development of a proposed trailhead at the Aubell area near the existing facilities) would provide new recreation opportunities for park visitors, but also new maintenance responsibilities for the park. The expanded trail system would have a regional, long-term, negligible, adverse impact on park operations. The trail system would negligibly affect the park's ability to maintain existing park infrastructure and facilities and adequately protect park resources and provide for an effective visitor experience.

Alternative 1 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, long-term, moderate, adverse impact on park operations. The additional maintenance requirements of the proposed trail system would contribute to the moderate and adverse effect of continued operation of park maintenance functions at the Requa area and limited existing facilities at the Aubell area. Alternative 1 would contribute to the overall cumulative impact more than other projects.

Alternative 2 (Preferred Project)

Geology, Geologic Hazards, and Soils

Analysis

Construction-related Effects on Soils and Slope Stability. Alternative 2 would construct a new maintenance facility at the Elk Valley Road site at Aubell, and decommission and remove the Requa facility. Construction activities at the 9-acre Aubell area would include disturbance of approximately 43,000 cubic yards of soil, with maximum excavation to a depth of approximately 3 feet, grading, and amending approximately 7,000 cubic yards of topsoil to a depth of 6 inches. Decommissioning of the Requa facility would include removal of all buildings down to their foundations just below ground surface, and demolition of most retaining walls. The majority of surface roads would be removed, with the exception of those necessary to access the two telecommunications facilities, which would remain in use. The existing above-ground drainage system would be demolished, although some drainage structures would remain in-place. Following removal of infrastructure, the building pad and roadway corridor areas of the Requa area would be graded and re-contoured to give the area a more natural appearance and reestablish drainage patterns more similar to pre-development conditions.

Overall, construction activities could cause erosion of exposed and stockpiled soil resulting in local, short-term, moderate, adverse impacts if adequate measures are not implemented. Temporary construction-related erosion would occur if soil is exposed during periods of rain, prior to the area restoration and cleanup phase of the project. NPS would implement an erosion control plan following completion of the earthwork, and would revegetate the area with native plant species as part of restoration efforts at Requa. In addition, mitigation included in this alternative (see Appendix C, Mitigation Measures) to reduce erosion includes limiting stockpiles during construction, limiting soil disturbance during periods of rain, implementing erosion control measures, and ensuring native foliage protection during construction at Aubell would reduce the adverse impacts to minor. Soil degradation would be minimal due to erosion controls and the short-term nature of the construction activities.

Operation-related Effects on Soils and Slope Stability. Relocation of NPS operations to Aubell would reduce exposure of NPS personnel and structures to landslide hazards resulting in a moderate, beneficial impact. Demolition of Requa infrastructure would not repair the landslide

or halt downslope creep, however demolition activities would not increase slope instability. Potential adverse impacts associated with removal of the area's drainage system would largely be minimized by regrading activities and removal of impervious surfaces that historically generated increased rate and volume of stormwater runoff. Revegetation of slopes at Requa following demolition would both increase slope stability and minimize potential long-term soil erosion.

Potential moderate and adverse impacts to soils associated with future operations at Aubell would be minimized by installation of a stormwater system that incorporates grassy swales to reduce stormwater runoff rates, and remove suspended sediments prior to discharge into the unnamed tributary of Elk Creek. Although implementation of this alternative would involve regrading the site for building pads and parking areas, neither existing nor proposed slopes are steep in gradient, and potential slope instability is therefore not anticipated.

Operation-related Effects of Seismic Safety. Relocation of NPS operations to newly constructed buildings and roadways at Aubell would reduce potential exposure of NPS personnel to seismic hazards compared to the No Action Alternative resulting in a moderate and beneficial impact. The facilities at Requa were constructed in the 1950's and do not meet current seismic building codes. Additionally, landslide activity at the Requa area threatens the entrance roadway and has damaged several building foundations, further reducing their stability. Although the Requa area would still be susceptible to earthquake-induced landsliding, potential impacts to individuals and property would be greatly reduced. Newly constructed facilities at Aubell would not entirely preclude the potential for damage during a seismic event, however completion of a geotechnical investigation and compliance with seismic and structural design standards of the California Building Code and would substantially reduce potential impacts.

Summary of Alternative 2 Impacts. Alternative 2 would have a local, long-term, minor, beneficial impact. Earthquake ground shaking would continue to affect both the Aubell and Requa areas; however, demolition of damaged, older structures at Requa and replacement with new structures at Aubell would reduce exposure of NPS personnel to seismic hazards. Slopes at Requa would remain unstable, and ongoing downslope creep and landsliding would continue, although removal of Requa infrastructure would not increase slope instability. Installation of the grassy swale at Aubell which slows and filters stormwater runoff prior to discharge into the unnamed tributary of Elk Creek would reduce potential long-term erosion of the tributary stream bed or banks. The beneficial operation-related effects of Alternative 2 would offset the adverse construction-related impacts.

Cumulative Impacts

The geology, geologic hazards, and soils impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, negligible, beneficial impact on geology, geologic hazards, and soils due to an overall decreased exposure of individuals and property to seismic and geologic hazards and continued landslide activity at Requa. Alternative 2 would contribute to the overall beneficial cumulative impact more than other projects.

Impairment

Overall, Alternative 2 would have a minor and beneficial impact on geology, geologic hazards, and soils and there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a potentially significant impact on soils and erosion unless mitigation is incorporated. With the incorporation of mitigation measures, as identified in Appendix C, Mitigation Measures, impacts to soils and slope stability hazards would be less than significant. The proposed action would result in less than significant seismic hazard impacts through completion of a geotechnical investigation and compliance with seismic and structural design standards of the California Building Code.

Hydrology, Floodplains, and Water Quality

Analysis

Operation-related Effects on Flooding. The Elk Valley Road site is not located within a 100-year flood plain, and stormwater flows at the new facility would be managed by installation of a storm drain system which would incorporate grassy swales that regulate stormwater flow rates into the unnamed tributary of Elk Creek. Construction of new impervious surface areas would increase overall flow rates in the tributary during large precipitation events resulting in minor and adverse impacts, however compliance with mitigation measures identified in Appendix C would require the storm drain system to prevent onsite or downstream flooding, thereby reducing potential adverse impacts to negligible.

Potential adverse impacts associated with removal of the Requa's drainage system would largely be minimized by removal of impervious surfaces that historically generated increased rate and volume of stormwater runoff. The proposed recontouring and steep slopes would effectively prevent flooding at the Requa area.

Construction-related Effects on Floodplains and Water Quality. Alternative 2 would construct a new maintenance facility at the Elk Valley Road site at Aubell, and decommission the Requa facility. Construction activities at the 9-acre Aubell area would include regrading approximately 43,000 cubic yards of soil, with maximum excavation to a depth of approximately 3 feet, grading, and amending of approximately 7,000 cubic yards of topsoil which would be spread onsite to a depth of 6 inches. Decommissioning the Requa facility would include removal of all buildings down to their foundations just below ground surface, and demolition of most retaining walls. The majority of surface roads would be removed, with the exception of those necessary to access the two telecommunications facilities which would remain in use. The existing above-ground drainage system would be demolished, although some drainage structures would remain in-place. Following removal of infrastructure, the building pad and roadway corridor areas of the Requa area would be graded and re-contoured to give the area a more natural appearance and reestablish drainage patterns more similar to pre-development conditions.

Overall, construction activities could cause moderate and adverse impacts due to erosion of exposed soil and subsequent sedimentation of surface water flows, such as tributaries of Elk Creek, localized flooding, and associated water quality impacts, should adequate measures not be implemented. Temporary construction-related erosion would occur if soil is exposed during

periods of rain, and prior to the area restoration and cleanup phase of the project. NPS would implement an erosion control plan following completion of the earthwork, and would revegetate the area with native plant species as part of restoration efforts at Requa. Mitigation also included in this alternative to reduce erosion would include limiting stockpiles during construction, implementing erosion control measures in accordance with State Water Resource Control Board General Construction National Pollutant Discharge Elimination System Permit requirements, which requires the creation and implementation of a Stormwater Pollution Prevention Plan, and limiting ground disturbance during periods of rain (see Appendix C, Mitigation Measures). Soil degradation would be minimal due to Stormwater Pollution Prevention Plan requirements and the short-term nature of the construction activities. Construction equipment and hazardous material use also have the potential to cause short-term impacts to surface water quality from spills or leaks. Use of hazardous materials best management practices and the creation of a spill protection plan as part of the Stormwater Pollution Prevention Plan would minimize potential water quality impacts. Implementation of mitigation measures would reduce the adverse impacts to minor.

Operation-related Effects on Water Quality. Under Alternative 2, stormwater flows at Aubell would be managed by installation of a stormwater system, which could have a minor, adverse effect on water quality. The stormwater system would incorporate grassy swales (or filter strips) that reduce stormwater flow rates and remove suspended sediments and other pollutants prior to discharge into the unnamed tributary of Elk Creek. Additionally, stormwater system design would not result in stream bed erosion at stormwater discharge locations, thereby avoiding increases in surface water suspended sediments levels, as outlined in Appendix C, Mitigation Measures. Use of grassy swales (as identified in Appendix C, Mitigation Measures) would filter pollutants associated with parking and maintenance areas, reducing potential adverse impacts to Elk Creek. Alternative 2 would include installation of a new wastewater treatment and disposal system at Aubell, as approximately 1,100 gallons of wastewater per day would be generated at the new facility. The wastewater treatment system would include a septic tank and leach field system, and would be designed to meet current State/Regional Water Quality Control Board standards.

Decommissioning the Requa facility under Alternative 2 would include removal of the existing sewage treatment system which would reduce potential degradation of water quality resulting in a moderate, beneficial impact. The majority of surface roads would be removed, with the exception of those necessary to access the two telecommunications facilities which would remain in use, and all buildings would be demolished. The existing drainage system would be largely demolished, although some drainage structures would remain in-place. Relocation of maintenance activities to Aubell would eliminate automobile and maintenance-associated pollution. The implementation of an erosion control plan and revegetation would reduce long-term erosion and sedimentation of surface water flows associated with soil erosion.

Summary of Alternative 2 Impacts. Impacts related to flooding and water quality under Alternative 2 would be local, long-term, minor, and beneficial. Beneficial operation-related impacts associated with improved water quality and Aubell facility designs to prevent flooding would offset short-term and adverse construction related impacts.

Cumulative Impacts

The hydrology, floodplains, and water quality impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, negligible, adverse impact on hydrology, floodplains, and water quality. Short-term adverse impacts associated with stormwater runoff from construction areas would occur in both Alternative 2 and the past, present, and reasonably foreseeable actions, although implementation of a Stormwater Pollution Prevention Plan would reduce the severity of these impacts. Past, present, and reasonably foreseeable actions could result in long-term increased pollutant concentrations in stormwater and increased rate and volume of stormwater discharge into local waterbodies such as Elk Creek. Beneficial impacts associated with removal of the existing sewage treatment plant at Requa and filtering of stormwater flows from automobile parking and maintenance areas at the Elk Valley Road site would partially offset these adverse impacts. The beneficial impacts of Alternative 2 would considerably contribute to the reduction of the adverse cumulative impact.

Impairment

Alternative 2 would have a minor and beneficial impact on hydrology, floodplains, and water quality and there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a potentially significant impact on hydrology, floodplains, and water quality unless mitigation is incorporated. With the incorporation of mitigation measures, as identified in Appendix C, Mitigation Measures, impacts to hydrology, floodplains, and water quality would be less than significant.

Wetlands

Analysis

Construction-related Effects on Wetlands. Alternative 2 would involve work activities within upland areas at the Requa area. No wetlands would be affected by project activities at the Requa area.

At the Aubell area, construction-related effects on wetlands under Alternative 2 would be local, short-term, minor, and adverse. Activities would involve placement of facilities, specifically a stormwater treatment system with grassy swales, immediately adjacent to the red alder/Sitka spruce riparian corridor of the northernmost tributary to Elk Creek, a palustrine forested wetland. A 100-foot setback from each bank of the creek would minimize construction impacts. While no activity is planned within the setback area, riparian vegetation could be exposed to construction impacts such as trampling and soil compaction within the setback area. Further, an area of riparian vegetation (approximately 1/3 acre) is located beyond this setback, in the northeast part of the site. This area could also be affected by construction activities. The stormwater system would discharge stormwater from the grassy swale toward the creek. Without placement of a physical barrier at the creek setback, soils could migrate and discharge towards the

creek during grading and excavation activities for the swale if construction occurs during the rainy season.

Implementation of wetland, vegetation, revegetation, erosion control, and stormwater pollution prevention mitigation measures (see Appendix C, Mitigation Measures) would include but not be limited to, avoiding impacts on riparian vegetation that extend into the construction zone by creating an additional 25-foot setback at the edge of riparian vegetation where riparian vegetation extends beyond the 100-foot setback, installing silt fencing and/or erosion control devices around excavation areas, and revegetating disturbed areas with native plant species. These mitigation measures would reduce the intensity of the impact on wetlands to negligible. NPS and CDPR would also implement conditions specified in permits obtained from the California Department of Fish and Game associated with the potential removal of some riparian vegetation associated with the construction of the septic system if required.

Operation-related Effects on Wetlands. Operation-related effects on wetlands under Alternative 2 would be local, long-term, negligible and adverse. With implementation of mitigation measures, exposed bare soil within the riparian corridor would be planted or seeded following implementation of Alternative 2 at the Aubell area and would reduce the identified effect. Within the grassy swales (or vegetated filter strips) sediments would be removed from the water to avoid transporting sediments to the creek. The swales would serve as a buffer between the riparian vegetation and stormwater runoff. The structures would require minor maintenance.

Summary of Alternative 2 Impacts. No wetlands would be affected by project activities at the Requa area under Alternative 2. With implementation of mitigation measures, Alternative 2 would result in local, short- and long-term, negligible, adverse effect on wetlands. Potential construction-related effects on wetlands at the Aubell area under Alternative 2 would include trampling and soil compaction during construction of the grassy swale and potential soil discharge into the creek during grading activities for the swale.

Cumulative Impacts

The wetlands impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on wetlands. Alternative 2 would a small increment contribute to the overall cumulative impact.

Impairment

Alternative 2 would result in a negligible and adverse impact on wetlands and there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a potentially significant impact on wetlands unless mitigation is incorporated. With the incorporation of mitigation measures, as identified in Appendix C, Mitigation Measures, impacts to wetlands would be less than significant.

Vegetation

Analysis

Construction-related Effects on Vegetation. Demolition of facilities and grading activities at the Requa area would require removing some 50-year old trees within an approximately 4-acre area that have grown on fill slopes at Requa. The roots and canopy of trees adjacent to activities could be removed or damaged. As part of the project, an erosion control plan would be implemented within disturbed fill areas to reduce the potential for soil erosion (see Appendix C, Mitigation Measures). Activities at the Requa area would involve removing non-native plant species for two growing seasons, restoring the area with native plant species in 30 percent of the west and east areas, and allowing the north area to revegetate to native plant species naturally. During the dry season, demolition activities would result in dust, which could cover plants and reduce light and gas exchange. If demolition and grading activities occur during the rainy season, particularly if erosion control measures are not immediately implemented following disturbance, erosion problems could occur and could result in adverse effects on vegetation. Effects could include covering of plants with escaping soils, which would eliminate light and reduce gas exchange, plant removal, or damage due to undercutting. Effects on vegetation at the Requa area would be local, short-term, moderate and adverse. Implementation of best management practices as well as erosion control, vegetation, revegetation, tree protection and dust mitigation measures (see Appendix C, Mitigation Measures), would reduce the intensity on vegetation to minor impact.

Construction impacts at the Aubell area would require removing approximately 9 acres of mostly highly disturbed prairie grassland and approximately 0.5 acre of planted 10- to 20 year old upland trees due to construction of facilities and widening the intersection of Elk Valley Road and Aubell Lane. Activities at the Aubell area would involve placement of facilities, specifically a stormwater treatment system with grassy swales, immediately adjacent to the red alder/Sitka spruce riparian vegetation. In addition, the northwest corner of the proposed project area is located within a small area of red alder/Sitka spruce riparian vegetation that is outside the 100-foot creek setback area. Development of the proposed action could disturb this vegetation. Vegetation adjacent to the proposed maintenance facilities could be exposed to construction impacts such as trampling and removal of or damage to tree roots during grading. Trampling could result in erosion, habitat fragmentation, soil and root compaction, and plant mortality at localized areas. Disturbance to vegetation at the Aubell area would be moderate and adverse, resulting in impacts that would be clearly detectable.

To minimize the intensity of effects on vegetation, the Aubell area would be landscaped with native grasses, trees, and shrubs. Implementation of vegetation and revegetation mitigation measures (see Appendix C, Mitigation Measures) would require a 3-year maintenance and monitoring program (in addition to the 2-year non-native species removal and restoration that would be implemented under Alternative 2), re-planting or seeding exposed bare areas, avoiding or minimizing disturbance on vegetation adjacent to the limits of construction by installing protective fencing material, and avoiding impacts on riparian vegetation that extend into the construction zone by creating an additional 25-foot setback at the edge of riparian vegetation where riparian vegetation extends beyond the 100-foot setback. Implementation of the revegetation, tree protection and dust abatement mitigation measures (see Appendix C, Mitigation Measures) would reduce the intensity of the impact on vegetation to minor.

Operation-related Effects on Vegetation. At the Requa area, vegetation would begin to establish following the restoration effort, and in the long-term would cover bare areas. Following implementation of the restoration efforts, the Requa area would require regular maintenance and monitoring. Without these actions, the operation-related effects would be local, negligible, and beneficial. Although NPS would remove non-native plant species for two growing seasons as part of the project, implementation of revegetation mitigation measures (see Appendix C, Mitigation Measures), including, but not limited to, requiring a 3-year monitoring program would measure the success of the restoration effort. Incorporation of these actions would increase the intensity of the effect to minor and remain beneficial.

Immediately following construction at the Aubell areas, vegetation communities within disturbed areas would be bare and exposed. Landscaping disturbed areas with native species would reduce the exposure to direct sunlight, wind, and fog-drip, and thus, reduce the effect of creating conditions favorable to non-native annual species. Implementation of erosion control, revegetation efforts, and vegetation measures would include amending and spreading topsoil on disturbed bare areas, mulching, protecting wetlands and creeks from dislodged sediments, and controlling introduction of non-native species. With implementation of mitigation measures, the impact on vegetation would be local, long-term, minor, and adverse.

Summary of Alternative 2 Impacts. Overall, Alternative 2 would result in local, long-term, negligible, beneficial effect on vegetation due to restoration activities in the Requa area, although vegetation growth and full cover would require many years to establish. The long-term beneficial effects of restoration activities at the Requa area would offset the short-term and adverse construction-related effects at Requa and Aubell, and temporary and permanent vegetation removal activities at the Aubell area.

Cumulative Impacts

The vegetation impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on vegetation. The beneficial effect of Alternative 2 would offset by a small increment to the adverse past, present, and reasonably foreseeable actions impact.

Impairment

Alternative 2 would result in negligible and beneficial impacts on vegetation and there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a potentially significant impact on vegetation unless mitigation is incorporated. With the incorporation of mitigation measures, as identified in Appendix C, Mitigation Measures, impacts to vegetation would be less than significant.

Wildlife

Analysis

Construction-related Effects on Wildlife. Common wildlife at both the Requa and Aubell areas would be temporarily exposed to construction-related noise and human disturbance within a localized area under Alternative 2 and would result in a moderate adverse effect. Ambient noise levels would increase substantially during project construction. Common wildlife would be exposed to noise levels and human disturbance greater than existing ambient levels (i.e., greater than about 50 A-weighted decibels). Noise and human disturbance during construction activities within this period would be continuous and greater than effects generated by normal activities at both areas. However, noise from construction would avoid the sensitive nest switching/chick feeding periods of common bird species. During demolition and excavation activities at the Requa area as well as utility installation at the Aubell area, small mammals could become entrapped in trenches, pits, or pipes. Operation of heavy equipment at both areas could result in mortality of common amphibians, reptiles, and small mammals.

Project activities would be localized to limit adverse effects on wildlife. Implementation of mitigation measures, including covering open pipes and pits daily, removing food and waste, and implementing erosion and sedimentation controls (see Appendix C, Mitigation Measures) would reduce the intensity of construction-related effects on common wildlife to minor.

Operation-related Effects on Wildlife. At the Requa area, vegetation would begin to establish following the restoration effort, and in the long-term would cover bare areas and provide cover for wildlife. Following implementation of measures to minimize adverse effects on common wildlife during demolition and restoration activities, common wildlife that may have fled would re-occupy the disturbed area once vegetation has established. Noise and human disturbance would be lower than existing levels due to a lack of noise-generating facilities. Establishment of vegetation would increase the wildlife use at the Requa area. Because the Requa area would be restored, the beneficial effect on wildlife would be long-term and moderate.

Terrestrial habitat for common wildlife species at the Aubell area would be affected in the long-term resulting in a minor, adverse impact. Species that used the prairie grassland previously, such as Roosevelt elk, would be forced to use other similar areas (such as the Midway site or the existing ranch site). The adjacent prairie grasslands could serve as comparable habitat to the Elk Valley Road site (see figure II-2 in Chapter 2, Alternatives), but the use of this site by wildlife species may be limited. The Elk Valley Road site would attract wildlife species that are habituated to humans due to the increase in noise levels and potential harassment by humans caused by the new facilities.

New facilities near second-growth Sitka spruce forest would increase human activity at the Aubell area. Increased human activity within these areas could result in:

- Increased noise and new lighting from buildings, which could result in harassment to common nesting birds
- Increased garbage, road-kills, and trash that attract corvids, which could result in nest predation and decreased species diversity

Implementation of wildlife mitigation measures (see Appendix C, Mitigation Measures), including routinely removing waste, monitoring activities, and to the extent feasible shielding or

directing building lighting away from natural areas would reduce the intensity of this operation-related effect to minor. Implementation of scenic resource measures would reduce the adverse effect of lighting on wildlife.

Summary of Alternative 2 Impacts. Alternative 2 would have a local, short- and long-term, minor adverse effect on wildlife. Adverse wildlife impacts associated construction-related noise and human disturbance, and new facility development would occur at the Aubell area. Beneficial wildlife impacts would occur at the Requa area associated with restoring the area.

Cumulative Impacts

The wildlife impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on common wildlife. Alternative 1 would contribute a small increment to the overall cumulative impact.

Impairment

Alternative 2 would result in a minor and adverse impacts on wildlife and there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a less than significant impact on common wildlife.

Special-status Species

Analysis

Construction-related Effects on Special-status Species. Proposed activities at the Requa area would create noise and human disturbance that could potentially harass bird species protected by the Migratory Bird Treaty Act. Construction activities at the Elk Valley Road site would be located within a quarter-mile of a strip of forest consisting of mature second-growth conifers, which is potential habitat for Northern spotted owl. If spotted owl occupies the second-growth forest strip, construction noise and other activities would have a local, short-term, moderate, adverse effect on the species. Northern spotted owl surveys would be conducted prior to construction activities, and should special-status species be found within the second-growth forest strip in the Aubell area, additional agency consultation would be undertaken with the U.S. Fish and Wildlife Service to determine construction stipulations that would be required. To reduce the exposure of noise levels and human disturbance greater than existing ambient levels (i.e., greater than about 50 A-weighted decibels) on special-status species protected by the Migratory Bird Treaty Act at both the Requa and Aubell areas a qualified biological monitor would be on-site during project construction to ensure protection of sensitive resources (see Appendix C, Mitigation Measures).

To further protect breeding special-status bird species, NPS and CDPR (as applicable) would implement on-going program and new measures to reduce potential threats to listed special-status bird species as part of the *Conservation Strategy for Managing Threatened and Endangered*

Species in Redwood National and State Parks (NPS 2003a), including but not limited to, noise reduction measures, and stopping work if listed special-status bird species are encountered during project activities. These actions would limit potential disturbance to special-status bird species, including northern spotted owl and birds protected by the Migratory Bird Treaty Act, during construction activities. Implementation of mitigation measures would reduce the adverse construction-related impacts to negligible.

Proposed construction activities of the grassy swale at the Aubell site would potentially discharge sediments to the northernmost tributary to Elk Creek, which could adversely affect potentially occurring special-status aquatic species, including northern red-legged frog, foothill yellow-legged frog, and tailed frog. These effects in the project site could also adversely affect special-status fish species, such as coho salmon, in Elk Creek downstream of the northernmost tributary by decreasing water quality and impeding fish passage. Special-status amphibian species potentially migrate between the prairie grassland and the riparian corridors of the tributaries to Elk Creek, and could be exposed to heavy equipment construction impacts. Implementation of mitigation measures, including erosion control, biological monitoring, and erecting appropriate fencing material (see Appendix C, Mitigation Measures) would reduce the intensity of construction-related effects on special-status amphibian species and reptile species to negligible.

Operation-related Effects on Special-status Species. The beneficial effect on special-status species at the Requa area would be long-term and minor because the Requa area would be restored. Vegetation would begin to establish following the restoration effort, and in the long-term would cover bare areas and provide habitat for mainly special-status bird species protected by the Migratory Bird Treaty Act. Following implementation of measures to minimize adverse effects on special-status avian species during demolition and restoration activities, species that may have fled would re-occupy the disturbed area once vegetation has established. Noise and human disturbance would be lower than existing levels due to a lack of noise-generating facilities. Establishment of vegetation would increase the wildlife use at the Requa area.

New facilities at the Aubell area would increase human activity near areas of the second-growth Sitka spruce forest. New facilities would also create new sources of night lights, which could adversely impact wildlife. To mitigate adverse effects on special-status species, implementation of special-status species mitigation measures, including food and waste removal (see Appendix C, Mitigation Measures) would reduce the intensity of operation-related effects on special-status species to negligible. Implementation of scenic resource measures would reduce the adverse effect of lighting on special-status wildlife.

Summary of Alternative 2 Impacts. Overall, with implementation of mitigation measures, Alternative 2 would result in a local, short- and long-term, negligible, adverse effects on special-status species. Construction-related activities would have adverse effects on special-status species due to exposure to noise and human disturbance, trampling, and potential discharge of sediments to the northernmost tributary to Elk Creek. Special-status bird species at both Requa and Aubell areas would be temporarily exposed to construction-related noise and human disturbance within a localized area. Adverse special-status species impacts associated with construction-related noise and human disturbance, new facility development would occur at the Aubell area while beneficial impacts would occur at the Requa area associated with restoring area.

Cumulative Impacts

The special-status species impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on special-status species. The adverse impacts associated with Alternative 2 and the reasonably foreseeable future actions would result in a net adverse effect on special-status species. Alternative 2 would contribute a small increment to the overall adverse cumulative impact.

Impairment

Alternative 2 would result in a negligible and adverse impact on special-status species and there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a less than significant impact on special-status species and their habitat, with mitigation incorporated, as identified in Appendix C, Mitigation Measures.

Air Quality

Analysis

Construction-related Effects on Air Quality. Alternative 2 construction-related activities associated with the demolition and restoration of the Requa area and the development of a new maintenance facility at the Elk Valley Road site at Aubell would have a local, short-term, minor, adverse effect on air quality in the project area. Air quality effects associated with demolishing Requa buildings to their foundations just below ground surface, removal of the wastewater treatment plant and other utilities, pavement removal, containment and removal of existing asbestos and lead paint, and recontouring the area would create temporary air emissions. Constructing the new maintenance facility buildings, site development (including earthwork and grading), installation of utilities, and Elk Valley Road and Aubell Lane road improvements would temporarily create new air emissions. Alternative 2 demolition and construction activities would create temporary engine and dust emissions. Alternative 2 would generate considerable amounts of dust, including particulates with a diameter of 10 microns or less (primarily fugitive dust from construction activities and tailpipe emissions from the operation of heavy-duty equipment). Dust emissions generated by various construction activities would vary from day to day, depending on the level and type of activity, silt content of the soil, and weather conditions during the two-year construction period. The increases in emissions would be proximate to sensitive receptors, including adjacent residences, and schools located within 0.5 to 1.5 miles of the Aubell area. However, construction activities would not affect the Class I airshed designation of the park.

Emissions generated from construction activities would also include tailpipe emissions from heavy-duty equipment, worker commute trips, and construction truck trips (to haul away debris materials from the project area to appropriate reuse or refuse sites and to supply construction sites with new construction materials). Both mobile and stationary equipment would generate emissions of ozone precursors, carbon monoxide, and particulates with a diameter of 10 microns

or less (criteria air pollutants), as well as toxic air contaminants from use of diesel-powered equipment. Toxic air contaminants are less pervasive in the atmosphere than criteria air pollutants and do not have corresponding ambient air quality standards, but they are nonetheless linked to short-term (acute) and long-term (chronic or carcinogenic) adverse human health effects. Alternative 2 construction activities would have local, short-term, minor, adverse impacts to air quality.

As identified in Appendix C, Mitigation Measures, dust abatement measures to mitigate adverse construction-related impacts to air quality would be implemented as part of this alternative. These measures include practices such as site watering, covering stockpiles, covering haul trucks, and vehicle emission controls in order to reduce both tailpipe and fugitive dust emissions. With mitigation measures, the effect of air pollutant emissions associated with construction activities at the project area under Alternative 2 would be reduced, however the intensity of the impact would remain minor.

Operation-related Effects on Air Quality. Under Alternative 2, emissions-related activities at the Requa area would be reduced resulting in a local, long-term, minor, beneficial impact. The discontinuation of park operations and maintenance activities, including vehicle trips, at Requa would be slightly detectable. The Requa area would be available to pedestrian use by park visitors; however, no new visitor facilities would be included and use of the area is expected to be minimal based on existing use of nearby areas. Few, if any, specific Requa area visitor trips are anticipated.

Development of NPS and CDPR's replacement maintenance facility at the Aubell area would introduce new operational emissions at the Elk Valley Road site, including maintenance vehicle emissions, and emissions related to heating, cooling, and other activities at the new facility. However, the new facility would include more efficient building technology than the existing facility. Alternative 2 operational activities would have local, long-term, minor, adverse impacts to air quality at the Aubell area. The slightly detectable increases in emissions would be proximate to sensitive receptors, including adjacent residences and schools located within 0.5 to 1.5 miles of the Aubell area.

Most park employees reside in Crescent City and the length of employee trips under Alternative 2 would be reduced by traveling to a new facility located at Aubell, reducing emission impacts associated with the addition of operational activities at Aubell. There would be some longer work trips into the park, but on balance, then would be a reduction in vehicle miles traveled.

Alternative 2 would not conflict with or obstruct implementation of an applicable air quality plan for Del Norte County or the North Coast Air Basin and would not affect the Class I airshed designation of the park. Alternative 2 would not emit air contaminants at a level that, by themselves, would violate any local, state, or federal ambient air quality standards, or result in a cumulatively considerable net increase in particulate matter less than 10 micrometers in diameter. In addition, Alternative 2 would not create objectionable odors affecting a substantial number of people.

Summary of Alternative 2 Impacts. Alternative 2 would have a local, short- and long-term, minor, adverse impact on air quality. Construction activities would have short-term and minor adverse effects on air quality at the Requa and Aubell areas related to use of heavy equipment, dust generation, and construction-related vehicle trips. These adverse air quality impacts would be

reduced by the implementation of dust abatement measures as described in Appendix C, Mitigation Measures. Development of a new maintenance facility at the Aubell area would result in slightly detectable increases in emissions that would be proximate to sensitive receptors. Most park employees reside in Crescent City and the length of employee trips under Alternative 2 would be reduced by traveling to a new facility located at Aubell, reducing emission impacts associated with the addition of operational activities at Aubell. In general, air quality would have a minor improvement due to reduced vehicle trip miles and more efficient building technology.

Cumulative Impacts

The air quality impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions would result in a local, long-term, moderate, adverse impact on air quality. Alternative 2 would contribute a small increment to the emissions created by the proposed past, present, and reasonably foreseeable actions, including objectionable odors in the vicinity of the transfer station.

Impairment

Alternative 2 would have a minor and adverse impact on air quality and there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a less than significant impact on air quality.

Natural Soundscapes

Analysis

Construction-related Effects on Natural Soundscapes. Under Alternative 2, demolition, restoration, and construction activities at the Requa and Aubell areas would have local, short-term, moderate, adverse natural soundscapes effect in the project area.

Alternative 2 would involve an approximately 2-year construction period, starting in the spring 2007 through spring 2009. The type of construction-related noise generated at Requa would include demolishing buildings to their foundations just below ground surface, removal of the wastewater treatment plant and other utilities, pavement removal, recontouring the area, and noise associated with material haul vehicles and worker commute trips. At the Elk Valley Road site, site development (including earthwork and grading), installation of utilities, constructing the new maintenance facility buildings, and Elk Valley Road and Aubell Lane road improvements would temporarily create new noise sources. Such noise at both areas could affect special-status species and other park wildlife; and nearby residences. Recreational users on nearby trails and at the Klamath River Overlook could be affected by construction noise at the Requa area. Table IV-1 provides typical noise levels generated by various types of heavy equipment that would be used during construction of Alternative 2.

Table IV-1
Typical Noise Levels from Heavy-duty Equipment

Equipment	Typical Noise Level (dBA) 50 feet from the Source[a]	
	Without Noise Controls	With Feasible Noise Controls[b]
Air Compressor	81	75
Backhoe	80	75
Bulldozer	80	75
Front Loader	79	75
Generator	78	75
Grader	85	75
Jack Hammer	88	75
Paving Machine	89	80
Pneumatic Tool	86	80
Truck	91	75

dBA = A-weighted decibels

a Estimates correspond to a distance of 50 feet from the noisiest piece of equipment and 200 feet from the other equipment.
b Controls may include selecting quieter procedures or machines as well as implementing noise-control features that do not require major redesign or extreme cost (e.g., improved mufflers, equipment redesign, engine enclosures, or use of silencers, shields, shrouds, or ducts).

SOURCE: U.S. Environmental Protection Agency, 1971

Natural soundscapes effects in the project area would vary depending upon a number of factors, such as the number and types of equipment in operation on a given day, usage rates, the level of background noise in the area, and the distance between sensitive uses and construction activities. Outdoor ambient noise levels in the parks typically range from the 45 to 60 dBA (NPS 1999). This analysis assumes the ambient noise level in the project area to be approximately 60 dBA due to existing operations at the Requa and Aubell area, and the proximity of the Aubell area to Crescent City. Ambient noise may be higher at Aubell than Requa. Operation of construction equipment would increase the ambient noise levels in the project area, and such increases would be readily detectable. The increase in project area noise levels would be proximate to sensitive receptors, including adjacent residences and nearby park visitors.

As described in Appendix C, Mitigation Measures, Best Management Practices would be employed to mitigate adverse impacts on natural soundscapes, including implementation of standard noise abatement measures during construction, use of best-available noise control techniques where feasible, use of hydraulically or electrically powered impact tools when feasible, and siting of stationary noise sources as far from noise-sensitive uses as possible. Although the mitigation measures would reduce construction noise levels, during construction the noise levels would continue to be readily detectable and would have an appreciable effect, resulting in an overall moderate adverse impact.

Operation-related Effects on Natural Soundscapes. Under Alternative 2, the discontinuation of park operations and maintenance activities at the Requa area would have a local, long-term, moderate, beneficial impact on the soundscape. The Requa area would be available to pedestrian use by park visitors; however, no new visitor facilities would be included. Few, if any, specific Requa area trips are anticipated and therefore, no new sources of park visitor-related noise are anticipated.

Development of NPS and CDPR's replacement maintenance facility at the Aubell area would introduce new source of noise at the Elk Valley Road site, including noise associated with maintenance operations, equipment operation and repair, maintenance vehicles, and the voices and activities of NPS and CDPR staff at the new facility. Alternative 2 operational activities would have local, long-term, moderate, adverse impacts to the natural soundscape environment at the Aubell area. Although existing ambient noise levels at the Aubell area are elevated associated with current operations activities, the adjacent heliport, and traffic on Elk Valley Road, the new facilities would result in detectable increases in ambient noise levels in the area. The increase in project area noise levels would be proximate to sensitive receptors, including adjacent residences. As identified in Appendix C, Mitigation Measures, the new facility would be designed to locate noise intensive maintenance operations as distant from sensitive receptors as possible, and the new building would be designed to attenuate interior noise so that noise generated within the maintenance facility would be less audible in the ambient environment.

Alternative 2 would not generate noise levels in excess of standards established by the County General Plan. Construction and operation activities would not generate excessive groundborne vibration or groundborne noise levels. The Elk Valley Road site would be within the vicinity of a private heliport; however, Alternative 2 would not expose residents to excessive noise levels associated with park maintenance and operations activities.

Summary of Alternative 2 Impacts. Alternative 2 would have a local, long-term, minor, adverse impact on the natural soundscape environment. Construction activities and development of the new maintenance facility at the Elk Valley Road site would adversely affect the local natural soundscape environment; however, the beneficial impacts of reduced noise levels at the Requa area would reduce the overall adverse effect under Alternative 2.

Cumulative Impacts

The analysis of impacts on natural soundscapes for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions would result in a regional, long-term, minor, adverse impact on the natural soundscape environment. The creation of new noise sources associated with Alternative 2 and past, present, and reasonably foreseeable actions, including construction activities and new developments, would contribute a small increment to the cumulative impact.

Impairment

Alternative 2 would result in a minor and adverse impact to natural soundscapes and there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a potentially significant impact on the noise environment unless mitigation is incorporated. With the incorporation of noise abatement measures, as identified in Appendix C, Mitigation Measures, impacts to the soundscape would be less than significant.

Cultural Resources

Analysis

Construction-related Effects on Archeology. Alternative 2 would include development of a new maintenance facility at the Elk Valley Road site at Aubell, and the decommission and removal of the Requa facility. No significant archaeological resources were identified both during archival and survey of the Aubell and Requa areas of potential effect (Sloan 2004). However, the potential exists for the discovery of unidentified or unexpected subsurface archeological resources during ground disturbance; therefore, the proposed action would be considered a local, long-term, moderate, adverse impact. Mitigation measures outlined in Appendix C, Mitigation Measures, such as accidental find policies would reduce this adverse impact to minor.

Construction-related Effects on Historic Resources. Alternative 2 includes development of a new maintenance facility at the Elk Valley Road site at Aubell, and decommission and removal of the Requa facility. No historic resources eligible for listing in the National Register of Historic Places were identified within the Aubell area of potential effect; therefore, no historic properties would be affected by the alternative on the Aubell site. The Requa area includes a complex of buildings and structures that represent the former Klamath Air Force Station, which was found to lack sufficient integrity to be eligible for listing in the National Register of Historic Places (Sloan 2004). Decommission and removal of the Requa facility would be considered a minor, adverse impact to historic resources.

Construction-related Effects on Ethnographic Resources. No significant ethnographic sites were identified on the Aubell site. However, tribal elders have indicated that the Requa area is associated with myths and songs on the Yurok Creation story (Sloan 2004). Consequently, the Requa area may be eligible for the National Register of Historic Places as a traditional cultural property. Actions associated with construction activities at Requa could cause inadvertent adverse effects to this resource, resulting in a local, short-term, moderate, adverse impact. However, the undertaking at Requa would return the landscape to a more natural condition—a condition much closer to those valued by the Yurok tribe. In addition, the management of the effects to the Requa property would be conducted in close consultation with the Yurok Tribal Heritage Preservation Officer. These measures, described in Appendix C, would reduce potential impacts to the traditional cultural property to local, short-term, minor, and adverse.

Operation-Related Effects on Ethnographic Resources. With the removal of the former Klamath Air Force Station complex, the Requa area would more closely resemble the natural landscape conditions that existed prior to the construction of the Klamath Air Force Station, returning the landscape closer to the conditions valued by the Yurok tribe. However, the degree of beneficial change to the landscape is subject to interpretation and continuing consultation with the Yurok Tribe (see Appendix C). Consequently, the operational effects to ethnographic resources would be considered local, long-term, minor, and beneficial.

Summary of Alternative 2 Impacts. Alternative 2 would have a local, long-term, moderate, adverse effect on archeological resources due to the potential disturbance of unknown subsurface archeological resources. Implementation of mitigation measures identified in Appendix C would reduce the impact intensity to minor. The decommission and removal of the Requa facility would be considered a local, long-term, minor, adverse impact to historic resources. Actions associated with construction activities at Requa could cause inadvertent adverse effects to the traditional cultural property, resulting in a local, short-term, moderate, adverse impact. However,

implementation of cultural resource mitigation measures, as described in Appendix C, Mitigation Measures, would reduce construction-related impacts to ethnographic resources to local, short-term, minor, and adverse. Removal of the Requa facility, with implementation of mitigation measures identified in Appendix C, Mitigation Measures, would return the landscape to the natural conditions much closer to those valued by the Yurok tribe and would result in a local, long-term, minor, beneficial impact.

Cumulative Impacts

The cumulative impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the cumulative projects would have a regional, long-term, negligible, adverse cumulative impact on cultural resources. Construction activities at Requa and Aubell would contribute a small increment to the cumulative loss of cultural resources within the region. Alternative 2 and the cumulative projects would have a minor, beneficial impact on ethnographic resources due in large part to the restoration of the Requa area.

Impairment

Alternative 2 would result in a minor and adverse effect on archeological and historic resources and a minor and beneficial impact on ethnographic resources; there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a potentially significant impact on cultural resources unless mitigation is incorporated. With the incorporation of mitigation measures, as identified in Appendix C, Mitigation Measures, impacts to cultural resources would be less than significant.

Transportation

Analysis

Construction-related Transportation Effects. Under Alternative 2, Requa Road would experience a temporary increase in construction-related traffic due to the demolition and removal of existing Requa facilities. Adverse construction-related transportation impacts primarily would be related to temporary increases in truck traffic volumes on area roadways and in the number of turning movements between Requa Road and U.S. Highway 101. Requa demolition and restoration activities would occur over an approximately 12-month period, though most activities would occur during the 2-month demolition period. Construction-related traffic would cause a temporary and intermittent lessening of the capacities of area roadways because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

Under Alternative 2, Aubell Lane would experience a temporary increase in construction-related traffic during construction activity. Adverse construction-related transportation impacts would primarily be related to the widening of Aubell Lane, temporary increases in truck traffic volumes on area roadways, and in the number of turning movements between Elk Valley Road and the staging area on Aubell Lane.

Adding acceleration and deceleration lanes on Elk Valley Road at its intersection with Aubell Lane would cause temporary, adverse construction-related transportation impacts. The installation of the proposed water line along Elk Valley Road for approximately 5,200 feet would require one-way traffic during the construction process to allow room for the trenching and work area.

In addition, approximately 500 feet of Aubell Lane would be widened to two lanes to provide adequate capacity for vehicles traveling to and from the new facilities. The roadway widening would include the installation of 500 feet of pipeline for water and 300 feet of power lines along Aubell Lane to the project site; these projects would cause temporary delays in traffic due to construction staging in the roadway.

Construction activities, including new facility development, roadway widening, pipeline additions, and power line erection, would generate varying numbers of vehicle trips (depending on the type of work) to accommodate construction workers, trucks, and equipment. Construction-related traffic would cause temporary and intermittent lessening of the capacities of area roadways because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

As identified in Appendix C, Mitigation Measures, traffic control and visitor protection measures would be employed to reduce the adverse effects of construction activities on transportation systems in the project areas. These measures include advance warning signs and a flagger to direct traffic to maintain safe and efficient traffic flow during the construction period. Implementation of mitigation measures would lessen the adverse construction-related transportation impacts to a minor intensity.

Operation-related Transportation Effects. Alternative 2 would improve road conditions and safety for motorized and non-motorized travel on Requa Road. With the closing of the maintenance operation at the Requa area, there would be substantially less traffic on Requa Road. The lower roadway volumes would have a local, long-term, negligible, beneficial transportation impact.

Traffic formerly associated with maintenance and operational activities at the Requa area would shift to Aubell area roadways. Alternative 2 would improve traffic operational capacity and safety for motorized and non-motorized travel on Aubell Lane by widening the roadway for two-way traffic. In addition, by relocating the intersection of Elk Valley Road at Aubell Lane slightly to the north and adding acceleration and deceleration lanes on Elk Valley Road, the safety and sight distance for vehicles entering and exiting Aubell Lane would be improved. These roadway improvements would have a local, long-term, minor, beneficial transportation impact.

Summary of Alternative 2 Impacts. Alterative 2 would have a local, long-term, minor, beneficial impact on transportation associated with roadway and intersection improvements. The long-term beneficial impact associated with roadway improvements would offset the short-term, adverse transportation impacts associated with construction activities.

Cumulative Impacts

The transportation impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions would result in a regional, long-term, minor, adverse impact on transportation. The adverse effect on traffic flows due to increased vehicular traffic associated with the past, present, and reasonably foreseeable actions would offset the beneficial impacts associated with roadway improvements under Alternative 2. Alternative 2 would contribute a small beneficial increment to the overall cumulative impact.

CEQA Determination

As described in the paragraphs above and Appendix A, CEQA Initial Study, the proposed action would have a potentially significant impact on transportation unless mitigation is incorporated. All transportation impacts would be mitigated to less than significant with implementation of traffic control and visitor protection measures (see Appendix C, Mitigation Measures).

Scenic Resources

Analysis

Construction-related Effects on Scenic Resources. Demolition and restoration activities at Requa and construction activities at the Aubell area would have a local, short-term, moderate, adverse effects on scenic resources. Construction activities at Requa, including building demolition (to their foundations just below ground surface), pavement removal, grading and earth moving, tree and vegetation removal, and installation of new plantings, would have readily detectable but localized and temporary, adverse impacts on scenic resources at Requa. Demolition and restoration activities at Requa would not be readily visible from U.S. 101 or the Klamath River overlook due to the area topography. Construction activities at the Aubell area, including new building construction, grading and earth moving, roadway relocation and widening, existing utility removal and new utility installation, landscaping, and installation of new paved areas for parking lots, sidewalks, and work areas, also would have readily apparent but localized and temporary, adverse impacts on scenic resources in the project area. The presence of construction workers, construction-related truck trips, and heavy equipment activity would detract from the visual character of the project areas. Appendix C, Mitigation Measures, identifies scenic resources protection measures such as fencing the primary construction staging area to provide visual screening. Although the mitigation measures would reduce the adverse visual effect of construction activity, it would not reduce the intensity of the adverse impact.

Operation-related Effects on Scenic Resources. Alternative 2 would have a local, long-term, moderate, beneficial impact on scenic resources at Requa. By restoring a high bluff overlooking the Klamath River and Pacific Ocean, the Requa area would provide improved views of the Requa area. The Requa area would be largely visually transformed from a developed area characterized by hardscape and built features to a naturally vegetated area with the former area topography partially amended to its original contours. The Requa area would continue to host the two telecommunications facilities and service roads under Alternative 2.

Alternative 2 would have a moderate and adverse effect on scenic resources at the Aubell area. The Elk Valley Road site would be visually transformed from a grassy landscape with mixed land uses to a built-out site with approximately 145,000 square feet of developed area including approximately 40,000 square feet of buildings. Although trees and other new landscaping would screen some views of the facility from Elk Valley Road and Aubell Lane, the large-scale development in an existing undeveloped site would be readily detectable by passing park visitors. The new development would

be localized, however, and confined to the approximately nine-acre Elk Valley Road site. Appendix C, Mitigation Measures, identifies scenic resources mitigation measures such as planting vegetation to provide visual screening of built facilities. The mitigation measures would not lessen the intensity of the adverse effect. The beneficial impact associated with restoration of the Requa area would result in an overall local, long-term, minor, adverse effect on scenic resources.

The proposed new parking lots and nighttime security lighting would introduce new sources of light and glare at the Elk Valley Road site, which would have a moderate, adverse effect on nighttime views of the area. Implementation of landscape screening and light shielding mitigation measures, as described in Appendix C, Mitigation Measures, would reduce the adverse intensity of this impact to minor.

Summary of Alternative 2 Impacts. Alternative 2 would have local, long-term, negligible, beneficial effect on scenic resources due to the proposed restoration of the Requa site. The beneficial impacts of Alternative 2 would offset the short-term, adverse construction impacts, and the permanent adverse scenic impacts associated with the visual transformation of the Elk Valley Road site from a grassy landscape to a developed site and the introduction of new sources of light and glare from the proposed new parking lots and nighttime security lighting at the Elk Valley Road site.

Cumulative Impacts

The scenic resources impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, adverse impact on scenic resources due to the adverse effect of new Crescent City development and approximately 145,000 square feet of new development at the Elk Valley Road site. Alternative 2 would contribute a small beneficial increment to the overall cumulative impact.

Impairment

Alternative 2 would result in a negligible and beneficial impact on scenic resources and there would be no impairment of park resources or values.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a less than significant impact on aesthetics unless mitigation is incorporated. With the incorporation of scenic resources mitigation measures, as identified in Appendix C, Mitigation Measures, impacts to aesthetics would be less than significant.

Visitor Experience

Analysis

Construction-related Effects on Visitor Experience. Demolition and restoration activities at the Requa area and construction activities at the Aubell area would have a local, short-term, moderate, adverse effect on park visitor experience. Park visitors utilizing the Klamath River Overlook and the Coastal Trail near Requa as well as Jedediah Smith Redwoods State Park near the Aubell area would be adversely affected by construction noise and traffic.

Operation-related Effects on Visitor Experience. Alternative 2 would have a local, long-term, negligible impact on visitor experience. Under Alternative 2, NPS would discontinue use of the Requa area for maintenance and operation purposes, and conduct restoration of natural resources. No new visitor facilities would be provided.

Proposed Alternative 2 actions at the Aubell area would not increase the use of an existing neighborhood and regional park or other recreational facility such that substantial physical deterioration of the facility would occur or would be accelerated. In addition, Alternative 2 actions at the Aubell area would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. The impact of proposed Alternative 2 actions at the Aubell area would be less than significant pursuant to CEQA.

Summary of Alternative 2 Impacts. Overall, Alternative 2 would have local, short-term, moderate, adverse impact on visitor experience in the project area associated with construction impacts and a local, long-term, negligible visitor experience impact.

Cumulative Impacts

The visitor experience impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, beneficial impact on visitor experience. Proposed trailhead and parking area at the Aubell area under the comprehensive trail plan and the expanded trail system would beneficially affect visitor experience. Alternative 2 would slightly reduce the overall beneficial cumulative impact during construction on activities associated with Alternative 2.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a less than significant impact on recreation.

Park Operations and Facilities

Analysis

Construction-related Effects on Park Operations and Facilities. Demolition, restoration, and construction activities at the Requa and Aubell areas would have a short-term, minor, adverse impact on park operations. During the construction period, some park operations efforts would be diverted from routine upkeep and maintenance of park facilities to assist in the coordination of development of new facilities, and relocation of equipment and materials from old facilities. The presence of asbestos or lead-based paint in existing structures would be assessed through pre-demolition surveys, and abatement measures would be identified and implemented prior to demolition in accordance with federal regulations. Existing aboveground storage tanks at the area would be removed in accordance with relevant regulations (see Appendix C, Mitigation Measures). Continued investigation and remediation of diesel fuel, motor oil, gasoline, and oil and grease impacts to soil associated with aboveground storage tanks and past maintenance activities would occur in accordance with federal and state requirements (see Appendix C, Mitigation Measures).

During construction activities, park operations and facilities could be moderately and adversely affected by accidental fire, human injury, damage to existing utility lines, or accidental spill of hazardous materials. Adverse impacts would be reduced to minor with the incorporation of mitigation measures identified in Appendix C, Mitigation Measures, such as developing and implementing a safety plan, consulting with utilities companies, and storing hazardous materials in compliance with federal regulations.

Operation-related Effects on Park Operations and Facilities. NPS would have reduced maintenance responsibilities at the Requa area. No new visitor facilities would be provided at Requa. Maintenance of the Requa area would be similar to other park lands, and would have a negligible and adverse impact on park operations. The maintenance responsibilities would negligibly affect the park's ability to maintain existing park infrastructure and facilities and adequately protect park resources and provide for an effective visitor experience.

Alternative 2, however, would substantially improve NPS and CDPR's maintenance facility by developing new 40,000 square foot state-of-the-art facility at the Elk Valley Road site. The new facility would be designed to ensure operational efficiencies and functionality between maintenance departments. Consolidation of park operations to one facility would improve and streamline maintenance functions. The new facility would be designed to promote energy efficiency through the use of natural lighting, building orientation for winter sun and summer shade, and other passive solar opportunities. The new maintenance facility would have adequate space for both NPS and CDPR maintenance requirements. The maintenance facility would be supplied with city water, and the agencies would no longer need to operate water supply systems for their maintenance facilities. The Elk Valley Road and Aubell Lane road modifications would improve maintenance vehicle access to the proposed facility. The maintenance facility improvements would have a local, long-term, moderate, beneficial impact on the quality and effectiveness of park operations.

The location of the new Aubell maintenance facility, however, would be in the northern part of the park. The primary maintenance facility would be relocated from the more centralized Requa location. Establishment of the park's primary maintenance facility in the northern part of the parks would introduce some location-related operational inefficiencies associated with increased travel times to get NPS maintenance staff, equipment, and materials to work areas in the central and southern areas of the park. This would have a minor and adverse effect on park operations. The adverse effect would be partially reduced by the establishment of the maintenance facility near park headquarters in Crescent City, and the benefits associated with having primary park maintenance operations located near park headquarters, including efficiencies in contracting, procurement, and park management.

The new maintenance facility at the Elk Valley Road site would replace the existing maintenance facilities at Requa, as well as provide replacement facilities for the maintenance complex formerly located at Jedediah Smith Redwoods State Park that was irreparably damaged by fire. The Elk Valley Road facility would be closer to county service providers in Crescent City than former maintenance facility locations. The new maintenance facility would not result in substantial adverse physical impacts associated with the provision of or need for new or physically altered government facilities required to maintain acceptable service ratios, response times, or other performance objectives for fire or police protection. The Elk Valley Road maintenance facility would be in new buildings that conform to the Uniform Building Code requirements, and would

pose less fire hazard than existing facilities. Installation and operation of new underground or aboveground storage tanks at the Elk Valley Road site would comply with federal and state standards, and future storage, handling, use, and disposal of hazardous materials (such as waste oil and paint) associated with maintenance activities would comply with relevant regulations and manufacturer's instructions (see Appendix C, Mitigation Measures).

Regarding utilities and service systems, the new maintenance facility would conform to applicable wastewater treatment requirements of the Regional Water Quality Control Board, and correct existing water quality problems due to the operation of an outmoded sewage treatment plant at the Requa area. The Elk Valley Road facility would be provided with water service by the Bertsch Ocean View Water District. The water district has an adequate water supply to deliver water to the proposed facility as well as serve existing user needs. The Aubell area would need to be annexed into the water district, and the water district allows annexation for projects of this nature. Alternative 2 would involve the development of an onsite wastewater treatment and disposal system, including a septic tank and leach field system. Stormwater would be filtered through grassy swales (as identified in Appendix C, Mitigation Measures). The development of the wastewater and stormwater collection and treatment systems would conform to all applicable rules and regulations.

Solid waste from the Elk Valley Road facility would be picked up by a contractor for transfer to an approved landfill in Medford, similar to existing solid waste generated by the parks maintenance facilities at Requa and Aubell. Because the proposed facility is a replacement facility, it would not be a new waste stream generator for this landfill facility, and the landfill has sufficient permitted capacity to accommodate the project's solid waste disposal needs. In addition, the proposed action would comply with federal, state, and local statures and regulations related to solid waste.

Summary of Alternative 2 Impacts. Alternative 2 would have local, long-term, moderate, beneficial impact on the quality and effectiveness of park operations and facilities in the project area. The beneficial impacts associated with the operational efficiencies of the proposed new maintenance facility at the Elk Valley Road site would offset the adverse effects associated with construction activity and location-related operational inefficiencies due to siting the primary maintenance facility in the northern area of the park.

Cumulative Impacts

The park operations and facilities impact analysis for past, present, and reasonably foreseeable actions under Alternative 2 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 2 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, beneficial impact on the quality and effectiveness of park operations and facilities. The beneficial impacts associated with the operational efficiencies of the proposed new maintenance facility at the Elk Valley Road site would offset the adverse effects associated with construction activity; new maintenance responsibilities at Requa, the trailhead at Aubell and expanded trail system under the comprehensive trail plan, and location-related operational inefficiencies due to siting the primary maintenance facility in the northern area of the park. Alternative 2 would contribute to the overall cumulative impact more than other projects.

CEQA Determination

As described in the paragraphs above and in Appendix A, CEQA Initial Study, the proposed action would have a less than significant impact on public services and utilities and service systems.

Alternative 3

Geology, Geologic Hazards, and Soils

Analysis

Construction-related Effects on Soils and Slope Stability. Alternative 3 would construct a new maintenance facility at the Midway site at Aubell, and decommission the Requa facility. Construction activities at the 13-acre Aubell area would largely be similar to those described in Alternative 2, with the exception of widening approximately 1,800 feet of Aubell Lane to two lanes to provide adequate road service and construction of an arch culvert over the unnamed tributary to Elk Creek. The arch culvert would accommodate the road widening, and adequately convey the creek's 100-year flood flows.

Decommissioning of the Requa facility under Alternative 3 would be less extensive than in Alternative 2. Structural footing and foundations would be left in place, as would all surface roads and retaining walls. The existing drainage system would be maintained by NPS to ensure long-term system operability. Minor grading would occur at the area; however, due to the small amount of demolition planned an erosion control plan would not be implemented. Construction-related effects would result in local, short-term, moderate, adverse impacts.

Overall, potential construction-related soil erosion would be largely similar to that in Alternative 2 at Aubell. Although the extent of demolition would be reduced at Requa under Alternative 3, removal of the sewage treatment plant, water storage tanks, perimeter fencing and overhead power lines without implementing erosion control measures would increase short-term soil erosion at the area. Mitigation included in this alternative (see Appendix C, Mitigation Measures) to reduce erosion includes limiting stockpiles during construction, limiting soil disturbance during periods of rain, implementing erosion control measures, and ensuring native foliage protection during construction at Aubell. Soil degradation would be minimal due to erosion controls and the short-term nature of the construction activities. Implementation of mitigation measures would reduce the intensity of the adverse impacts to minor.

Operation-related Effects on Soils and Slope Stability. Under this alternative, relocation of NPS operations to Aubell would reduce exposure of NPS personnel and structures to landslide hazards resulting in a moderate, beneficial impact.

Demolition of Requa infrastructure would not repair the landslide or halt downslope creep; however, demolition activities would not increase slope instability. Potential impacts to slope instability are similar to those in Alternative 1 (moderate and adverse).

Soil erosion and slope stability impacts at Aubell would be similar to those in Alternative 2. Potential moderate and adverse impacts to soils associated with future operations at Aubell would be minimized by installation of a stormwater system which incorporates grassy swales to reduce stormwater runoff rates, and filter suspended sediments prior to discharge into Elk Creek. In addition, the proposed arch culvert would be constructed outside the 100-year floodplain, which

would reduce soil erosion. Slopes at the Midway site are relatively gentle, and future slope instability is therefore not anticipated.

Operation-related Effects of Seismic Safety. Potential seismic impacts would be identical to those in Alternative 2, as relocation of NPS operations into newly constructed buildings at Aubell would reduce potential exposure of NPS personnel to seismic hazards compared to the No Action Alternative resulting in a moderate and beneficial impact.

Summary of Alternative 3 Impacts. Alternative 3 would have a local, long-term, negligible, beneficial impact. Earthquake ground shaking would continue to affect both the Aubell and Requa areas; however, demolition of damaged, older structures at Requa and replacement with new structures and roadways at Aubell would reduce exposure of NPS personnel to seismic hazards. Slopes at Requa would remain unstable, with ongoing downslope creep and landsliding would continue, and the existing drainage system would continue to be prone to breakage from slope movement or clogging from vegetation and debris. Installation of a stormwater system at Aubell that slows and filters stormwater runoff prior to discharge into the unnamed tributary of Elk Creek would reduce potential long-term erosion of tributary stream bed or banks. The beneficial operation-related effects of Alternative 3 would offset the adverse construction-related impacts and ongoing erosion issues at Requa.

Cumulative Impacts

The geology, geologic hazards, and soils impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, negligible, beneficial impact on geology, geologic hazards, and soils due to an overall decreased exposure of individuals and property to seismic and geologic hazards and continued landslide activity at Requa. Alternative 3 would contribute to the overall cumulative impact more than other projects.

Impairment

Alternative 3 would have a negligible and beneficial impact on geologic resources and there would be no impairment of park resources or values.

Hydrology, Floodplains, and Water Quality

Analysis

Operation-related Effects on Flooding. The Midway site is not located within a 100-year flood plain, and stormwater flows at the new facility would be managed by installation of a stormwater system which incorporates grassy swales that regulates stormwater flow rates into the unnamed tributary of Elk Creek. Construction of new impervious surface areas would increase overall flow rates in the tributary during large precipitation events, and could result in minor and adverse impacts. However, compliance with mitigation measures identified in Appendix C would require the stormwater system to prevent onsite or downstream flooding, thereby reducing potential adverse impacts to negligible. The proposed arch culvert over the tributary would be sized to accommodate 100-year flood flows.

The existing stormwater drainage system at Requa would continue to be maintained by NPS, and the area's steep slopes would effectively prevent flooding at Requa.

Construction-related Effects on Floodplains and Water Quality. Construction-related effects on water quality under Alternative 3 at Aubell would be similar to those described for Alternative 2, with the exception of the additional widening of approximately 1,800 feet of Aubell Lane to two lanes to provide adequate road service and construction of an arch culvert over the unnamed tributary of Elk Creek.

Decommissioning the Requa facility under Alternative 3 would be less extensive than in Alternative 2. Structural footing and foundations would be left in place, as would all surface roads and retaining walls. The existing drainage system would be maintained by NPS to ensure long-term system operability. Minor grading would occur at the area; however, due to the small amount of demolition proposed an erosion control plan would not be implemented at Requa.

Overall, potential construction-related soil erosion would be largely similar to that described in Alternative 2 at Aubell resulting in moderate and adverse impacts to water quality. Construction activities could cause erosion of exposed soil and subsequent sedimentation of surface water flows (such as tributaries of Elk Creek), localized flooding, and associated water quality impacts, should adequate measures not be implemented. Although the extent of demolition would be reduced at Requa under Alternative 3, removal of the sewage treatment plant, water storage tanks, perimeter fencing, and overhead power lines would increase short-term soil erosion at the area. With implementation of mitigation measures (see Appendix C, Mitigation Measures) such as implementing a Stormwater Pollution Prevention Plan, the adverse effects on water quality would be reduced to minor.

Operation-related Effects on Water Quality. Under Alternative 3, water quality impacts at Aubell would be similar to those described in Alternative 2. Stormwater flows would be managed by installation of a stormwater system, which could have a minor, adverse effect on water quality. The stormwater system would incorporate grassy swales that reduce stormwater flow rates and remove suspended sediments and other pollutants prior to discharge into the unnamed tributary of Elk Creek. In addition, a new wastewater treatment and disposal system would be designed and installed that meets current State/Regional Water Quality Control Board standards.

Decommissioning of the Requa facility under Alternative 3 would include removal of the existing sewage treatment plant, which would reduce potential degradation to water quality. Moderate and beneficial impacts associated with removal of the sewage treatment plant would be identical to those described under Alternative 2. Structural footing and foundations would be left in place, as would all surface roads and retaining walls. The existing drainage system would be maintained by NPS to ensure long-term system operability. Minor grading would occur at the area; however, due to the small amount of demolition occurring an erosion control plan would not be implemented.

Summary of Alternative 3 Impacts. Impacts related to flooding and water quality under Alternative 3 would be local, long-term, negligible, and beneficial. Beneficial operation-related impacts associated with improved water quality and Aubell facility designs to prevent flooding would offset short-term and adverse construction related impacts on water quality.

Cumulative Impacts

The hydrology, floodplains, and water quality impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, adverse impact on hydrology, floodplains, and water quality. Short-term adverse impacts associated with stormwater runoff from construction areas would occur in both Alternative 3 and the past, present, and reasonably foreseeable actions, although implementation of a Stormwater Pollution Prevention Plan would reduce the severity of these impacts. Past, present, and reasonably foreseeable actions could result in long-term increased pollutant concentrations in stormwater and increased rate and volume of stormwater discharge into local waterbodies such as Elk Creek; however, beneficial impacts associated with removal of the existing sewage treatment plant at Requa and filtering of stormwater flows from automobile parking and maintenance areas at the Midway site would partially reduce these adverse impacts. The beneficial impacts of Alternative 3 would contribute a small increment to the reduction of the adverse cumulative impact.

Impairment

Alternative 3 would have a negligible and beneficial impact on hydrology, floodplains, and water quality and there would be no impairment of park resources or values.

Wetlands

Analysis

Construction-related Effects on Wetlands. Alternative 3 would involve work activities within upland areas at the Requa area. No wetlands would be affected by project activities at the Requa area.

Under Alternative 3, constructed-related effects on wetlands would be local, short-term, moderate and adverse. Activities at the Aubell area would involve placement of facilities, specifically a stormwater treatment system with grassy swales, immediately adjacent to the red alder/Sitka spruce riparian corridor of the northernmost tributary to Elk Creek, a palustrine forested wetland. A 100-foot setback from each bank of the creek would minimize construction impacts. While no activity is planned within the setback area, this wetland vegetation could be exposed to construction impacts such as trampling and soil compaction. Without placement of a physical barrier at the creek setback, soils could migrate and discharge towards the creek during grading and excavation activities for the swale.

A new arch culvert would be constructed over the northernmost tributary that crosses Aubell Lane. The arch culvert would be constructed outside of the 100-year floodplain of the creek. While installing this arch culvert, the agencies would avoid placement of new structures, such as footings, within wetlands. During construction activities for the arch culvert as well as during construction of a widened road crossing, the creek would be potentially exposed to soils escaping from the work area, which could temporarily reduce water quality and adversely affect the function and value of the creek. Additionally, without placement of a physical barrier near waterways to contain work activities, soils could migrate and discharge towards the creek during grading and excavation activities for the arch culvert.

Implementation of wetland, vegetation, revegetation, erosion control, and stormwater pollution prevention mitigation measures (see Appendix C, Mitigation Measures) including but not limited to, avoiding impacts on riparian vegetation, installing silt fencing and/or erosion control devices around excavation areas, and revegetating disturbed areas with native plant species, would reduce the intensity of the impact on wetlands to minor. NPS and CDPR (as applicable) would also implement conditions specified in permits obtained from the U.S. Army Corps of Engineers, the North Coast Regional Water Quality Control Board, and the California Department of Fish and Game.

Operation-related Effects on Wetlands. Operation-related effects on wetlands under Alternative 3 would be local, long-term, minor and adverse. With the implementation of mitigation measures, exposed bare soil within the riparian corridor would be planted or seeded following implementation of Alternative 3 at the Aubell area. Within the grassy swales (or vegetated filter strips) sediments would be removed from the water to avoid transporting sediments to the creek. The arch culvert would be sized to convey 100-year flood flows, and the banks would be protected with appropriate erosion control material. The swales would serve as a buffer between the riparian vegetation and the stormwater treatment system. The structures would require minor maintenance.

Summary of Alternative 3 Impacts. No wetlands would be affected by project activities at the Requa area under Alternative 3. With implementation of mitigation measures, Alternative 3 would result in local, short- and long-term, minor, adverse effects on wetlands. Potential construction-related effects on wetlands at the Aubell area under Alternative 3 would include trampling and soil compaction during construction of the grassy swale and arch culvert, soil discharge into the creek during construction activities for the arch culvert and during grading activities for the swale.

Cumulative Impacts

The wetlands impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on wetlands. Alternative 3 would contribute a small increment to the overall cumulative impact.

Impairment

Alternative 3 would result in a minor and adverse impacts on wetlands and there would be no impairment of park resources or values.

Vegetation

Analysis

Construction-related Effects on Vegetation. Effects on vegetation at the Requa area would be local, short-term, minor and adverse. Because Alternative 3 would result in minimal earth-moving activities at the Requa area, the potential for erosion and sediment movement during the rainy season would be similar to Alternative 1. Similar adverse effects of dust on plants during demolition activities in the dry season would result in conditions as described under Alternative 2. Alternative 3 could involve removing non-native plant species, seeding with native

plant species in 5 percent of the west and east areas, and allowing the north area to revegetate naturally. Vegetation would take several years to establish and provide cover for wildlife.

Implementation of best management practices as well as erosion control, vegetation, revegetation, tree protection and dust mitigation measures (see Appendix C, Mitigation Measures), would reduce the intensity on vegetation to minor.

Disturbance to vegetation at the Aubell area would be moderate and adverse, resulting in impacts that would be clearly detectable. Under Alternative 3, construction impacts at the Aubell area would require removing approximately 12 acres of mostly disturbed prairie grassland (including a small area of native grasses) due to construction of facilities and widening the intersection of Elk Valley Road and Aubell Lane. Arch culvert installation proposed under Alternative 3 would result in the removal of or damage to tree roots when conducting excavation activities and providing access for heavy equipment. Vegetation adjacent to the proposed facilities could be exposed to construction impacts such as trampling and removal of or damage to tree roots during grading. Trampling could result in erosion, habitat fragmentation, soil and root compaction, and plant mortality in localized areas.

To minimize the intensity of effects on vegetation, the Aubell area would be landscaped with native grasses, shrubs, and trees. Implementation of best management practices as well as vegetation mitigation measures (see Appendix C, Mitigation Measures) would require planting exposed bare areas and avoiding or minimizing disturbance on vegetation adjacent to the limits of construction by installing protective fencing material. Implementation of the revegetation, tree protection and dust abatement mitigation measures (see Appendix C, Mitigation Measures) would reduce the intensity of the impact on vegetation to minor.

Operation-related Effects on Vegetation. At the Requa area, vegetation would begin to establish following the restoration effort, and in the long-term would cover bare areas. The remaining building pads would confine vegetation to natural areas. Following implementation of the restoration efforts, the Requa area would require periodic maintenance and monitoring. Without these actions, the operation-related effects would be local, negligible and beneficial. Although NPS would remove non-native plant species for two growing seasons as part of the project, implementation of revegetation mitigation measures (see Appendix C, Mitigation Measures), including, but not limited to, requiring monitoring would measure the success of the restoration effort. The intensity of the effect would remain negligible and beneficial.

Immediately following construction at the Aubell areas, vegetation communities within disturbed areas would be bare and exposed. Landscaping disturbed areas with native species would reduce the exposure to direct sunlight, wind, and fog-drip, and thus, reduce the effect of creating conditions favorable to non-native annual species. Implementation of erosion control, revegetation efforts, and vegetation measures would include spreading topsoil on disturbed bare areas, mulching, protecting wetlands and creeks from dislodged sediments, and controlling introduction of non-native species. With implementation of mitigation measures, the impact on vegetation would be local, long-term, minor, and adverse.

Summary of Alternative 3 Impacts. Overall, Alternative 3 would result in local, short- and long-term, minor, adverse effects on vegetation due to temporary construction-related effects and temporary and permanent vegetation removal activities. Although the Requa area would be partially restored, vegetation growth and full cover would require many years to establish and

provide habitat for a wide range of wildlife species. Therefore, the adverse effects on vegetation associated with construction activities and new development would offset the beneficial effects of restoration.

Cumulative Impacts

The vegetation impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on vegetation. Alternative 3 would contribute a small increment to the overall adverse cumulative impact.

Impairment

Alternative 3 would result in a minor and adverse impact on vegetation and there would be no impairment of park resources or values.

Wildlife

Analysis

Construction-related Effects on Wildlife. Alternative 3 would involve a limited demolition and earth-moving effort at the Requa area. Common wildlife at both Requa and Aubell areas would be temporarily exposed to construction-related noise and human disturbance within a localized area under Alternative 3 and would result in a moderate, adverse effect. Ambient noise levels would increase substantially during project construction. Common wildlife would be exposed to noise levels and human disturbance greater than existing ambient levels (i.e., greater than about 50 A-weighted decibels). Noise and human disturbance during construction activities within this period would be continuous and greater than effects generated by normal activities at both areas. However, noise from construction would avoid the sensitive nest switching/chick feeding periods of common bird species. During demolition and excavation activities at the Requa area as well as arch culvert and utility installation at the Aubell area, small mammals could become entrapped in trenches, pits, or pipes. Operation of heavy equipment at both areas could result in mortality of common amphibians, reptiles, and small mammals. Installation of the arch culvert at the Aubell area could temporarily increase sediment levels in the northernmost tributary to Elk Creek, and as a result, adversely affect aquatic common wildlife by degrading water quality. Adverse effects at the Aubell area could include smothering of eggs, clogged air passages, or suffocation.

Project activities would be localized to limit adverse effects on wildlife. Implementation of mitigation measures, including covering open pipes and pits daily, removing food and waste, and implementing erosion and sedimentation controls (see Appendix C, Mitigation Measures) would reduce the intensity of construction-related effects on common wildlife to minor.

Operation-related Effects on Wildlife. At the Requa area, vegetation would begin to establish following the restoration effort, and in the long-term would cover bare areas and provide cover for wildlife. Following implementation of measures to minimize adverse effects on common wildlife during demolition and restoration activities, common wildlife that may have fled would re-occupy the disturbed area. Noise and human disturbance would be lower than existing levels due to a lack of noise-generating facilities. Establishment of vegetation would increase the wildlife

use at the Requa area. Because the Requa area would experience restoration, the beneficial effect on wildlife would be long-term and minor.

Similar to Alternative 2, terrestrial habitat for common wildlife species at the Aubell area would be affected in the long-term resulting in a minor, adverse impact. Species that used the area previously, such as Roosevelt elk, would be forced to use other similar areas (such as the Elk Valley Road site or the existing ranch site). The adjacent prairie grasslands could serve as comparable habitat to the Midway site (see figure II-2, Chapter 2, Alternatives), but the use of the site by wildlife species may be limited. The Midway site would attract wildlife species that are habituated to humans due to the increase in noise levels and new facilities. New facilities near second-growth Sitka spruce forest and the riparian corridor of the southernmost tributary to Elk Creek would increase human activity at the Aubell area.

Implementation of wildlife mitigation measures (see Appendix C, Mitigation Measures), including routinely removing waste, monitoring activities, and to the extent feasible shielding or directing building lighting away from natural areas would reduce the intensity of this operation-related effect to minor.

Summary of Alternative 3 Impacts. Alternative 3 would have a local, short- and long-term, minor adverse effect on wildlife. Adverse wildlife impacts associated construction-related noise and human disturbance, new facility development would occur at the Aubell area while beneficial wildlife impacts would occur at the Requa area associated with restoration of the area.

Cumulative Impacts

The wildlife impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on common wildlife. Alternative 3 would contribute a small increment to the overall cumulative adverse impact.

Impairment

Alternative 3 would result in a minor and adverse impacts on common wildlife and there would be no impairment of park resources or values.

Special-status Species

Analysis

Construction-related Effects on Special-status Species. Proposed activities under Alternative 3 at the Requa area would create noise and human disturbance that could potentially harass bird species protected by the Migratory Bird Treaty Act. Construction activities at the Midway site would be located within a quarter-mile of a strip of forest consisting of mature second-growth conifers, which is potential habitat for Northern spotted owl. If spotted owl occupies the second-growth forest strip, construction noise and other activities would have a local, short-term, moderate, adverse effect on the species. Northern spotted owl surveys would be conducted prior to construction activities, and should special-status species be found within the second-growth forest strip in the Aubell area, additional agency consultation would be undertaken with the

U.S. Fish and Wildlife Service to determine construction stipulations that would be required. To reduce the exposure of noise levels and human disturbance greater than existing ambient levels (i.e., greater than about 50 A-weighted decibels) on special-status species protected by the Migratory Bird Treaty Act at both the Requa and Aubell areas a qualified biological monitor would be on-site during project construction to ensure protection of sensitive resources (see Appendix C, Mitigation Measures).

To further protect breeding special-status bird species, NPS and CDPR (as applicable) would implement on-going program and new measures to reduce potential threats to listed special-status bird species as part of the *Conservation Strategy for Managing Threatened and Endangered Species in Redwood National and State Parks* (NPS 2003a), including but not limited to, noise reduction measures and stopping work if listed special-status bird species are encountered during project activities. These actions would limit potential disturbance to special-status bird species, including Northern spotted owl and birds protected by the Migratory Bird Treaty Act, during construction activities. Implementation of mitigation measures would reduce the adverse construction-related impacts to negligible.

Proposed construction of the grassy swale and the arch culvert at the Aubell area under Alternative 3 would potentially discharge sediments to the northernmost tributary to Elk Creek, which could adversely affect potentially occurring special-status aquatic species, including northern red-legged frog, foothill yellow-legged frog, and tailed frog. These effects in the project area could also adversely affect special-status fish species, such as coho salmon, in Elk Creek downstream of the northernmost tributary by decreasing water quality and impeding fish passage. Special-status amphibian species potentially migrate between the prairie grassland and the riparian corridors of the tributaries to Elk Creek, and could be exposed to heavy equipment construction impacts. Implementation of mitigation measures, including erosion control, biological monitoring, and erecting appropriate fencing material to restrict the work area (see Appendix C, Mitigation Measures) would reduce the intensity of construction-related effects on special-status amphibian species and reptile species to negligible.

Operation-related Effects on Special-status Species. The beneficial effect on special-status species at the Requa area would be long-term and minor due to the restoration proposed for the Requa area. Vegetation would begin to establish following the restoration effort, and in the long-term would cover bare areas and provide habitat for mainly special-status bird species protected by the Migratory Bird Treaty Act. Following implementation of measures to minimize adverse effects on special-status avian species during demolition and restoration activities, species that may have fled would re-occupy the disturbed area once vegetation has established. Noise and human disturbance would be lower than existing levels due to a lack of noise-generating facilities. Establishment of vegetation would increase the wildlife use at the Requa area.

Similar to Alternative 2, new facilities at the Midway site would increase human activity near second-growth Sitka spruce forest and the riparian corridor of the southernmost tributary to Elk Creek. New facilities would also create new sources of night lights, which could harass wildlife. To mitigate adverse effects on special-status species, implementation of special-status species mitigation measures, including maintenance and monitoring, and food and waste removal (see Appendix C, Mitigation Measures) would reduce the intensity of operation-related effects on special-status species to negligible. Implementation of scenic resource measures would reduce the adverse effect of lighting on special-status wildlife.

Summary of Alternative 3 Impacts. Overall, with implementation of mitigation measures, Alternative 3 would result in a local, short- and long-term, negligible, adverse effects on special-status species. Construction-related activities would have adverse effects on special-status species at due to exposure to noise and human disturbance, trampling, and potential discharge of sediments to the northernmost tributary to Elk Creek. Special-status bird species at both the Requa and Aubell areas would be temporarily exposed to construction-related noise and human disturbance within a localized area. Adverse special-status species impacts associated construction-related noise and human disturbance, new facility development would occur at the Aubell area while beneficial impacts would occur at the Requa area associated with restoration of the area.

Cumulative Impacts

The special-status species impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions collectively would result in a regional, short- and long-term, minor, adverse impact on special-status species. Alternative 3 would contribute a small increment to the overall cumulative adverse impact.

Impairment

Alternative 3 would result in a negligible and adverse impacts on special-status species and there would be no impairment of park resources or values.

Air Quality

Analysis

Construction-related Effects on Air Quality. As described under Alternative 2, construction-related activities associated with the demolition and restoration of the Requa area and the development of a new maintenance facility at the Midway site at Aubell would have a local, short-term, minor, adverse effect on air quality in the project area. Air quality effects associated with demolishing Requa buildings (leaving their foundations), removal of the wastewater treatment plant and other utilities, containment and removal of existing asbestos and lead paint, and grading at the area would create temporary air emissions. Constructing the new maintenance facility buildings, area development (including earthwork and grading), installation of utilities, and Elk Valley Road and Aubell Lane road improvements would temporarily create new air emissions. Alternative 3 demolition and construction activities would create temporary engine emissions and generate considerable amounts of dust, including particulates with a diameter of 10 microns or less (primarily fugitive dust from construction activities and tailpipe emissions from the operation of heavy-duty equipment). Dust emissions generated by various construction activities would vary depending on the level and type of activity, silt content of the soil, and weather conditions during the two-year construction period. Similar to Alternative 2, Emissions generated from construction activities under Alternative 3 would include tailpipe emissions from heavy-duty equipment, worker commute trips, and construction truck trips. The increases in emissions would be proximate to sensitive receptors, including adjacent residences and nearby schools. However, construction activities would not affect the Class I airshed designation of the park. Alternative 3 construction activities would have local, short-term, minor, adverse impacts to air quality.

As identified in Appendix C, Mitigation Measures, dust abatement measures to mitigate adverse construction-related impacts to air quality would be implemented as part of this alternative. These measures include practices such as site watering, covering stockpiles, covering haul trucks, and vehicle emission controls in order to reduce both tailpipe and fugitive dust emissions. With mitigation measures, the effect of air pollutant emissions associated with construction activities at the project area under Alternative 3 would be reduced, however the intensity of the impact would remain minor.

Operation-related Effects on Air Quality. Under Alternative 3, emissions-related activities at the Requa area would be reduced resulting in a local, long-term, minor, beneficial impact. The discontinuation of park operations and maintenance activities at Requa would be slightly detectable. NPS would continue to have ongoing maintenance requirements at Requa because the existing retaining walls and above-ground drainage facilities would be abandoned on-site. In addition, Requa area would be available to pedestrian use by park visitors; however no new visitor facilities would be included and few, if any, specific Requa area visitor trips are anticipated. The air emissions associated with ongoing maintenance at Requa vehicle trips would slightly offset the beneficial impact of removing maintenance operations from the area.

Development of NPS and CDPR's replacement maintenance facility at the Aubell area would introduce new operational emissions at the Midway site, including maintenance vehicle emissions, and emissions related to heating, cooling, and other activities at the new facility. However, the new facility would include more efficient building technology than the existing facility. Alternative 3 operational activities would have local, long-term, minor, adverse impacts to air quality at the Aubell area. The slightly detectable increases in emissions would be proximate to sensitive receptors, including adjacent residences and schools located within 0.5 to 1.5 miles of the Aubell area.

Most park employees reside in Crescent City and the length of employee trips under Alternative 3 would be reduced by traveling to a new facility located at Aubell, reducing emission impacts associated with the addition of operational activities at Aubell. There would be some longer work trips into the park, but on balance, then would be a reduction in vehicle miles traveled.

Summary of Alternative 3 Impacts. Alternative 3 would have a local, short- and long-term, minor, adverse impact on air quality. Construction activities would have short-term and minor adverse effects on air quality at the Requa and Aubell areas related to use of heavy equipment, dust generation, and construction-related vehicle trips. These adverse air quality impacts would be reduced by the implementation of dust abatement measures as described in Appendix C, Mitigation Measures. Development of a new maintenance facility at the Aubell area would result in slightly detectable increases in emissions that would be proximate to sensitive receptors. Most park employees reside in Crescent City and the length of employee trips under Alternative 3 would be reduced by traveling to a new facility located at Aubell, reducing commuter emission impacts associated with the addition of operational activities at Aubell. In general, air quality would have a minor improvement due to reduced vehicle trip miles and more efficient building technology.

Cumulative Impacts

The air quality impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions would result in a local, long-term, moderate, adverse impact on air quality. Alternative 3 would have a minor contribution to the emissions created by the past, present, and reasonably foreseeable actions, including objectionable odors in the vicinity of the transfer station. Alternative 3 would contribute a small increment to the overall cumulative impact.

Impairment

Alternative 3 would result in a minor and adverse impact to air quality and there would be no impairment of park resources or values.

Natural Soundscapes

Analysis

Construction-related Effects on Natural Soundscapes. Similar to Alternative 2, demolition, restoration, and construction activities under Alternative 3 at the Requa and Aubell areas would have local, short-term, moderate, adverse natural soundscape effect in the project area.

Alternative 3 would involve an approximately 2-year construction period. Construction-related noise at Requa would include noise associated with demolishing buildings (leaving their foundations in place), removal of the wastewater treatment plant and other utilities, grading activities, and noise associated with material haul vehicles and worker commute trips. At the Midway site, site development (including earthwork and grading), installation of utilities, constructing the new maintenance facility buildings, Elk Valley Road and Aubell Lane road improvements, and installation of a new arch culvert at the Aubell area would temporarily create new noise sources. Such noise could affect park wildlife and nearby residences. Recreational users on nearby trails and at the Klamath River Overlook could be affected by construction noise at the Requa area. Table IV-1, above, provides typical noise levels generated by various types of heavy equipment during construction.

Natural soundscape effects in the project area would vary depending upon a number of factors, such as the number and types of equipment in operation on a given day, usage rates, the level of background noise in the area, and the distance between sensitive uses and construction activities. Similar to Alternative 2, operation of construction equipment would increase the ambient noise levels in the project area, and such increases would be readily detectable. The increase in project area noise levels would be proximate to sensitive receptors, including adjacent residences and nearby park visitors.

As described in Appendix C, Mitigation Measures, Best Management Practices would be employed to mitigate adverse noise impacts, including implementation of standard noise abatement measures during construction, use of best-available noise control techniques where feasible, use of hydraulically or electrically powered impact tools when feasible, and siting of stationary noise sources as far from noise-sensitive uses as possible. Although the mitigation measures would reduce construction noise levels, during construction the noise levels would

continue to be readily detectable and would have an appreciable effect, resulting in an overall moderate adverse impact.

Operation-related Effects on Natural Soundscapes. The discontinuation of park operations and maintenance activities at the Requa area would have a local, long-term, moderate, beneficial impact on the soundscape. The Requa area would be available to pedestrian use by park visitors; however, no new visitor facilities would be included. Few, if any, specific Requa area trips are anticipated and therefore, no new sources of park visitor-related noise are anticipated. Ongoing maintenance activities at the Requa area to maintain existing retaining walls and the drainage system would result in occasional elevated noise levels associated with these activities.

Development of the replacement maintenance facility at the Aubell area would introduce a new source of noise at the Midway site, including noise associated with maintenance operations, carpentry, welding, sign building, equipment operation and repair, maintenance vehicles, and the voices and activities of NPS and CDPR staff at the new facility. Alternative 3 operational activities would have local, long-term, moderate, adverse impacts to the natural soundscape environment at the Midway site. Although existing ambient noise levels at the Aubell area are elevated associated with current operations activities, the adjacent heliport, and traffic on Elk Valley Road, the new facilities would result in detectable increases in ambient noise levels in the area. The increase in project area noise levels would be proximate to sensitive receptors, including adjacent residences. As identified in Appendix C, Mitigation Measures, the new facility would be designed to locate noise intensive maintenance operations as distant from sensitive receptors as possible, and the new building would be designed to attenuate interior noise so that noise generated within the maintenance facility would be less audible in the ambient environment.

Summary of Alternative 3 Impacts. Alternative 3 would have a local, long-term, minor, adverse impact on the natural soundscape environment. Construction activities and development of the new maintenance facility at the Midway site would adversely affect the local natural soundscape environment; however, the beneficial impacts of reduced noise levels at the Requa area would reduce the overall adverse effect under Alternative 3.

Cumulative Impacts

The analysis of impacts on natural soundscapes for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions would result in a regional, long-term, minor, adverse impact on the natural soundscape environment. The creation of new noise sources associated with Alternative 3 and past, present, and reasonably foreseeable actions construction activities and new developments would have a detectable impact on the project area soundscape. Alternative 3 would contribute a small increment to the overall cumulative impact.

Impairment

Alternative 3 would result in a minor, and adverse impact to natural soundscapes and there would be no impairment of park resources or values.

Cultural Resources

Analysis

Construction-related Effects on Archeology. Construction activities at the 13-acre Aubell area would largely be similar to those described in Alternative 2, with the exception of widening approximately 1,800 feet of Aubell Lane to two lanes to provide adequate road service and construction of an arch culvert over the unnamed tributary to Elk Creek. The arch culvert would accommodate the road widening, and adequately convey the creek's 100-year flood flows. The decommissioning of the Requa facility, or the Klamath Air Force Station complex, under Alternative 3 would be less extensive than in Alternative 2 and the potential to disturb unknown archeological resources would be minimized. Regardless, the potential still exists for the discovery of unidentified or unexpected subsurface archeological resources during ground disturbance; therefore, the proposed action would be considered a local, long-term, moderate, adverse impact. However, implementation of mitigation measures described in Appendix C, Mitigation Measures, such as accidental find policies would reduce this adverse impact to local, long-term, minor, and adverse.

Construction-related Effects on Historic Resources. Similar to Alternative 2, Alternative 3 would construct a new maintenance facility at the Midway site at Aubell, and decommission and remove the Requa facility. No National Register of Historic Places eligible resources were identified within the Aubell area of potential effect; therefore, no historic resources would be affected by this alternative to the Aubell site. The Requa area includes a complex of buildings and structures that represent the former Klamath Air Force Station, which was found to lack sufficient integrity to be eligible for listing in the National Register of Historic Places (Sloan 2004). Decommission and removal of the Requa facility would be considered a minor, adverse impact to historic resources.

Construction-related Effects on Ethnographic Resources. No significant ethnographic sites were identified on the Aubell site. However, tribal elders have indicated that the Requa area is associated with myths and songs on the Yurok Creation story (Sloan 2004). Consequently, the Requa area may be eligible for the National Register of Historic Places as a traditional cultural property. Similar to Alternative 2, actions associated with construction activities at Requa could cause inadvertent adverse effects to this resource, resulting in a local, short-term, moderate, adverse impact. However, the undertaking at Requa would return the landscape to a more natural condition; the removal of the Klamath Air Force Station complex would return the landscape to the conditions much closer to those valued by the Yurok tribe. In addition, the planning and management of the restoration of the Requa area would be conducted in close consultation with the Yurok Tribal Heritage Preservation Officer. These measures, described in Appendix C, would reduce potential impacts to the traditional cultural property to local, short-term, minor, and adverse.

Operation-Related Effects on Ethnographic Resources. With the removal of the former Klamath Air Force Station complex, the Requa area would more closely resemble the conditions that existed prior to the construction of the former Klamath Air Force Station, returning the landscape closer to the conditions valued by the Yurok tribe. However, the degree of beneficial change to the traditional cultural property is subject to interpretation and continuing consultation (see Appendix C). Consequently, the operational effects to ethnographic resources would be considered local, long-term, minor, and beneficial.

Summary of Alternative 3 Impacts. Alternative 3 would have a local, long-term, moderate, adverse effect on archeological resources due to the potential disturbance of unknown subsurface archeological resources. Implementation of mitigation measures identified in Appendix C would reduce the impact intensity to minor. The decommission and removal of the Requa facility would be considered a local, long-term, minor, adverse impact to historic resources. Actions associated with construction activities at Requa could cause inadvertent adverse effects to the traditional cultural property, resulting in a local, short-term, moderate, adverse impact. However, implementation of cultural resource mitigation measures, as described in Appendix C, Mitigation Measures, would reduce impacts to local, short-term, minor, and adverse. Removal of the Requa facility, with implementation of mitigation measures identified in Appendix C, would return the natural landscape to the conditions valued by the Yurok tribe and would result in a local, long-term, minor, beneficial impact.

Cumulative Impacts

The cumulative impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the cumulative projects would have a regional, long-term, negligible, adverse cumulative impact on archeological and historical resources. Construction activities at Requa and Aubell in would contribute a small increment to the cumulative loss of archaeological and historical resources within the region. Alternative 3 and the cumulative projects would have a minor, beneficial impact on ethnographic resources due in large part to the restoration of the Requa area.

Impairment

Alternative 3 would result in a minor and adverse effect on archeological and historic resources and a minor and beneficial impact on ethnographic resources; there would be no impairment of park resources or values.

Transportation

Analysis

Construction-related Transportation Effects. Requa Road would experience a temporary increase in construction-related traffic due to the demolition and removal of existing facilities. Adverse construction-related transportation impacts would be primarily related to temporary increases in truck traffic volumes on area roadways and the number of turning movements between Requa Road and U.S. Highway 101. The demolition and restoration activities at Requa would occur over an approximately 12-month period, though most activities would occur during the 2-month demolition period. Construction-related traffic would result in a temporary and intermittent lessening of the capacities of area roadways because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

Aubell Lane would experience a temporary increase in construction-related traffic during construction activity at the Aubell area. Adverse construction-related transportation impacts would primarily be related to the widening of Aubell Lane, temporary increases in truck traffic volumes on area roadways, and in the number of turning movements between Elk Valley Road and the staging area on Aubell Lane. Adding acceleration and deceleration lanes on Elk Valley

Road at its intersection with Aubell Lane would cause temporary adverse construction-related transportation impacts. The installation of the water pipe in Elk Valley Road for approximately 2,400 feet would require one-way traffic during some phases of the construction process to allow room for the trenching and work area.

In addition, approximately 1,800 feet of Aubell Lane would be widened to two lanes to provide adequate capacity for vehicles traveling to/from the new facilities. The roadway widening would include the installation of 1,800 feet of pipeline for water, the placement of a new arch culvert over the unnamed tributary to Elk Creek, and 1,800 feet of power lines along Aubell Lane to the project site; these projects would cause temporary delays in traffic due to construction staging in the roadway.

Construction activities, including new facility development, roadway widening, arched culvert placement, and power line erection, would generate varying numbers of vehicle trips (depending on the type of work) to accommodate construction workers, trucks, and equipment. Construction-related traffic would cause a temporary and intermittent lessening of the capacities of area roadways because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

As identified in Appendix C, Mitigation Measures, traffic control and visitor protection measures would be employed to reduce the adverse effects of construction activities on transportation systems in the project areas. These measures include advance warning signs and a flagger to direct traffic to maintain safe and efficient traffic flow during the construction period. Implementation of mitigation measures would lessen the adverse construction-related transportation impacts to a minor intensity.

Operation-related Transportation Effects. Alternative 3 would improve road conditions and safety for motorized and non-motorized travel on Requa Road. With the closing of maintenance operations at the Requa area, there would be substantially less traffic on Requa Road. These roadway improvements would have a long-term, negligible, beneficial transportation impact.

Traffic formerly associated with maintenance and operational activities at the Requa area would shift to Aubell area roadways. Alternative 3 would improve traffic operation capacity and safety for motorized and non-motorized travel on Aubell Lane by widening the roadway for two-way traffic; road widening would include an arch culvert over the unnamed tributary to Elk Creek. In addition, by relocating the intersection of Elk Valley Road at Aubell Lane slightly to the north and adding acceleration and deceleration lanes on Elk Valley Road, the safety and sight distance for vehicles entering and exiting Aubell Lane would be improved. These roadway improvements would have a long-term, minor, beneficial transportation impact.

Summary of Alternative 3 Impacts. Alterative 3 would have a local, long-term, minor beneficial impact on transportation associated with roadway and intersection improvements. The long-term beneficial impact associated with roadway improvements would offset the short-term, adverse transportation impacts associated with construction activities.

Cumulative Impacts

The transportation impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions would result in a regional, long-term, minor, adverse impact on transportation. The adverse effect on traffic flows due to increased vehicular traffic associated with the past, present, and reasonably foreseeable actions would offset the beneficial impacts associated with roadway improvements under Alternative 3. Alternative 3 would contribute a small increment to the overall cumulative impact.

Scenic Resources

Analysis

Construction-related Effects on Scenic Resources. Similar to Alternative 2, demolition and restoration activities at Requa and construction activities at the Aubell area would have a local, short-term, moderate, adverse effects on scenic resources. Demolition activities at Requa, including building demolition (leaving their foundations in place), limited pavement removal, installation of new plantings, and retrofitting the water system for residential use, would have detectable but localized and temporary, adverse impacts on scenic resources at Requa. Such activities at Requa would not be readily visible from U.S. 101 or the Klamath River overlook due to the area topography. Construction activities at the Aubell area, including new building construction, grading and earth moving, roadway relocation and widening, existing utility removal and new utility installation, installation of a new arch culvert, landscaping, and installation of new paved areas for parking lots, sidewalks, and work areas, also would have readily apparent but localized and temporary, adverse impacts on scenic resources in the project area. The presence of construction workers, construction-related truck trips, and heavy equipment activity would detract from the visual character of the project areas. Appendix C, Mitigation Measures, identifies scenic resources protection measures such as fencing the primary construction staging area to provide visual screening. Although the mitigation measures would reduce the adverse visual effect of construction activity, it would not reduce the intensity of the adverse impact.

Operation-related Effects on Scenic Resources. Alternative 3 would have a local, long-term, minor, beneficial impact on scenic resources at Requa. The partially restored Requa area would provide improved views of the Requa area. The Requa area would be converted from a developed area characterized by built features to a largely vegetated area with some vestiges of its previous developed state visible (e.g., footings, foundations, pavement, retaining walls, etc.) The Requa area would continue to host the two telecommunications facilities and service roads under this alternative.

Alternative 3 would have a moderate and adverse effect on scenic resources at the Aubell area. The Midway site would be visually converted from grassy, agrarian landscape to a developed site with approximately 145,000 square feet of developed area including approximately 40,000 square feet of buildings (similar to Alternative 2). The new development would be setback approximately one-quarter-mile from Elk Valley Road, and the Midway site would be generally well-screened in three directions by on-site and adjacent tree canopies. Although trees and new landscaping would screen some views of the facility from Elk Valley Road and Aubell Lane, the large-scale development in an existing undeveloped site would be detectable by passing park visitors and from a nearby residence to the east of the site. The new development would be localized, however, and confined to the approximately 13-acre Midway site. Appendix C, Mitigation Measures, identifies scenic resources mitigation measures such as planting vegetation to provide

visual screening of built facilities. The mitigation measures would not lessen the intensity of the adverse effect.

Under Alternative 3, the proposed new parking lots and nighttime security lighting would introduce new sources of light and glare at the Midway site, which would have a moderate, adverse effect on day and nighttime views of the area. Implementation of landscape screening and light shielding mitigation measures, as described in Appendix C, Mitigation Measures, would reduce the adverse intensity of this impact to minor.

Summary of Alternative 3 Impacts. Alternative 3 would have an overall local, long-term, minor, adverse effect on scenic resources associated with the visual intrusions associated with temporary construction activity at the Requa and Aubell areas, and the permanent adverse scenic impacts associated with the visual transformation of the Midway site from a grassy, agrarian landscape to a developed site and introduction of new sources of light and glare from the proposed new parking lots and nighttime security lighting at the Midway site. The adverse effects of the new visual intrusions in the project area would offset the beneficial scenic impacts associated with the partial restoration at Requa.

Cumulative Impacts

The scenic resources impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, adverse impact on scenic resources due to visual intrusions associated with construction activities proposed in the project area, approximately 145,000 square feet of new development at the Midway site, and the adverse effect of new development in a predominantly rural area of Crescent City. Alternative 3 would contribute a small beneficial increment to the overall cumulative impact.

Impairment

Alternative 3 would result in a minor and adverse effect on scenic resources and there would be no impairment of park resources or values.

Visitor Experience

Analysis

Construction-related Effects on Visitor Experience. Similar to Alternative 2, demolition and restoration activities at the Requa area, and construction activities at the Aubell area would have a local, short-term, moderate, adverse effect on park visitor experience. Park visitors utilizing Klamath River Overlook and the Coastal Trail near Requa as well as Jedediah Smith Redwoods State Park near the Aubell area would be adversely affected by construction noise and traffic.

Operation-related Effects on Visitor Experience. Alternative 3 would have a local, long-term, negligible impact on visitor experience. Under this alternative, no visitor facilities would be provided within the project area.

Summary of Alternative 3 Impacts. Similar to Alternative 2, Alternative 3 would have local, short-term, moderate, adverse impact on visitor experience associated with construction activities and a local, long-term, negligible visitor experience impact.

Cumulative Impacts

The visitor experience impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, beneficial impact on visitor experience. New visitor access to the Requa area, the proposed trailhead and parking area at the Aubell area and the expanded trail system under the comprehensive trail plan would beneficially affect visitor experience. Alternative 3 would slightly reduce the overall beneficial cumulative impact during construction activities associated with Alternative 3.

Park Operations and Facilities

Analysis

Construction-related Effects on Park Operations and Facilities. Similar to Alternative 2, demolition, restoration, and construction activities at the Requa and Aubell areas would have a short-term, minor, adverse impact on park operations. During the construction period, some park operations efforts would be diverted from routine upkeep and maintenance of park facilities to assist in the coordination of development of new facilities, and relocation of equipment and materials from old facilities. Potential hazardous materials impacts would be similar to those identified in Alternative 2.

Similar to Alternative 2, during construction activities, park operations and facilities could be moderately and adversely affected by accidental fire, human injury, damage to existing utility lines, or accidental spill of hazardous materials. Adverse impacts under Alternative 3 would be reduced to minor with the incorporation of mitigation measures identified in Appendix C, Mitigation Measures, such as developing and implementing a safety plan, consulting with utilities companies, and storing hazardous materials in compliance with federal regulations.

Operation-related Effects on Park Operations and Facilities. NPS would continue to have maintenance responsibilities at the Requa area since the existing retaining walls and drainage system would remain in place. No new visitor facilities would be provided. Maintenance of the Requa area would be similar to other park lands. Continued maintenance responsibilities at Requa would have a minor and adverse impact on park operations. The new maintenance responsibilities would have a minor effect on the park's ability to maintain existing park infrastructure and facilities and adequately protect park resources and provide for an effective visitor experience.

Alternative 3 would substantially improve NPS and CDPR's maintenance facility by developing new 40,000 square foot state-of-the-art facility at the Midway site. Similar to Alternative 2, the new facility would be designed to ensure operational efficiencies and functionality between maintenance departments. Consolidation of park operations to one facility would improve and streamline maintenance functions, and energy efficiency would be promoted through the use of

natural lighting, building orientation for winter sun and summer shade, and other passive solar opportunities. The new maintenance facility would have adequate space for both NPS and CDPR maintenance requirements. Installation and operation of new underground or aboveground storage tanks at Midway would comply with federal and state standards, and future storage, handling, use, and disposal of hazardous materials associated with maintenance activities would comply with relevant regulations and manufacturer's instructions.

The maintenance facility would be supplied with city water, and the agencies would no longer need to operate water supply systems for their maintenance facilities. At Requa, water service could be offered to the private residences by converting the existing system located on non-federal lands to private use. These private landowners would take responsibility for converting the water supply system to domestic use, and ongoing operations and maintenance of the system. The Elk Valley Road and Aubell Lane road modifications would improve maintenance vehicle access to the proposed facility. The maintenance facility improvements would have a local, long-term, moderate, beneficial impact on the quality and effectiveness of park operations.

Similar to Alternative 2, the location of the new Aubell maintenance facility would be in the northern part of the park. The primary maintenance facility would be relocated from the more centralized Requa location. Establishment of the park's primary maintenance facility in the northern part of the parks would introduce some location-related operational inefficiencies associated with increased travel times to get NPS maintenance staff, equipment, and materials to work sites in the central and southern areas of the park. This would have a minor and adverse effect on park operations. The adverse effect would be partially reduced by the establishment of the maintenance facility near park headquarters in Crescent City, and the benefits associated with having primary park maintenance operations located near park headquarters, including efficiencies in contracting, procurement, and park management.

Summary of Alternative 3 Impacts. Alternative 3 would have local, long-term, moderate, beneficial impact on the quality and effectiveness of park operations and facilities in the project area. The beneficial impacts associated with the operational efficiencies of the proposed new maintenance facility at the Midway site would offset the adverse effects associated with construction activity, and location-related operational inefficiencies due to siting the primary maintenance facility in the northern area of the park.

Cumulative Impacts

The park operations and facilities impact analysis for past, present, and reasonably foreseeable actions under Alternative 3 is the same as described under Alternative 1. See the discussion of cumulative effects under Alternative 1.

Alternative 3 combined with the past, present, and reasonably foreseeable actions would have a regional, long-term, minor, beneficial impact on the quality and effectiveness of park operations and facilities. The beneficial impacts associated with the operational efficiencies of the proposed new maintenance facility at the Midway site would offset the adverse effects associated with construction activity; maintenance responsibilities at Requa, the trailhead at Aubell and expanded trail system under the comprehensive trail plan; and location-related operational inefficiencies due to siting the primary maintenance facility in the northern area of the park. Alternative 3 would contribute to the overall cumulative impact more than other projects.

Chapter V: Consultation and Coordination

Scoping History

The National Park Service (NPS) and the California Department of Parks and Recreation (CDPR) conducted an extensive public involvement effort during the planning process for the Redwood National and State Parks (the parks) *General Management Plan / General Plan*. The public outreach effort included a discussion of the need to relocate the NPS maintenance operation from the Requa area. The *General Management Plan / General Plan* also showed Aubell as a park administrative site, although the Aubell area was not specifically identified as the primary maintenance area for the parks.

NPS and CDPR conducted public scoping for the Redwood Maintenance Facility Relocation project. The agencies issued a public news release on May 28, 2003 announcing a public scoping meeting, plans to relocate the parks' maintenance facility to the Aubell area and restore the Requa area, and plans to prepare an environmental assessment and initial study analyzing the environmental impacts of this action. NPS and CDPR held a public open house following the press release to begin the scoping process for the Redwood Maintenance Facility Relocation project. Three persons attended and no substantive comments were raised at the public meeting. NPS and CDPR also met with the Crescent City Manager, Elk Valley Rancheria representatives, Yurok Tribal representatives, and Smith Valley Rancheria representatives to discuss the Redwood Maintenance Facility Relocation project. No objections to siting the new maintenance facility at the Aubell area were raised during these meetings; however, the Yurok tribe expressed concerns regarding the disposition of Requa after the park vacates the structures there and the desire to see some buildings and related infrastructure left intact.

Compliance History

The *General Management Plan / General Plan* is the overall planning document for Redwood National and State Parks (the parks). The purpose of a general management plan is to provide NPS with "clearly defined direction for resource preservation and visitor use" (NPS 1998) and provide general directions and policies to guide planning and management in the park. The *Final General Management Plan /General Plan, Environmental Impact Statement / Environmental Impact Report* (NPS 1999) identified for the relocation of the parks' maintenance facility from the Requa area.

Advisory Council on Historic Preservation, California State Historic Preservation Officer, and Yurok Tribal Heritage Preservation Officer

The Requa area is within the boundary of the Yurok Reservation, while the Aubell area is not. The 1966 National Historic Preservation Act, as amended in 1992, requires agencies to consult with the Advisory Council on Historic Preservation and State Historic Preservation Officer regarding undertakings that may affect historic properties. NPS consults with the Yurok Tribal Heritage Preservation Officer in lieu of the California State Historic Preservation Officer when projects occur on lands within the Yurok Reservation boundary. Pursuant to Section 101(d)(2) of the National Historic Preservation Act, the Yurok Tribal Heritage Preservation Officer has assumed

the responsibilities of the State Historic Preservation Officer for Tribal lands, and accordingly NPS will consult with the Yurok Tribal Heritage Preservation Officer concerning cultural resources on tribal lands. Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their actions on properties that may be eligible for listing or are listed in the National Register of Historic Places. NPS and CDPR commissioned the Yurok Tribe Environmental Program to conduct a cultural resources survey and inventory report within the area of potential effect for the proposed action project area (Sloan 2004) to document the cultural resource effect determination for consideration by the State Historic Preservation Officer and the Yurok Tribal Heritage Preservation Officer. The results of this study were incorporated into this environmental assessment and initial study and are being used to identify potential effects on historic properties in consultation with the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the Yurok Tribal Heritage Preservation Officer in the development of the Redwood Maintenance Facility Relocation Environmental Assessment and Initial Study/Mitigated Negative Declaration. NPS and CDPR will continue consultation throughout the duration of the project.

American Indian Consultation

As noted above, the planning process for the Redwood Maintenance Facility Relocation project is being conducted in consultation with the Yurok Tribe, and is consistent with the 1996 Memorandum of Understanding between NPS, CDPR, and the Yurok Tribe. In May 2003, NPS and CDPR met with the Crescent City Manager, Elk Valley Rancheria representatives, Yurok Tribal representatives, and Smith River Rancheria representatives to discuss the Redwood Maintenance Facility Relocation project. The Tolowa Nation was notified regarding the proposed action. No objections to siting the new maintenance facility at the Aubell area were raised during these meetings. The Yurok Tribe expressed concerns regarding the disposition of Requa facilities, requested that the park consider a land transfer and retention of some infrastructure, and noted Tribal Employment Rights Act opportunities. The Yurok Tribe Environmental Program conducted a cultural resources survey and inventory report for the Requa and Aubell project area. The findings of this report were incorporated into the environmental assessment and initial study/mitigated negative declaration. Tribal consultations will continue throughout the duration of the project.

Section 106 Status

In compliance with Section 106 of the National Historic Preservation Act, an initial cultural resources study of the Aubell area and of structures and facilities remaining at Klamath Air Force Station was prepared. In addition, this study included literature review, archeological survey, subsurface archeological testing for the presence or absence of archeological material, and consultation with American Indians for information about resources of ethnographic significance. A recommendation of *no adverse effect* for the Aubell area actions and a *conditional no adverse effect* for Requa area actions, based on continued coordination and planning, was issued by the report. Additional consultation with the State Historic Preservation Officer and the Yurok Tribal Heritage Preservation Officer is needed to complete the effect determinations required under Section 106.

California Coastal Commission

The Requa area is located within the California Coastal Zone. NPS will seek a federal consistency determination from the California Coastal Commission documenting the effects of this project on coastal zone resources and coastal zone policies. The Aubell area is not located within the California Coastal Zone.

California Department of Fish and Game

The California Endangered Species Act (California Fish and Game Code § 2050, et seq.) generally parallels the main provisions of the Federal Endangered Species Act and is enforced by the California Department of Fish and Game. State agencies are required to consult with the California Department of Fish and Game to ensure that any actions undertaken are not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat. CDPR will continue to consult with the California Department of Fish and Game as part of the environmental compliance effort for the Redwood Maintenance Facility Relocation project. Pursuant to Sections 1600-1606, CDPR would obtain a California Department of Fish and Game Streambed Alteration Agreement for placement of the arch culvert in the riparian corridor of the unnamed tributary of Elk Creek at the Aubell area under Alternative 3.

Del Norte County

The Requa and Aubell areas are located in Del Norte County. The Elk Valley Road and Midway sites are zoned for Agriculture and the Existing Ranch site is zoned for Forest Recreational (for clarification of the sites see figure II-2 in Chapter II, Alternatives). A conditional use permit would be requested prior to the start of any construction, if required (Del Norte County 2004).

North Coast Regional Water Quality Control Board and State Water Resources Control Board

NPS and CDPR are consulting with the North Coast Regional Water Quality Control Board to ensure compliance with Section 401 of the Clean Water Act. Following completion of NEPA and CEQA processes, the agencies will obtain or apply for coverage under the appropriate permits (including Section 401 water quality certification or waiver, the National Pollutant Discharge Elimination System General Construction permit for activities disturbing at least one acre of land, and the state's groundwater protection program) as necessary.

In compliance with the National Pollutant Discharge Elimination System permit, prior to site development, NPS and CDPR will oversee development and implementation of a Stormwater Pollution Prevention Plan for construction activities to minimize pollutants and sediment in stormwater runoff originating from construction areas.

U.S. Army Corps of Engineers

NPS and CDPR are consulting with the U.S. Army Corps of Engineers to ensure compliance with Section 404 of the Clean Water Act. If required, the agencies will obtain a Nationwide Permit for project activities (i.e., placement an arch culvert (under Alternative 3 only) within the unnamed tributary of Elk Creek) within waters of the U.S. following completion of the NEPA process and prior to project implementation.

U.S. Fish and Wildlife Service

The Endangered Species Act of 1973, as amended (16 United States Code 1531 et seq.), requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. NPS requested a list of federally listed endangered and threatened species that may be present within Redwood National and State Parks from the U.S. Fish and Wildlife Service in 1997, and received quarterly updates through April 2004 (see Appendix D, Special-status Species). NPS has made a no effect determination for the proposed project, and is not consulting with the U.S. Fish and Wildlife Service and NOAA Fisheries regarding special-status species issues at the Requa and Aubell areas.

List of Agencies, Organizations, Interested Parties, and Businesses that Received this Document

Arcata Eye
Bertsch Ocean View Water District
California Coastal Commission
California Conservation Corps
Cal North Wireless
CB Richard Ellis, Inc.
City of Crescent City
Del Norte County Board of Supervisors
Del Norte County Chamber of Commerce
Del Norte County Community Development Department
Del Norte County Public Library
Del Norte Economic Development Corporation
Elk Valley Rancheria
Environmental Science Associates
Friends of Del Norte
Humboldt County Public Library
Humboldt State University Library
Klamath Chamber of Commerce
McKinleyville Press
NOAA Fisheries
Northcoast Environmental Center
North Coast Journal
Orick Chamber of Commerce
Requa Inn
Save-The-Redwoods League
Sierra Club North Group
Smith River Rancheria
State Historic Preservation Officer
Times-Standard
Tolowa Nation
Trees of Mystery
Triplicate
U.S. Fish and Wildlife Service
Verizon California Inc.
Yurok Tribal Heritage Preservation Officer
Yurok Tribal Chairperson

List of Preparers, Consultants, and Planning Team Members

Name	Responsibility
National Park Service, Redwood National and State Parks	
Bill Pierce	Superintendent
Karin Anderson	Cultural Resources
Keith Bensen	Natural Resources
Steve Carlson	Facilities Management
Ray Cozby	Facilities Management
Baker Holden III	Natural Resources
Richard Mayle	Facilities Management
Aida Parkinson	Environmental Specialist
Howard Sakai	Natural Resources
National Park Service, Denver Service Center	
Ric Alesch	Project Manager
Paul Whary	Natural Resources
Greg Cody	Cultural Resources
California Department of Parks and Recreation	
Marilyn Murphy	Superintendent
Jeff Bomke	Facilities Management
Valerie Gizinski	Resource Ecologist
Shaelyn Raab-Strattan	Compliance Coordinator
Environmental Science Associates	
Darcey Rosenblatt	Project Director
Tina Ogawa	Project Manager and Air Quality, Natural Soundscapes, Scenic Resources, Visitor Experience, and Park Operations and Facilities Analyses
Lesley Albert	Transportation Analysis
Dean Martorana	Cultural Resources Analyses
Yolanda Molette	Biological Resources Analyses
Olivia Skance	Geology, Geologic Hazards, and Soils and Hydrology, Floodplains, and Water Quality Analyses

Chapter VI: References

Bibliography

California Air Resources Board
2004 Highest 4 Daily PM-10 Measurements, Crescent City – 880 Northcrest Drive. Accessed on the Air Resources Board Website (www.arb.ca.gov) in May.

California Department of Fish and Game
2004 California Natural Diversity Database for the USGS 7 ½ minute Requa and Crescent City quadrangles.

California Department of Toxic Substances Control
2001 Hazardous Waste and Substances Sites List

California Geological Survey
1973 *Geologic Map of California*. Weed Sheet, 1:250,000.

1994 *Fault Activity Map of California and Adjacent Areas*, by C.W. Jennings. Data Map No.6, 1:75,000.

1999 *Seismic Shaking Hazard Maps of California,* by M.D. Peterson, W.A. Bryant, C.H. Craymer

California Regional Water Quality Control Board (RWQCB), North Coast
1993 *Water Quality Control Plan (Basin Plan) for the North Coast Region*, amended 2001.

Chappel, G.
1985 National Register of Historic Places Nomination Form for the Klamath Air Force Station, Requa, California. On file at the North Coastal Information Center, Klamath, CA.

Del Norte County
2004 Personal Communication from Heidi Kunstall, Planner, September 30.

Drucker, P.
1937 *The Tolowa and their Southwest Oregon Kin*. University of California Publications in American Archaeology and Ethnology. Vol. 36(4): 221-300. University of California Press, Berkeley, CA.

Federal Emergency Management Agency (FEMA)
1983 *FEMA Community Panel 065025 0250B,* January 24.

1986 *FEMA Community Panel 065025 0100C,* July 3.

Fredrickson, D.A.
1984 *The North Coastal Region*. In California Archaeology, edited by M.J. Moratto, pp. 471-528. Academic Press, San Francisco.

Gould, R.A.
1966 *Archaeology of the Point Saint George Site and Tolowa Prehistory*. Berkeley: University of California Publications in Anthropology 4.

Hildebrandt, W.R. and J.F. Hayes
1983 *Archaeological Investigations of Pilot Ridge Six Rivers National Forest*. Cultural Resources Facility, Sonoma State University. Submitted to USDA Forest Service. Available from Six Rivers National Forest, Eureka, CA.

Hildebrandt, W.R. and T.L. Jones
2004 *Evolution of Marine Mammal Hunting: A View from California and Oregon Coasts*. In Prehistoric California: Archaeology and the Myth of Paradise, edited by L.M. Raab and T.L. Jones. University of Utah Press: Salt Lake City.

Humboldt State University
2001 *Tsunami Hazards and Evacuation Routes, Crescent City*, June.

Kleinfelder
2000 *Geologic Reconnaissance Report, Proposed Water/Wastewater Pipeline Alignments, Requa National Park Service Facility, Requa, California*, February 10.

Moratto. M.J.
1984 *California Archaeology*. Academic Press: San Diego, CA.

National Park Service (NPS), U.S. Department of the Interior
1998 *Director's Order 2: Park Planning*.

1999 *Redwood National and State Parks Final General Management Plan / General Plan, Environmental Impact Statement / Environmental Impact Report*. October.

2000 *Management Policies 2001*. December.

2001 *Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision-making*. January.

2002 *Director's Order 77-1: Wetland Protection*. October 30.

2003a *A Conservation Strategy for Managing Threatened and Endangered Species in Redwood National and State Parks*. April.

2003b *Director's Order 77-2: Floodplain Management*.

2004a Personal communication from Howard Sakai, Supervisory Ecologist, to Ric Alesch, Project Manager, April 8.

2004b Personal communication from Howard Sakai, Supervisory Ecologist, and Aida Parkinson, Environmental Compliance, to Yolanda Molette, Environmental Science Associates, October.

Sloan, Kate
2004 Cultural Resources Studies for Relocation of Maintenance Facility to Remove Failing Infrastructure from Geologically Unstable Landslide Area, Redwood National and State Parks, August.

Testart, A.
1982 *The Significance of Food Storage Among Hunter-Gatherers: Residence Patterns, Population Densities, and Social Inequalities*. Current Anthropology 23:523-537.

U.S. Environmental Projection Agency (EPA)
1971 *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. Prepared by Bolt, Beranek and Newman for U.S. EPA. December 31.

U.S. Fish and Wildlife Service (USFWS), U.S. Department of the Interior

1979 *Classification of Wetlands and Deepwater Habitats of the United States*. Prepared by L.M. Cowardin, V. Carter, F.R. Govet, and E.T. LaRoe. FWS/OBS-79/31.

1995 *National Wetlands Inventory*.

2004a Listed/Proposed Threatened and Endangered Species for the Redwood National and State Parks Administrative Unit (Candidates Included). Accessed from: http://arcata.fws.gov/speciestlist/speciesreport.asp on October 21, 2004.

2004b Quarterly Species List for Redwood National and State Parks, Del Norte and Humboldt Counties, California (refer to 1-14-2004-2026.3). April.

Waterman, T.T.

1920 *Yurok Geography*. University of California, Publications in American Archaeology and Ethnology, Vol. 16, no. 5, pp. 177-315. Trinidad Museum Society.

West, G.J.

1989 *Late Pleistocene/Holocene Vegetation and Climate. In Prehistory of the Sacramento River Canyon, Shasta County, California*. Edited by M.C. Basgall and W.R. Hilldebrandt, pp.36-55. Center for Archaeological Research at Davis, Publication No. 9.

1990 *Holocene Fossil Pollen Records of Douglas Fir in Northwestern California: Reconstruction of Past Climate*. In California Department of Water Resources, Interagency Ecological Studies Program Technical Report No. 23.

Zeiner, D.C., W.F. Laudenslayer, K.E. Mayer and M. White

1999 *California's Wildlife*. Vols. I, II and III. California Statewide Wildlife Habitat Relationships System (Version 7.0). California Department of Fish and Game. Sacramento, CA. Accessed from: http://www.dfg.ca.gov/whdab/html/cawildlife.html.

Glossary of Terms

100-year floodplain: The area along the river corridor that would receive flood waters during the 100-year flood event. A 100-year flood event has the probability of occurring 1% of the time during any given year. If a 100-year flood event occurs, the following year will still have the same probability for occurrence of a 100-year event. For the purposes of this environmental assessment, the 100-year floodplain also includes wetlands and meadows associated with the hydrologic and ecological processes of the river.

Affected environment: Existing biological, physical, and social conditions of an area that are subject to change, both directly and indirectly, as a result of a proposed human action.

Alluvial: An adjective referring to alluvium, which are sediments deposited by erosional processes, usually by streams.

Alternatives: Sets of management elements that represent a range of options for how, or whether to proceed, with a proposed project. An environmental assessment analyzes the potential environmental and social impacts of the range of alternatives presented.

Anthropogenic: Of, relating to, or resulting from the influence of human beings on nature.

Archeological resource: Any material remains or physical evidence of past human life or activities that are of archeological interest, including the record of the effects of human activities on the environment. They are capable of revealing scientific or humanistic information through archeological research.

Area of potential effect: A geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist. The area of potential effects is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR 800.16 (d)).

Best Management Practices: Effective, feasible (considering technological, economic, and institutional constraints) conservation practices and land- and water-management measures that avoid or minimize adverse impacts to natural and cultural resources. Best Management Practices may include schedules for activities, prohibitions, maintenance guidelines, and other management practices.

California endangered: Any species that is in danger of extinction throughout all or a significant portion of its range in the state.

California rare (plants only): A native plant that, although not currently threatened with extinction, is present in small numbers throughout its range, such that it may become endangered if its present environment worsens.

California species of special concern: Any species that may become vulnerable to extinction on a state level from declining population trends, limited range, and/or continuing threats; could become threatened or endangered.

California threatened: Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its state range.

Cowardin wetlands: The Cowardin system is used as the basis for wetland classification and protection by NPS. The Cowardin system classifies wetlands based on the type of vegetative cover and lifeform, flooding regime, and substrate material. Cowardin wetlands include jurisdictional wetlands but may also include certain non-vegetated sites and sites lacking soil, if they meet specific criteria.

Criteria air pollutants: Six air pollutants for which federal and state air quality standards have been established, primarily to protect human health and welfare, including ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates with diameters of 10 microns or less, and lead. Criteria pollutants are regulated separately from air toxics at both federal and state levels. Documented health effects from air pollution include acute respiratory infections, chronic bronchitis, pulmonary emphysema, and bronchial asthma.

Decibel: A decibel (dB) is a unit of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level (commonly called "sound level") measured in dB. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels.

Ecosystem: An ecosystem can be defined as a geographically identifiable area that encompasses unique physical and biological characteristics. It is the sum of the plant community, animal community, and environment in a particular region or habitat.

Environmental assessment: A brief NEPA document that is prepared to (a) help determine whether the impact of a proposal or alternatives could be significant; (b) aid NPS in compliance with NEPA by evaluating a proposal that will have no significant impacts, but that may have measurable adverse impacts; or (c) evaluate a proposal that either is not described on the list of categorically excluded actions, or is on the list but exceptional circumstances apply.

Ethnographic resource: A site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

Federal endangered: Any species that is in danger of extinction throughout all or a significant portion of its national range.

Federal species of concern: Any species that may become vulnerable to extinction on a national level from declining population trends, limited range, and/or continuing threats (note that this is no longer an official U.S. Fish and Wildlife Service category, but is still considered in this document because it contains many species that could become threatened or endangered).

Federal threatened: Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its national range.

Finding of no significant impact (FONSI): A determination based on an environmental assessment and other factors in the public planning record for a proposal that, if implemented, would have no significant impact on the human environment. See "environmental assessment."

Floodplain: A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Grader: A piece of heavy equipment used to level or smooth road or other surfaces to the desired gradient.

Hazardous material: A substance or combination of substances that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either: (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Jurisdictional wetlands: Jurisdictional wetlands are delineated and classified to meet regulations of Section 404 of the Clean Water Act.

Mitigation: Activities that will avoid, reduce the severity of, or eliminate an adverse environmental impact.

National Environmental Policy Act (NEPA): The federal act that requires the development of an environmental assessment or environmental impact statement for federal actions that have the potential for environmental, social, or other impacts.

Native species: Species of plants or animals that naturally occur in a particular area and promote natural biological systems.

No action alternative: The alternative in a plan that proposes to continue current management direction. "No action" means the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

Non-native species: Species of plants or wildlife that are not native to a particular area and often interfere with natural biological systems. Sometimes referred to as "exotics."

Non-point source pollution: Pollution that occurs when water runs over land or through the ground, picks up pollutants, and deposits them in surface water and introduces then into groundwater. Examples of nonpoint sources are roadways, parking lots, and landscaped areas. Pollutants from these locations can include petrochemicals, heavy metals, and fertilizers.

Palustrine: The palustrine system was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States. It also includes the small, shallow, permanent, or intermittent water bodies often called ponds. Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes. They may also occur as islands in lakes or rivers. The palustrine system includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5%. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 hectares (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 meters at low water; and (4) salinity due to ocean-derived salts less than 0.5%.

Park rare (plants only): those that have no other status (either state or federal), but have extremely limited distributions in the park and may represent relict populations from past climatic or topographic conditions, may be at the extreme extent of their range in the park, or represent changes in species genetics. Identified by NPS based upon the following criteria:

- Locally rare native
- Listed by the California Native Plant Society
- Endemic to the park or its local vicinity
- At the furthest extent of its range
- Of special importance to the park (identified in legislation or park management objectives)
- The subject of political concern or unusual public interest
- Vulnerable to local population declines
- Subject to human disturbance during critical portions of its life cycle

Particulate matter (PM-10): Fractions of particulate matter characterized by particles with diameters of 10 microns or less (PM-10). Such particles can be inhaled into the air passages and the lungs and can cause adverse health effects.

Regulatory threshold: The concentration threshold set by a regulatory agency or agencies.

Riparian areas: The land area and associated vegetation bordering a stream or river.

Riprap: Any hardening of a shoreline (with rocks or cement) to stabilize river banks for the protection of facilities on or near the bank.

Sediment: A particle of soil or rock that was dislodged, entrained, and deposited by surface runoff or a stream. The particle can range in size from microscopic to cobblestones.

Snag: A standing dead tree.

Special-status species: Species of plants or wildlife that receive special protection under state and/or federal laws. Also referred to as “listed species” or “threatened and endangered species.”

Threatened and endangered species: Species of plants or wildlife that receive special protection under state and/or federal laws. Also referred to as “listed species” or “special-status species.”

U.S. Jurisdictional Wetlands: See Waters of the U.S.

Waters of the U.S.: The term “waters of the U.S.” as defined in Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]) includes: (1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (2) All interstate waters including interstate wetlands; (3) All other waters such as non-isolated intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters which are or could be used by interstate or foreign travelers for recreational or other purposes; or from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or which are used or could be used for industrial purposes by industries in interstate commerce; (4) All impoundments of waters

otherwise defined as waters of the U.S. under the definition; (5) Tributaries of waters identified in paragraphs (1) through (4); (6) Territorial seas; and (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6). Also, U.S. Jurisdictional Wetlands.

Wetland: Wetlands under Section 404 of the Clean Water Act (CFR, Section 328.3[b], 1986) are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Acronyms

CCC	California Conservation Corps
CDPR	California Department of Parks and Recreation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
dB	decibel
dBA	A-weighted decibels
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
PL	public law
PM-10	particulate matter less than 10 microns in diameter
RWQCB	Regional Water Quality Control Board
USC	United States Code

Appendix A: CEQA Initial Study

1.	**Project Title:**	Redwood Maintenance Facility Relocation
2.	**Lead Agency Name and Address:**	Redwood National and State Parks National Park Service and California Department of Parks and Recreation 1111 Second Street Crescent City, CA 95531
3.	**Contact Person and Phone Number:**	Marilyn Murphy, Redwood State Park Superintendent (707) 464-6101, extension 5051
4.	**Project Location:**	Aubell Area Aubell Lane Crescent City, CA 95531
5.	**Project Sponsor's Name and Address:**	Redwood National and State Parks National Park Service and California Department of Parks and Recreation 1111 Second Street Crescent City, CA 95531
6.	**General Plan Designation:**	State and Federal Lands
7.	**Zoning:**	The Elk Valley Road and Midway sites are zoned for Agriculture and the Existing Ranch site is zoned for Forest Recreational (for clarification of the sites see figure II-2 in Chapter II, Alternatives).

8. **Description of Project:**

   See description of the Aubell area in Alternative 2 in Chapter II, Alternatives.

9. **Surrounding Land Uses and Setting.**

   See description of Aubell area setting in Chapter III, Affected Environment.

10. **Other public agencies whose approval is required.**

    See Chapter V, Consultation and Coordination.

Environmental Factors Potentially Affected:

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

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

CEQA Summary of Findings

The lead agency, as identified under CEQA, is the public agency with primary approval authority over the proposed project. In accordance with CEQA Guidelines §15051(b)(1), the lead agency for the proposed project, for the purposes of CEQA compliance, is the California Department of Parks and Recreation (CDPR).

Pursuant to CEQA, an initial study is conducted by a lead agency to determine if a project may have a significant effect on the environment (CEQA Guidelines §15063[a]). If there is substantial evidence that a project may have a significant effect on the environment, an environmental impact report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the lead agency determines that revisions in the project plans or proposals made by or agreed to by the applicant mitigate the potentially significant effects to a less than significant level, a mitigated negative declaration may be prepared instead of an EIR (CEQA Guidelines §15070[b]). The lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This initial study/mitigated negative declaration conforms to the content requirements under CEQA Guidelines §15071. Pursuant to CEQA guidance, an initial study analyzes the environmental impacts of the proposed project only and does not include identification or analysis of alternatives. For the purposes of the CEQA analysis of development of park maintenance facilities at the Aubell area, the proposed project is Alternative 2 (Preferred Project).

Chapter IV, Environmental Consequences, and this Appendix A, CEQA Initial Study, contain the environmental analysis that identifies the potential environmental impacts (by environmental issue) and provides a brief discussion of each impact that could result from proposed development of park maintenance facilities at the Aubell area. Based on the results of the initial study and the supporting environmental analysis provided in this document, the proposed Redwood Maintenance Facility Relocation project would result in less than significant impacts for the following issues: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, utilities and service systems, and cumulative impacts.

In accordance with §15064(f) of the CEQA Guidelines, a mitigated negative declaration shall be prepared if the proposed project will not have a significant effect on the environment after the inclusion of mitigation measures in the project. Based on the available project information, the CEQA Initial Study and

the environmental analysis presented in Chapter IV, Environmental Consequences, there is no substantial evidence that, after the full implementation of the proposed mitigation measures, the proposed project would have a significant effect on the environment. As such, it appears that a mitigated negative declaration is the appropriate CEQA environmental document for this project.

Any significant changes to the project scope or proposed mitigations, or identification of additional adverse impacts and/or mitigation measures would result in re-evaluation of the project and recirculation of a revised draft mitigated negative declaration for public comment. Once public review of the draft mitigated negative declaration is completed and comments/concerns regarding the document have been addressed, CDPR will consider the advisability the project, in light of the whole record, and determine if CDPR intends to carry out the project as proposed. If the project is approved, a notice of determination would be filed with the Governor's Office of Planning and Research/State Clearinghouse, identifying the final project scope, determination of environmental effects, and acceptance of proposed mitigations and findings (CEQA Guidelines §15373). A final mitigated negative declaration would also be prepared in conjunction with the notice of determination and would include comments received during the public review period, agency response to those comments, corrections to the draft mitigated negative declaration in response to comments and reviews, and a mitigation monitoring and reporting plan.

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial evaluation:

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

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Marilyn Murphy
Signature

11/29/04
Date

Marilyn Murphy
Printed Name

California Dept. of Parks and Recreation
For

Environmental Impacts:

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

See Alternative 2 scenic resources analysis in Chapter IV, Environmental Consequences, and Appendix C, Mitigation Measures.

II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. **Would the project:**				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

The Aubell area is not considered Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The Elk Valley Road and Midway sites (see figure II-2 in Chapter II, Alternatives) are zoned agricultural by Del Norte County; however, they are not currently in agricultural use and are part of Redwood National and State Parks. As part of the preferred project, a conditional use permit to allow the

maintenance facility operation at the Aubell area would be requested from Del Norte County prior to the start of any construction, if required. The project would not convert existing farmland to non-agricultural use.

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

See Alternative 2 air quality analysis in Chapter IV, Environmental Consequences.

IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
IV. BIOLOGICAL RESOURCES -- (cont.):				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

See Alternative 2 biological resources analyses in Chapter IV, Environmental Consequences, and Appendix C, Mitigation Measures.

V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of a unique archeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

See Alternative 2 cultural resources analysis in Chapter IV, Environmental Consequences, and Appendix C, Mitigation Measures.

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐

See Alternative 2 geology, geologic hazards, and soils analysis in Chapter IV, Environmental Consequences, and Appendix C, Mitigation Measures.

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

See Alternative 2 park operations and facilities analysis in Chapter IV, Environmental Consequences, and Appendix C, Mitigation Measures.

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion of siltation on- or off-site?	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☒	☐	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation of seiche, tsunami, or mudflow?	☐	☐	☒	☐

See Alternative 2 hydrology, floodplains, and water quality analysis in Chapter IV, Environmental Consequences, and Appendix C, Mitigation Measures.

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
IX. LAND USE AND PLANNING -- Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

The proposed project would not physically divide an established community. The Elk Valley Road and Midway sites (for clarification of the sites see figure II-2 in Chapter II, Alternatives) are zoned agricultural by Del Norte County, and this zoning does not permit construction of a maintenance facility. As part of the preferred project, a conditional use permit to allow the maintenance facility operation at the Aubell area would be requested from Del Norte County prior to the start of any construction, if required. The project would not conflict with any applicable habitat conservation plan or natural community conservation plan.

X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

The Aubell area is underlain by alluvial materials that have not been identified as significant mineral or aggregate deposits by the California Geological Survey.

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
XI. NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

See Alternative 2 noise analysis in Chapter IV, Environmental Consequences, and Appendix C, Mitigation Measures.

XII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

The proposed development of a park maintenance facility on the Aubell area within Redwood National and State Parks would not directly or indirectly induce population growth in the Crescent City area. The new maintenance facility would not displace any existing housing nor would it displace any people, and would not necessitate the construction of replacement housing elsewhere.

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
XIII. PUBLIC SERVICES --				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒

See Alternative 2 park operations and facilities analysis in Chapter IV, Environmental Consequences.

XIV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

See Alternative 2 visitor experience analysis in Chapter IV, Environmental Consequences.

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
XV. TRANSPORTATION / TRAFFIC -- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☐	☒	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☒	☐

See Alternative 2 transportation analysis in Chapter IV, Environmental Consequences, and Appendix C, Mitigation Measures.

XVI. UTILITIES AND SERVICE SYSTEMS -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
XVI. UTILITIES AND SERVICE SYSTEMS – (cont.):				
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

See Alternative 2 park operations and facilities analysis in Chapter IV, Environmental Consequences.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulative considerable? ("Cumulative considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

As described in the Alternative 2 analysis of the Aubell area in Chapter IV, Environmental Consequences, the proposed project was evaluated for potential significant adverse impacts to the natural environment. It has been determined that the proposed project has the potential to degrade the quality of the

environment and adversely affect wetlands, vegetation, wildlife, and special-status animal species. The project also has potential adverse effects on soils and water quality through increased siltation and erosion. However, full implementation of all mitigation measures incorporated into this project (see Appendix C, Mitigation Measures) would avoid or reduce these potential impacts to a less-than-significant level.

The additive impacts of cumulative projects were analyzed and described for Alternative 2 in Chapter IV, Environmental Consequences. As disclosed in the cumulative impact analysis, the cumulative projects would contribute adverse environmental effects on the environment. However, impacts from environmental issues addressed in this evaluation do not overlap with these additional projects in such a way as to result in cumulative impacts that are greater than the sum of the parts or that result in a significant adverse impact that cannot be mitigated. Full implementation of all mitigation measures associated with this and other projects would reduce any potential cumulative impacts to a less than significant level.

Most project-related environmental effects have been determined to pose less-than-significant impacts on humans. However, possible construction phase noise, air quality, geology and soils, hazards and hazardous materials, and transportation/traffic impacts, though temporary in nature, have the potential to result in significant adverse effects. Operational (long-term) potential adverse impacts from hazards and hazardous materials and noise could also occur. However, these potentially significant adverse impacts would be reduced to a less-than-significant level with implementation of mitigation measures incorporated into this project (see Appendix C, Mitigation Measures).

Appendix B: Applicable Legislation and Policies

This appendix describes the key regulations and policies that form the legal context for development of the Redwood Maintenance Facility Relocation Environmental Assessment and Initial Study/Mitigated Negative Declaration.

General Legislation and Policies

California Environmental Quality Act. The California Environmental Quality Act (CEQA), is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. CEQA applies to certain activities of state and local public agencies. A public agency must comply with CEQA when it undertakes an activity defined by CEQA as a "project." A project is an activity undertaken by a public agency or a private activity which must receive some discretionary approval (meaning that the agency has the authority to deny the requested permit or approval) from a government agency which may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment.

Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR Parts 1500–1508). The Council on Environmental Quality regulations for implementing the National Environmental Policy Act establish the process by which federal agencies fulfill their obligations under the National Environmental Policy Act process. The Council on Environmental Quality regulations ascertain the requirements for environmental impact statements and environmental assessments that document the National Environmental Policy Act process. This environmental assessment was prepared as directed in the Council on Environmental Quality regulations.

Environmental Protection Agency Regulations (40 Code of Federal Regulations [CFR] Parts 1-799). The U.S. Environmental Protection Agency permits coordinated and effective governmental action to assure the protection of the environment by abating and controlling pollution. 40 CFR Parts 1-799 address air quality, water quality, pesticides, radiation, noise abatement, solid waste, toxic substances, and other topics. For instance, 40 CFR Part 61, Subpart M, National Emission Standards for Hazardous Air Pollutants for Asbestos guides requirements associated with demolishing and/or removal of materials that could include asbestos.

Fish and Wildlife Coordination Act. The objective of the Fish and Wildlife Coordination Act is to provide that wildlife conservation receive equal consideration and be coordinated with other features or water resources development programs. Whenever a federal agency proposes to impound, divert, channelize, or otherwise alter or modify any stream, river, or other body of water for any purpose, the agency must first consult and coordinate its actions and projects with the U.S. Fish and Wildlife Service.

National Environmental Policy Act of 1970. PL 91-190, 83 Stat. 852, 42 USC §4341 et seq. The National Environmental Policy Act process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. Regulations implementing the National

Environmental Policy Act are set forth by the Council on Environmental Quality. The National Environmental Policy Act process guides the overall federal planning process for the Redwood Maintenance Facility Relocation project.

National Park Service Management Policies. *Management Policies* is the basic NPS policy document, superseding the 1988 edition. This document is the highest of the three levels of guidance documents in the NPS Directives System and provides policies applicable to management of the National Park System.

The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid or minimize to the greatest degree practicable adverse impacts on park resources and values. However, the laws do give NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given NPS management discretion to allow certain impacts within parks, that discretion is limited by statute requirement that NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. Impairment of park resources and values was evaluated on the basis of duration and intensity of impacts. An impact to any park resource or value may constitute impairment. However, an impact would more likely constitute impairment to the extent it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park
- Key to the natural or cultural integrity of the parks or to opportunities for enjoyment of the park
- Identified as a goal in the park's Master Plan or General Management Plan or other relevant NPS planning documents

Natural Resources Legislation

California Clean Air Act. The 1989 amendments to the California Clean Air Act established a statewide air pollution control program. The California Clean Air Act requirements include annual emission reductions, increased development and use of low-emission vehicles, and submittal of air quality attainment plans by regional air districts.

California Coastal Act. This act requires that all developments within the Coastal Zone obtain a Coastal Development Permit in addition to any other permit required for development by a local or state agency. For projects within 300 feet of the ocean, or those located between the ocean and the first public road adjacent to the ocean, permits must be obtained from the California Coastal Commission.

California Endangered Species Act. The California Endangered Species Act parallels the policies of the Federal Endangered Species Act and was written to protect state endangered and threatened plant and animal species whose continued existence in California is in jeopardy. The agencies initiated and maintained formal consultation with the California Department of Fish and Game throughout the compliance process for the Redwood Maintenance Facility Relocation project in order to meet obligations under the Endangered Species Act.

California Fish and Game Code. Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code designate certain species as "fully protected." Fully protected species, or parts thereof, may not be taken or possessed at any time without permission by the California Department of Fish and Game.

California Native Plant Protection Act. The act directed the California Department of Fish and Game to carry out the legislature's intent to "preserve, protect, and enhance endangered plants in this state." The act gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. When the California Endangered Species Act was passed, it expanded upon the Native Plant Protection Act and enhanced legal protection for plants.

Coastal Zone Management Act. The Coastal Zone Management Act encourages states to preserve, protect, develop, and, where possible, restore or enhance valuable natural coastal resources such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife using those habitats. A unique feature of the Coastal Zone Management Act is that participation by states is voluntary. To encourage states to participate, the act makes federal financial assistance available to any coastal state or territory, that is willing to develop and implement a comprehensive coastal management program.

Federal Clean Air Act, as amended, PL Chapter 360, 69 Stat. 322, 42 USC §7401 et seq. Section 118 of the Clean Air Act requires all federal facilities to comply with existing federal, state, and local air pollution control laws and regulations. The agencies work in conjunction with the North Coast Unified Air Quality Management District to ensure that all construction activities meet requirements.

Federal Endangered Species Act of 1973, as amended, PL 93-205, 87 Stat. 884, 16 USC §1531 et seq. The Endangered Species Act protects threatened and endangered species, as listed by the U.S. Fish and Wildlife Service or NOAA Fisheries, from unauthorized take and directs federal agencies to ensure that their actions do not jeopardize the continued existence of such species. The agencies initiated and maintained communication with the U.S. Fish and Wildlife Service and NOAA Fisheries throughout the compliance process for the Redwood Maintenance Facility Relocation project in order to meet obligations under the Endangered Species Act.

Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) of 1977 (33 USC 1251 et seq.). The Clean Water Act provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters. Section 404 of the act prohibits the discharge of fill material into navigable water of the United States, including wetlands, except as permitted under separate regulations by the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency.

Clean Water Act Amendments of 1987. The 1987 amendments to the act required that the Environmental Protection Agency establish regulations for the issuance of municipal and industrial stormwater discharge permits as part of the National Pollutant Discharge Elimination System. The final Environmental Protection Agency regulations were published in November 1990. These regulations apply to any construction activities that disturb more than one acre of land.

Magnuson-Stevens Fishery Conservation and Management Act of 1976. The Magnuson-Stevens Fishery Conservation and Management Act established national standards for fishery conservation and management and eight regional fishery management councils to apply those national standards in fishery management plans. The act is enforced in the United States by NOAA Fisheries.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act is an international treaty that regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50, Code of Federal Regulations, Section 10.13. The act was amended in 1972 to include protection for migratory birds of prey (raptors).

Porter-Cologne Water Quality Control Act (California Water Code, Section 13020). Under the authority of the Porter-Cologne Act and federal Clean Water Act, Regional Water Quality Control Boards act as regional agencies for the State Water Resources Control Board and are responsible for regional enforcement of water quality laws and coordination of water quality control activities. The regional board for the Redwood National and State Parks area is the North Coast Regional Water Quality Control Board.

Wetlands – Regulatory Context

Wetlands are transitional areas between terrestrial and aquatic ecosystems, where the water table is usually at or near the surface of the land and are considered highly valued resources because they perform a variety of hydrological and ecological functions vital to ecosystem integrity. NPS classifies and maps wetlands using the Cowardin classification system (U.S. Fish and Wildlife Service 1979). This system classifies wetlands based on vegetation, flooding regime, or substrate material. For purposes of this document, these wetland types are referred to as Cowardin wetlands. Cowardin wetlands are subject to NPS protection policies under Executive Order 11990.

Waters of the U.S., including wetlands, streams, rivers, and natural drainages, are features delineated and classified under Section 404 of the Clean Water Act and are regulated under the jurisdiction of the U.S. Army Corps of Engineers. Wetlands are a subset of waters of the U.S. and streams, creeks, rivers and natural drainages are defined as “other waters of the U.S.” and are referred to as such in this document. For purposes of this document, wetland waters of the U.S. and other waters of the U.S. are referred to collectively as waters of the U.S., unless noted otherwise. Both waters of the U.S. and Cowardin wetlands are referred to as wetlands.

Cowardin wetlands include water-associated features identified as waters of the U.S., but may also include certain nonvegetated sites and sites lacking hydric soil, if they meet specific criteria in the Cowardin classification system.

Cultural Resources Legislation

California Public Resources Code Section 5024. This section of the Public Resources Code indicates the requirements for listing of historical resources in the California Register of Historic Places and defines the conditions under which a resource may be determined to be historically or culturally significant.

National Historic Preservation Act of 1966, as amended, PL 89-665, 80 Stat. 915, 16 USC §470 et seq. and 36 CFR 18, 60, 61, 63, 68, 79, 800. The National Historic Preservation Act established a program for the preservation of historic properties throughout the nation. The Act created the Advisory Council on Historic Preservation, an independent Federal agency, to advise the President and Congress on matters involving historic preservation. The Act requires agencies to take into account the effects of their actions on properties listed in or eligible for listing in the National Register of Historic Places. The Advisory Council on Historic Preservation has developed implementing regulations (36 CFR 800), which allow agencies to develop agreements for consideration of these historic properties.

Native American Graves Protection and Repatriation Act. The Native American Graves Protection and Repatriation Act is a federal law that provides a process for museums and Federal agencies to return certain Native American cultural items – human remains, funerary objects, sacred objects, and objects of cultural patrimony – to lineal descendants, culturally affiliated Indian tribes, and Native Hawaiian organizations.

Executive Orders

Executive Order 11593: Protection and Enhancement of the Cultural Environment. This executive order instructs all federal agencies to support the preservation of cultural properties. It directs them to identify and nominate cultural properties under their jurisdiction to the National Register of Historic Places and to "exercise caution… to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished, or substantially altered."

Executive Order 11988: Floodplain Management. This executive order requires federal agencies to avoid, to the extent possible, adverse impacts associated with the occupancy and modification of floodplains, and to avoid development in floodplains whenever there is a practical alternative. If a proposed action is found to be in the applicable regulatory floodplain, the agency shall prepare a floodplain assessment, known as a Statement of Findings. A Floodplain Statement of Findings is not required for this proposed action.

Executive Order 11990: Protection of Wetlands. This executive order established the protection of wetlands and riparian systems as the official policy of the federal government. It requires all federal agencies to consider wetland protection as an important part of their policies and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. A Wetland Statement of Findings is not required for this proposed action.

Executive Order 12898: General Actions to Address Environmental Justice in Minority Populations and how Income Populations. Executive Order 12898 requires all federal agencies

to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Cleanup of materials from past activities would occur and the project would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Draft Environmental Justice Guidance (July 1996).

Executive Order 13007: Indian Sacred Sites. Executive Order 13007 requires federal agencies to accommodate access to and ceremonial use of American Indian sacred sites by American Indian religious practitioners, and avoid adversely affecting the physical integrity of such sites.

Executive Order No. 13112: Invasive Species. This executive order prevents the introduction of invasive species and directs federal agencies to not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species. Actions proposed in the Redwood Maintenance Facility Relocation project include measures to prevent the introduction and spread of invasive species.

Department of the Interior – Director's Orders

Director's orders provide guidance for implementing certain aspects of NPS policy. Copies of those that have been completed may be obtained by contacting the NPS Office of Policy or by accessing the NPS web site. The following director's orders may be relevant to the Redwood Maintenance Facility Relocation project planning process.

Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision-making. Director's Order #12 provides NPS agency guidance on implementing the National Environmental Policy Act. The environmental assessment was developed consistent with Director's Order #12.

Director's Order #28: Cultural Resource Management. NPS, as steward of many of America's most important cultural resources, is charged to preserve them for the enjoyment of present and future generations. NPS will protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in NPS *Management Policies* and described in the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation*. Additionally, NPS will comply with the 1995 Programmatic Agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers.

Director's Order #77-1: Wetland Protection. The wetland protection provisions of the 1980 NPS *Floodplain Management and Wetland Protection Guidelines* (45 CFR 35916, minor revisions in 47 CFR 36718), and any other conflicting instructions or delegations of authority, are superseded and replaced by this director's order and by Procedural Manual #71-1. Approved in 1998, the manual was developed for use by NPS in carrying out its responsibilities under Executive Order 11990. The general policies, requirements, and standards included in the manual are:

- No net loss of wetlands and a long-term goal of net wetland gain
- Parkwide wetland inventories
- Restoration and enhancement of degraded wetland habitats

- Planning and siting to avoid or minimize effects to wetlands
- Restoration of degraded wetlands as compensation for adverse effects to wetlands
- Compliance with federal environmental regulations

The proposed action was developed consistent with Director's Order #77-1 and Procedural Manual #71-1. As noted under the Executive Order 11990 discussion above, a Wetland Statement of Findings is not required for this proposed action.

Director's Order #77-2: Floodplain Management. This director's order applies to all NPS proposed actions, including the direct and indirect support of floodplain development that could adversely affect the natural resources and functions of floodplains or increase flood risks. This policy provides NPS direction on complying with Executive Order 11988, Floodplain Management. Director's Order 77-2, together with its accompanying Procedural Manual #77-2, replaces NPS floodplain management guidance provided in Special Directive 93-4, Floodplain Management Guideline. The general policies, requirements, and standards included in the manual are:

- Protect, preserve, and restore the natural resources and functions of floodplains
- Avoid the long- and short-term environmental effects associated with the occupancy and modification of floodplains
- Avoid direct and indirect support of floodplain development and actions that could adversely affect the natural resources and functions of floodplains or increase flood risks
- Restore, when practicable, natural floodplain values previously affected by land-use activities within floodplains

The proposed action was developed consistent with Director's Order #77-2 and Procedural Manual #77-2. As noted under the Executive Order 11988 discussion above, a Floodplain Statement of Findings is not required for this proposed action.

Redwood National and State Parks Plans

General Management Plan / General Plan. Redwood National and State Parks include Redwood National Park, under NPS jurisdiction, and three state parks — Prairie Creek Redwoods State Park, Del Norte Coast Redwoods State Park, and Jedediah Smith Redwoods State Park — under the jurisdiction of CDPR. A joint (federal and state) general plan was developed to provide comprehensive guidance for managing the parks and comply with federal and state laws (i.e., federal law requires a general management plan and state law requires a general plan).

County General Plan

Del Norte County General Plan. The Del Norte County General Plan provides comprehensive guidance for land use and planning decisions in the county. The General Plan was updated in 2003 with the approval of the non-coastal elements of the plan. The coastal elements of the General Plan will be approved in 2004 or 2005. The General Plan includes elements on land use, open space, conservation, circulation, safety, housing, and noise.

Appendix C: Mitigation Measures

The National Park Service (NPS) and California Department of Parks and Recreation (CDPR) place a strong emphasis on avoidance, minimization, and mitigation of potential impacts. To help ensure that construction and/or operation of the proposed action protects natural and cultural resources and the quality of the visitor experience, protective measures would be developed and implemented consistent with the guiding principles and commitments outlined in the *General Management Plan / General Plan*. The agencies would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results. Mitigation measures identified in Appendix C would apply to both of the action alternatives, Alternative 2 and Alternative 3. No mitigation measures are proposed for Alternative 1. Supplemental resources referred to in Appendix C are available upon request from Redwood National and State Park (1111 Second Street, Crescent City, California 95531); NPS Directors Orders and guidance manuals are available at http://www.nature.nps.gov/policiesguidance/index.htm.

The following protective measures would be developed and implemented, as appropriate, prior to, during, and/or after construction.

Table C-1
Mitigation Measures

Mitigation Measure Number	Mitigation Measure Description	Implementation Responsibility	Critical Milestones
Geology, Geologic Hazards and Soils			
1	Implement siltation and sediment control measures approved by the California Stormwater Quality Association (stormwater best management practices for construction) and Regional Water Quality Control Board in construction areas to reduce erosion and surface scouring and to capture eroding soil before discharge to riparian channels. Measures could include, but not be limited to, use of silt fencing and hay bales, and winterizing stockpiles.	Construction Contractor	Prior to and during construction
2	Install water bars in temporary access roads located on slopes to control and reduce surface scouring.	Construction Contractor	Prior to and during construction
3	Conserve and salvage topsoil for reuse. Materials will be reused to the maximum extent possible.	Construction Contractor	During construction
4	Most ground disturbing activities will occur between June and October, excluding the rainy season.	Construction Contractor	During construction
Hydrology, Floodplains, and Water Quality			
5	Storm drain systems shall be designed to adequately handle and convey surface water flows during a 100-year storm event without causing flooding onsite or in downstream locations.	NPS/CDPR, Construction Contractor	Prior to and during construction
6	Storm drain systems shall be designed to minimize stormwater pollutant concentrations and avert erosion of stream bed deposits in receiving water bodies associated with stormwater discharge locations. Stormwater runoff from parking lots and maintenance areas shall be filtered prior to discharge.	NPS/CDPR, Construction Contractor	Prior to and during construction
7	Develop and implement a comprehensive stormwater pollution prevention plan for construction activities that complies with federal and state regulations and addresses all aspects of stormwater pollution prevention. The stormwater pollution prevention plan will be submitted to the parks for review/approval prior to construction activities. The stormwater pollution prevention plan would include, but is not limited to the following measures: ▪ Take measures to control erosion, sedimentation, and compaction, and thereby reduce water pollution and adverse water quality effects on Elk Creek, Salt Creek, and the Klamath River. Use silt fences, sedimentation basins, etc. in construction areas to reduce erosion, surface scouring, and discharge to water bodies. ▪ To the extent possible, schedule the use of mechanical equipment during periods of low precipitation to reduce the risk of accidental hydrocarbon leaks or spills. When mechanical equipment is necessary outside of low precipitation periods, use agency–approved methods to protect soil and water from contaminants. ▪ Dispose of volatile wastes and oils in approved containers for removal from construction sites to avoid contamination of soils, drainages, and watercourses. ▪ Inspect equipment for hydraulic and oil leaks prior to use on construction sites, and implement inspection schedules to prevent contamination of soil and water. ▪ Keep absorbent pads, booms, and other materials on site during projects that use heavy equipment to contain oil, hydraulic fluid, solvents, and hazardous material spills.	NPS/CDPR, Construction Contractor	Prior to and during construction

Table C-1 (Continued)
Mitigation Measures

Mitigation Measure Number	Mitigation Measure Description	Implementation Responsibility	Critical Milestones
Wetlands			
8	When constructing the new arch culvert over the northernmost tributary that crosses Aubell Lane, the agencies will avoid placement of new structures, such as footings, within the streambed and bank (applicable to Alternative 3 only).	NPS/CDPR	During project design phase
9	Comply with Executive Order 11990 (Protection of Wetlands), the Clean Water Act, and Director's Order 77-1 (Wetland Protection).	Construction Contractor	During construction
10	Work activities in active streambeds (areas of flowing water) will occur during periods of low flow (e.g., June through October) (applicable to Alternative 3 only).	Construction Contractor	During construction
11	If federal and/or state permits are required, then obtain full compliance with all permit conditions contained in the Section 404 Clean Water Act permit from the U.S. Army Corps of Engineers, Section 401 water quality certification or waiver from the Regional Water Quality Control Board, and Section 1602 Streambed Alteration Agreement of the California Fish and Game Code from the California Department of Fish and Game. Additional mitigation, protective measures, and applicable permit conditions imposed by permitting and/or regulatory agencies identified following the completion of the environmental compliance phase will be implemented as required.	NPS/CDPR	Throughout project timeline
12	Avoid effects on waterways and wetlands during construction activities. Use protective materials identified in park and agency best management practices, such as silt fencing at waterways and wetlands to prevent construction materials from escaping work areas.	Construction contractor	During construction
13	Minimize the disturbance to and removal of riparian vegetation. Where riparian vegetation extends outside of the designated 100-foot setback from the creek and into the construction zone, avoid disturbance to this vegetation and establish a 25-foot protective buffer at the edge of riparian habitat. Prior to construction, install protective fencing material to demarcate all setbacks (100-foot and 25-foot setbacks) that protect the creek and the edge of riparian vegetation. If riparian vegetation cannot be avoided or protected within buffer zones, then the area of riparian vegetation disturbed will be replaced at a 1:1 ratio within the project vicinity as described under the revegetation measures. Store equipment and materials designated setback zones. For these activities, provide proper and timely maintenance for vehicles and equipment used during construction to reduce the potential for mechanical breakdowns. Conduct maintenance and fueling within designated setback areas for these activities.	Construction contractor	Prior to and during construction
14	NPS/CDPR natural resources staff will monitor construction activities as necessary to ensure implementation of the mitigation measure required in this document.	NPS/CDPR	During construction, ongoing maintenance
	See also Mitigation Measures 53, 56, 59, and 62 through 64 (equipment and materials setbacks, maintenance requirements)		

Table C-1 (Continued)
Mitigation Measures

Mitigation Measure Number	Mitigation Measure Description	Implementation Responsibility	Critical Milestones
Vegetation			
15	Avoid removal and damage to large trees. Retain native trees with a diameter of 20 inches or greater at breast height throughout the site. Removal of trees greater than 20 inches in diameter at breast height will require approval by park management. At the Requa area, replace removed 20- to 30-year old trees at 1:1 ratio. Only plantings of trees will be used, no seeds will be substituted. Removed trees to be used as mulch material.	Construction contractor	Prior to and during construction
16	Install temporary barriers to contain construction activities, thereby protecting natural surroundings (including trees, plants, and root zones) from damage. Avoid fastening ropes, cables, or fences to trees.	Construction contractor	Prior to and during construction
17	Install fencing material to minimize use of highly sensitive sites, such as riparian corridors and wetlands, and install signs as needed to direct use to more appropriate areas.	Construction contractor	Prior to and during construction
18	Seed or plant bare natural areas disturbed by demolition and construction activities using native species.	Construction contractor	During construction
19	Develop and implement a revegetation approach with specific components of a strategy that would include, but not be limited to, the following: ▪ Soil salvage/reuse ▪ Plant salvage ▪ Soil preparation ▪ Selection, use, and treatment of new soil ▪ Use of native plants of native genotypes including traditional plant species associated with hunting and gathering values and conducive to elk grazing habitat (parks seed sources or commercial supply) ▪ Seeding mixtures/sources ▪ Use of fertilizers ▪ Non-native weed control ▪ Supplemental revegetation if initial revegetation fails ▪ Repair/replacement of damaged trees ▪ Mulching (utilize locally derived material, if available)	NPS/CDPR, Construction Contractor	Prior to and during construction, ongoing maintenance
20	Implement a non-native species control program in accordance with the Redwood National and State Parks *Exotic Plant Management Plan* and conforms with Executive Order 13122 – Invasive Species. Standard measures include the following elements: ensure construction-related equipment arrives on site free of mud or seed-bearing material, use native seeds and straw materials to the extent feasible, and identify and treat areas of non-native species prior to construction.	NPS/CDPR, Construction Contractor	Prior to and during construction
21	Monitor the restored Requa area as necessary annually for three years to prevent invasion of non-native weeds, absence of erosion features, 75 percent survivorship of plantings, plant maintenance, and replacement of unsuccessful plant materials.	NPS/CDPR	Following construction

Table C-1 (Continued)
Mitigation Measures

Mitigation Measure Number	Mitigation Measure Description	Implementation Responsibility	Critical Milestones
22	All trees to be removed shall be identified on site prior to construction using visible markings within the vegetation clearing limit. Trees to remain on site (i.e., saved trees outside of the vegetation clearing limit) will be protected during construction. Prior to the start of any clearing, stockpiling, excavation, grading, compaction, paving, change in ground elevation, or construction, remaining trees that are immediately adjacent to or within the project construction corridor shall be clearly delineated by constructing short post and plank walls, or other protective fencing material, at the dripline of each tree to hold back fill. The delineation markers shall remain in place for the duration of all project work. Where proposed development or other site work must encroach upon the dripline of a saved tree, special construction techniques will be required to allow the roots to breathe and obtain water (examples include, but are not limited to, use of hand equipment for tunnels and trenching, allowance of only one pass through a tree's dripline). Tree wells or other techniques may be used where advisable. Excavation adjacent to any trees, when permitted, will be in such a manner that will cause only minimal root damage.	NPS/CDPR, Construction Contractor	Prior to and during construction
23	If any saved tree is damaged sufficiently by project implementation to result in mortality, then the contractor will replace the tree at a 1:1 ratio.	Construction Contractor	During construction, ongoing maintenance
24	The following shall not occur within the dripline of any saved tree: parking; storage of vehicles, equipment, machinery, stockpiles of excavated soils, or construction materials; or dumping of oils or chemicals. No burning or use of equipment with an open flame shall occur near or within the dripline.	Construction contractor	During construction
Wildlife			
25	If monitoring conducted as part of Mitigation Measure 14, above, detects any species vulnerable to motality, entrapment, or other direct effects, the species shall be avoided or the natural resources monitor be relocate the species.	NPS/CDPR	During construction
26	Educate workers on the dangers of intentional or unintentional feeding of wildlife, and on inadvertent harassment through observation or pursuit. Work sites would be closed to the public.	NPS/CDPR, Construction Contractor	Throughout project timeline
27	All trash that may attract wildlife shall be contained and removed daily from the site(s).	NPS/CDPR, Construction Contractor	Throughout project timeline
28	Maintain routes of escape from excavated pits and trenches for animals that might become entrapped. Cover post holes, open pipe ends and other narrow pits at the end of each construction workday. Inspect pits, trenches, post holes, pipes, and other excavations each morning for trapped animals and contact the agency staff to free them.	NPS/CDPR, Construction Contractor	During Construction
	See also Mitigation Measures 50 and 51 (lighting and noise restriction)		

Table C-1 (Continued)
Mitigation Measures

Mitigation Measure Number	Mitigation Measure Description	Implementation Responsibility	Critical Milestones
Special-status Species			
29	See Mitigation Measures 1 through 4, 7 through 14, 25, and 27 (trash removal requirements, presence of biological monitor, fencing, and implementation of erosion control and wetlands protection measures)		
	Northern spotted owl surveys would be conducted prior to construction activities, and should this species or other listed special-status species be found within the second-growth forest strip in the Aubell area, additional agency consultation would be undertaken with the U.S. Fish and Wildlife Service to determine construction stipulations that would be required. Construction stipulations may include, implementing work restrictions in accordance with the limiting operating procedure, which would limit construction activities between two hours after sunrise to two hours before sunset July through September 15, and conducting periodic monitoring to ensure that listed species are not present. Additional measures identified will be implemented prior to and during project construction, and could include restrictions on construction timing, identification of special-status species protection buffers, and modification of facility siting.	NPS/CDPR, Construction Contractor	Prior to and during Construction
30	Implement on-going program and new measures to reduce potential threats to listed special-status bird species as part of the *Conservation Strategy for Managing Threatened and Endangered Species in Redwood National and State Parks* (NPS 2003a), including but not limited to, noise reduction measures, and stopping work if listed special-status bird species are encountered during project activities.	NPS/CDPR, Construction Contractor	Prior to and during Construction
	To avoid disturbance to bird species protected under the Migratory Bird Treaty Act, NPS will remove nesting substrate that would be subsequently disturbed by construction (trees and large shrubs) before the nesting season (February 1 through September 30) to encourage migratory birds to select nesting trees outside the project area. Nesting trees for migratory birds are abundant in the parks.		Prior to Construction
Air Quality			
31	Cover truck beds for vehicles leaving construction sites to minimize blowing dust or loss of debris.	Construction Contractor	During Construction
32	Limit truck and related construction equipment speeds in active construction areas (e.g., exposed dirt surfaces) to a maximum of 25 miles per hour and strictly adhering to park regulations and posted speed limits in other areas while inside park boundaries.	Construction Contractor	During Construction
33	Maintain adequate dust suppression equipment and using clean water to control excess airborne particulates at staging areas, active construction zones, and unpaved roads leading to/from active construction areas.	Construction Contractor	During Construction
Natural Soundscapes			
34	Ensure that all construction equipment has functional exhaust/muffler systems.	Construction Contractor	During Construction
35	Use hydraulically or electrically powered construction equipment, when feasible.	Construction Contractor	During Construction

Table C-1 (Continued)
Mitigation Measures

Mitigation Measure Number	Mitigation Measure Description	Implementation Responsibility	Critical Milestones
36	Locate stationary noise sources as far from sensitive receptors (e.g., residences) to the extent possible.	NPS/CDPR, Construction Contractor	During design phase, construction, and operation
37	Limit the idling of motors, except as necessary (e.g., concrete mixing trucks).	NPS/CDPR, Construction Contractor	During construction, and operation
38	Locate noise intensive maintenance operations at proposed new facility as distant from sensitive receptors as possible. If they must be located near sensitive receptors, stationary noise sources would be muffled to the extent feasible and/or, where practicable, enclosed within sheds.	NPS/CDPR	During design phase and operation
39	Design new maintenance facility buildings to attenuate interior noise, such that noise generated within the maintenance facility would be less audible in the ambient environment.	NPS/CDPR	During design phase
Cultural Resources			
40	Continue consultation with the Yurok Tribe and the Yurok Tribal Heritage Preservation Officer to elicit information that may relate to a possible traditional cultural property at the Requa site. Ensure full consideration of the concerns of the Yurok tribe throughout implementation of the proposed action and adopt and implement applicable measures to protect the Requa area traditional cultural property. Consultation with the Smith River Rancheria and Elk Valley Rancheria shall also be conducted to address their concerns, if any, with respect to the Aubell site actions.	NPS/CDPR	During design phase, construction, and operation
41	Consultation shall occur in accordance with the regulations of the *Advisory Council on Historic Preservation* (36 CFR Part 800) to identify, adopt, and implement applicable measures to protect the Requa area traditional cultural property.	NPS/CDPR	During design phase, construction, and operation
42	A qualified archeologist, as directed by the Secretary of the Interior and NPS/CDPR standards, and a Yurok tribal representative shall monitor ground disturbing construction activities until it is determined that no subsurface cultural resources exist within the area of potential effect for both Requa and Aubell areas.	NPS/CDPR	During construction
43	In the event unknown cultural resources are encountered within the Requa and Aubell areas during the course of construction, e.g. lithic scatters, charcoal residue, burial remains, the findings shall be examined by a qualified archeologist per the *Secretary of the Interior's Professional Qualifications Standards for Archaeology* (48 FR 44739). If any find is determined to be significant, representatives of the Yurok Tribe and the qualified archeologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation. In the event of the discovery of human remains, the California Health and Safety Code, Section 7050.5, requires that construction or excavation stop in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the Native American Heritage Commission, and the project sponsors must comply with state and federal laws relating to the disposition of Native American burials.	NPS/CDPR, Construction Contractor	During construction

Table C-1 (Continued)
Mitigation Measures

Mitigation Measure Number	Mitigation Measure Description	Implementation Responsibility	Critical Milestones
44	If human remains of Native American origin are discovered on non-federal land during project construction, CEQA Guidelines 15064.5 (e)(1)(b) shall be implemented: If the coroner determines the remains to be Native American: 1. The coroner shall contact the Native American Heritage Commission within 24 hours. 2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. 3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.	CDPR, Construction Contractor	During construction
45	If human remains of Native American origin are discovered on federal lands during project construction, NPS shall comply with Native American Graves Protection and Repatriation Act regulations relating to the discovery of human remains of Native American origin on federal lands. The regulations implementing the requirements of Native American Graves Protection and Repatriation Act relating to the inadvertent discovery of human remains of Native American origin are described in 43 CFR Part 10, Subpart B, Section 10.4: ▪ Notify in writing the responsible federal agency and ▪ Cease activity in the area of the discovery and protect the human remains Upon notification that human remains have been discovered on federal land, the responsible federal agency will: ▪ Certify receipt of the notification. ▪ Take steps to secure and protect the human remains. ▪ Notify the Native American Tribe or Tribes likely to be culturally affiliated with the discovered human remains within one working day. ▪ Initiate consultation with the Native American Tribe or Tribes in accordance with regulations described in 43 CFR Part 10, Subpart B Section 10.5.	NPS, Construction Contractor	During construction
Transportation			
46	Develop and implement comprehensive traffic control and visitor protection measures for park review/approval that: ▪ Complies with applicable U.S. Department of Transportation, Federal Highway Administration, and California Department of Transportation regulations. ▪ Provides procedures for preparing and submitting specific street closure, traffic control, and detour plans. ▪ Provides procedures for managing staging areas to restrict public access and maintain site safety. ▪ Ensures that motorists are safely and efficiently routed around construction areas, including advance warning signs and a flagger to direct traffic to maintain safe and efficient traffic flow during the construction period. Minimum access requirements for emergency vehicles and personnel would be maintained at all times.	NPS/CDPR	Prior to operation

Table C-1 (Continued)
Mitigation Measures

Mitigation Measure Number	Mitigation Measure Description	Implementation Responsibility	Critical Milestones
47	Install appropriate traffic signs.	NPS/CDPR	During design phase, construction, and operation
48	Provide protective fencing enclosures around construction areas, including utility trenches, to protect public health and safety. Access to active construction areas will be restricted to authorized personnel only.	NPS/CDPR, Construction Contractor	Prior to and during construction
Scenic Resources			
49	Design color of facility to match the vernacular of the landscape.	Construction Contractor	Prior to and during construction
50	Where feasible, consolidate construction equipment and materials to the staging areas at the end of each work day to limit the visual intrusion of construction equipment during non-work hours.	Construction Contractor	Prior to and during construction
51	Provide native vegetation to screen new developed facilities from park visitors' and adjacent land users' views.	NPS/CDPR	During design phase and following construction
52	Design new facilities in an architectural style consistent with the national and state park setting, and that of the surrounding community.	NPS/CDPR	During design phase
53	Include the minimum lighting required for site security.	NPS/CDPR	During design phase
54	Use downward-facing and unobtrusive luminaries at facilities and building entrances and exits. Direct and shield night lighting to minimize light scatter effects.	NPS/CDPR	During design phase
Park Operations and Facilities			
55	Identify the construction zone and inspect the project to ensure that impacts stay within the parameters of the project area and do not escalate beyond the scope of the environmental compliance documentation, as well as to ensure that the project conforms with all applicable permits or project conditions. Store all construction equipment within the delineated work limits. Confine work areas within stream channels to the smallest area necessary.	NPS/CDPR, Construction Contractor	Prior to and during construction
56	Implement compliance monitoring to ensure that the project remains within the parameters of NEPA, CEQA, and National Historic Preservation Act compliance documents, all applicable permits, etc.	NPS/CDPR, Construction Contractor	Prior to and during construction
57	Provide a project orientation for all construction workers to increase their understanding and sensitivity to the challenges of the special environment in which they will be working.	NPS/CDPR, Construction Contractor	Prior to and during construction
58	Remove all tools, equipment, barricades, signs, surplus materials, and rubbish from the project work limits upon project completion. Remove all debris from the project area, including all visible concrete, timber, and metal pieces not specifically required on-site in the project plans and specifications.	Construction Contractor	During construction

Table C-1 (Continued)
Mitigation Measures

Mitigation Measure Number	Mitigation Measure Description	Implementation Responsibility	Critical Milestones
59	Develop and implement a safety plan, which includes emergency notification procedure that complies with park, federal, and state requirements and allows contractors or staff to properly notify park, federal, and/or state personnel in the event of an emergency during construction activities. This will address notification requirements related to fire, personnel, and/or visitor injury, releases of spilled material, evacuation processes, etc. The emergency notification procedure will be submitted to the parks for review/approval prior to implementation and start of work.	NPS/CDPR, Construction Contractor	Prior to and during construction
60	Consult with utilities companies (i.e., water, wastewater, electric, communications, and telephone service suppliers) prior to the start of construction to determine the location of facilities within the project area. Locate and flag existing utility lines, pipelines, etc., and appropriate buffer zones, prior to the start of any excavation, heavy equipment use, or other activities that could damage the utilities. Advise the Underground Services Alert and agency maintenance staff at least 72 hours in advance of any planned ground disturbance in the vicinity of these areas (or in accordance with notification requirements).	NPS/CDPR, Construction Contractor	Prior to and during construction
61	Minimize the use of hazardous materials for the project. Store and use all hazardous materials in compliance with federal regulations. All applicable Materials Safety Data Sheets will be kept on site for inspection. Dispose of hazardous materials at a licensed facility	NPS/CDPR, Construction Contractor	Throughout project timeline
62	Removal, installation, or operation of underground and aboveground storage tanks shall comply with federal and state regulations.	NPS/CDPR, Construction Contractor	Throughout project timeline
63	Develop and implement a comprehensive spill prevention/response plan that complies with federal and state regulations and addresses all aspects of spill prevention, notification, emergency spill response strategies for spills occurring on land and water, reporting requirements, monitoring requirements, personnel responsibilities, response equipment type and location, and drills and training requirements. The spill prevention/response plan will be submitted to the parks for review/approval prior to commencement of construction activities.	NPS/CDPR, Construction Contractor	Throughout project timeline
64	Prior to entry into the parks, clean heavy equipment to prevent importation of non-native plant species, tighten hydraulic fittings, ensure hydraulic hoses are in good condition and replace if damaged, and repair all petroleum leaks.	Construction Contractor	During construction
65	To minimize the possibility of hazardous materials seeping into soil or water, check equipment frequently to identify and repair any leaks. Standard measures include hazardous materials storage and handling procedures; spill containment, cleanup, and reporting procedures; and limitation of refueling and other hazardous activities to upland/nonsensitive sites. Provide an adequate hydrocarbon spill containment system (e.g., absorption materials, etc.) on site, in case of unexpected spills in the project area. Ensure equipment is equipped with a hazardous spill containment kit. Ensure that personnel trained in the use of hazardous spill containment kits are on site at all times during construction activities.	NPS/CDPR, Construction Contractor	Throughout project timeline
66	Reuse and recycle project materials to the extent feasible. Dispose of project waste at an approved landfill.	NPS/CDPR, Construction Contractor	Throughout project timeline

Appendix D: Special-status Species

The Federal Endangered Species Act of 1973, as amended, requires all federal agencies to consult with the U.S. Fish and Wildlife Service and/or NOAA Fisheries (for anadromous fish) as appropriate before taking actions that could jeopardize the continued existence of species that are "listed" or proposed to be listed as threatened or endangered, or could result in the destruction or adverse modification of critical or proposed critical habitat. The California Endangered Species Act parallels the policies of the Federal Endangered Species Act and was written to protect state endangered and threatened plant and animal species whose continued existence in California is in jeopardy.

In addition, *Council on Environmental Quality Regulations for Implementing the National Environmental Policy Act* (Section 1508.27) also require considering whether the action may violate federal, state, or local law or requirements imposed for the protection of the environment. For this reason, species listed under the California Endangered Species Act or accorded "special status" (i.e., considered rare or sensitive) by the California Department of Fish and Game are included in this analysis.

The various federal, state, and NPS categories for special-status species are defined as:

- Federal endangered
- Federal threatened
- Federal species of concern
- California endangered
- California threatened
- California species of special concern
- California rare (plants only)
- Park rare

This appendix includes the special-status species list developed for Rare, Sensitive, Threatened, and Endangered Species Known to Occur in Redwood National and State Parks, which was included as Appendix I of the park's *Final General Management Plan / General Plan, Environmental Impact Statement / Environmental Impact Report* (1999). This special-status species list has been updated by park staff to include more recent information regarding species occurrence and status. In addition, Appendix D includes the October 2004 U.S. Fish and Wildlife Service special-status species list for Redwood National and State Parks (USFWS 2004a).

Table I-1
Threatened and Endangered Species Known to Occur in Redwood National and State Parks

Species	Status	Known or Suspected Occurrence in Parks	Breeding Observations
BIRDS			
Northern spotted owl *Strix occidentalis caurina*	FT	uncommon resident in old-growth and mature second-growth forests throughout the parks	known to breed successfully in the parks
Marbled murrelet *Brachyramphus marmoratus marmoratus*	FT, SE	common resident in old-growth forests throughout the parks; old growth forest occurs more than a quarter mile of the eastern border of the Aubell area; state parks are designated as critical habitat	known to breed successfully in the parks
Brown pelican *Pelecanus occidentalis californicus*	FE, SE	common visitor on ocean shoreline throughout the parks	not known to breed in the parks
Western snowy plover *Charadrius alexandrinus nivosus*	FT	uncommon visitor on sandy beaches and coastal dunes throughout the parks throughout the year; probable former resident	known to breed successfully in the parks
American peregrine falcon *Falco peregrinum anatum*	SE	uncommon resident on steep coastal bluffs, cliffs, and high rocky outcrops	known to breed successfully in parks
Bald Eagle *Haliaeetus leococephalus*	FT, SE	uncommon resident along rivers, streams, and coastal lagoons	known to breed successfully in the parks
FISH			
Tidewater goby *Eucyclogobius newberryi*	FE	suspected coastal estuaries and lagoons (recorded in 1980 survey but not observed since)	assumed to have bred successfully in Redwood Creek estuary and Freshwater Lagoon at one time
Northern California steelhead *Oncorhynchus mykiss*	FC, CSC	streams south of the Klamath River	Redwood Creek, Prairie Creek, and tributaries
Klamath Mountains Province steelhead *Oncorhynchus mykiss*	FC, CSC	streams north of and including the Klamath River	Klamath River, Smith River, Mill Creek, and coastal streams with suitable habitat in wet years
Coho salmon, Southern Oregon / Northern California Coast *Oncorhynchus kisutch*	FT, CSC	streams between Cape Blanco, Curry County, Oregon, and Punta Gorda, Humboldt County, California; park streams are designated critical habitat	Smith River, Mill Creek, Redwood Creek, Prairie Creek, and larger tributaries
Chinook salmon, California Coastal *Oncorhynchus tshawytscha*	FPT, CSC	streams from Elk River, or south to the northern cape forming San Francisco Bay	Redwood, Prairie, and Mill Creeks; Smith and Klamath Rivers
Coastal cutthroat trout *Oncorhynchus clarki clarki*	FC, CSC	small creek and tributaries of rivers and larger creeks	Klamath and Smith Rivers; Redwood, Prairie, and Mill Creeks, tributaries, and coastal creeks; Espa Lagoon
INVERTEBRATES			
Mardon skipper *Polites mardon*	FC	fescue grasslands/pine woodlands in Little Bald Hills	known to breed successfully in the parks
MAMMALS			
Pacific fisher *Martes pennanti pacifica*	FC	common resident in old-growth and mature second growth forests throughout the parks	assumed to breed successfully in the parks
Steller (=northern) sea-lion *Eumetopias jubatus*	FT	common resident on offshore rocks near Klamath River mouth	suspected to breed successfully in the parks
PLANTS			
Beach layia *Layia carnosa*	FE, SE	confirmed on Freshwater Lagoon Spit	successfully reproduces in the parks

Note: See the end of this appendix for definitions and abbreviations.

Table I-2
Listed or Proposed Threatened and Endangered Species that are Found Near Redwood National and State Parks

Species	Status	Habitat	Probable or Nearest Occurrence in The Parks
INVERTEBRATES			
Oregon silverspot butterfly *Speyeria erene hippolyta*	FT	coastal scrub	Lakes Earl and Talawa, 3 miles west of Jedediah Smith Redwoods State Park
BIRDS			
Bank swallow *Riparia riparia*	ST	near marshes, streams and lakes; nests colonially in sandy stream banks	accidental in parks; record from Lagoon Creek; breeding colony along lower Smith River 2 miles west of Jedediah Smith Redwoods State Park
Great gray owl *Strix nebulosa*	SE	lodgepole pine forest and other coniferous forest types adjacent to meadows	accidental in parks; records from Prairie Creek and Enderts Beach
Aleutian Canada goose *Branta canadensis leucopareia*	FT	low elevation riverbottoms and agricultural pastures	accidental in parks; winters at Smith River riverbottoms northwest of Jedediah Smith Redwoods and Patrick's Point State Park south of the parks
REPTILES			
Leatherback sea turtle *Dermochelys coriacea*	FE	generally warmer oceans	only sick or injured animals likely to wash up on beaches; no nesting beaches known on northern Pacific Coast
Green sea turtle *Chelonia mydas* (incl. *agassizi*)	FT		
Loggerhead sea turtle *Caretta caretta*	FT		
Olive (=Pacific) ridley sea turtle *Lepidochelys olivacea*	FT		
PLANTS			
Western lily *Lilium occidentale*	FE	wetland in coastal scrub and coastal prairie; forest or thicket openings along the margins of ephemeral ponds and small channels; unconfirmed report in the northern part of park	Table Bluffs, south of Eureka, Humboldt County and near Crescent City, Del Norte County
McDonald's rock cress *Arabis macdonaldiana*	FE, SE	dry, rocky serpentine sites	North Fork Smith River drainage near Gasquet, Del Norte County
Menzies' wallflower *Erysimum menziesii*	FE, SE	semistabilized northern coastal dunes	30 miles south of parks, Samoa Peninsula and Lanphere-Christensen Dune Preserve, Humboldt County

NOTE: Species included in this table are listed or proposed as threatened or endangered but occur only casually or accidentally in the parks. See the end of this appendix for definitions and keys.

Table I-3
Special Plants, and Rare and Sensitive Animal Species Known or Suspected to Occur in Redwood National and State Parks or Vicinity

Species	Status	Habitat	Park Location or Nearest Known Occurrence
PLANTS			
Kneeland prairie pennycress *Thlaspi montanum* var. *californicum*	FC, 1B	serpentine prairies	40 miles south of the parks in prairies around Kneeland, Humboldt County; not likely to colonize the parks
Two-flowered pea *Lathyrus biflorus*	FC, 1B	open, dry sunny slopes on cobbly, serpentine, or meta-sedimentary soils in high elevation Jeffrey pine woodland and montaine chaparral	50 miles southeast of the parks, the Lassics Special Botanical Area, and Six Rivers National Forest; not likely to colonize the parks
Wolf's evening primrose *Oenothera wolfii*	1B	coastal dunes	Enderts Beach
Pink sand verbena *Abronia umbellata* ssp. *brevifolia*	1B	coastal dunes, bluffs, and gravel roadbanks	Freshwater Lagoon Spit, mouth of Redwood Creek, and Gold Bluffs Beach
Maple-leaved checkerbloom *Sidalcea malachroides*	1B	coastal woodlands and clearings	Del Norte Coast Redwoods State Park; Mill Creek Horse Trail; and trail to Nickel Creek campground
Siskiyou checkerbloom *Sidalcea malvaeflora* ssp. *patula*	1B	open coastal forest on serpentine soils	known from Del Norte County
Western bog violet *Viola primulifolia* ssp. *occidentalis*	1B	*Darlingtonia* bogs and marshes in mixed evergreen forest below 2,500 feet in elevation	known from Del Norte County
Thurber's reed grass *Calamagrostis crassiglumis*	2	coastal dunes	near Crescent City
Siskiyou Indian paintbrush *Castilleja miniata* ssp. *elata*	2	bogs, often near serpentine	known from Del Norte County
Black crowberry *Empetrum nigrum* ssp. *hermaphroditum*	2	rocky sea cliffs in coastal scrub	known from Del Norte and Humboldt Counties
Waldo buckwheat *Eriogonum pendulum*	2	open serpentine	known from Del Norte County
Marsh pea *Lathyrus palustris*	2	moist coastal areas	last known occurrence along Tall Trees access road
Running-pine *Lycopodium clavatum*	2	moist ground in forests	Larry Damm Creek, Lost Man Creek drainage
Indian pipe *Monotropa uniflora*	2	low elevation redwood, mixed, and coniferous forests	Prairie Creek and Jedediah Smith Redwoods State Parks
Horned butterwort *Pinguicula vulgaris ssp. macroceras*	2	moist serpentine banks	known from Del Norte County
Great burnet *Sanguisorba officinalis* ssp. *microcephala*	2	bogs and streams, often on serpentine	unknown
Arctic starflower *Trientalis arctica*	2	bogs and other wet areas	known from near Crescent City
Langsdorf's violet *Viola langsdorfii*	2	bogs among coastal dunes	near Crescent City
Marsh violet *Viola palustris*	2	wet shrubby places in coastal scrub below 500 feet in elevation	unknown
Howell's manzanita *Arctostaphylos hispidula*	4	rocky serpentine soils or sandstone, open sites, and forest	Little Bald Hills
Bolander's reed grass *Calamagrostis bolanderi*	4	bogs, moist meadows, open woodlands at low elevations	unknown
Leafy reed grass *Calamagrostis foliosa*	4	bluffs, cliffs, coastal scrub, and forest	unknown
Oregon bleeding heart *Dicentra formosa* ssp. *oregana*	4	damp shaded areas on serpentine soils	most likely to occur in Jedediah Smith Redwoods State Park

Table I-3 (Continued)
Special Plants, and Rare and Sensitive Animal Species Known or Suspected to Occur in Redwood National and State Parks or Vicinity

Species	Status	Habitat	Park Location or Nearest Known Occurrence
PLANTS (CONT.)			
Siskiyou daisy *Erigeron cervinus*	4	rocky open slopes, meadows, pine to fir woods above 2,500 feet in elevation	unknown
Tracy's tarplant *Hemizonia congesta* ssp. *tracyi*	4	grasslands and fallow fields in serpentine soils	Bald Hills
Howell's horkelia *Horkelia sericata*	4	dry rocky serpentine clay, open chaparral, or pine forest	most likely to occur in Jedediah Smith Redwoods State Park and Little Bald Hills
California globemallow *Iliamna latibracteata*	4	coniferous forests and streamsides	known from Humboldt and Del Norte Counties
Hair-leaved rush *Juncus supiniformis*	4	marshes, ponds, and ditches mostly below 300 feet in elevation	unknown
Del Norte pea *Lathyrus delnorticus*	4	streambanks and serpentine	Jedediah Smith Redwoods State Park
Bolander's lily *Lilium bolanderi*	4	chaparral, Douglas-fir, and knobcone pine	Jedediah Smith Redwoods State Park and Little Bald Hills
Vollmer's lily *Lilium pardalinum* ssp. *vollmeri*	4	coastal bogs, streams, and springs	unknown
Wiggins' lily *Lilium pardalinum* ssp. *wigginsii*	4	wet thickets, meadows, and streams among conifers	unknown
Purple-flowered Shasta lily *Lilium washingtonianum* ssp. *purpurascens*	4	Douglas-fir forest on serpentine soils	most likely in Jedediah Smith Redwoods State Park and Little Bald Hills
Heart-leaved twayblade *Listera cordata*	4	redwood and moist Douglas-fir forest	Jedediah Smith Redwoods State Park and Little Bald Hills
Howell's lomatium *Lomatium howellii*	4	serpentine, chaparral, and coniferous forest	most likely in Jedediah Smith Redwoods State Park and Little Bald Hills
Tracy's lomatium *Lomatium tracyi*	4	open pine forest, serpentine	most likely in Jedediah Smith Redwoods State Park and Little Bald Hills
Northern bugleweed *Lycopus uniflorus*	4	moist areas, marshes, and springs	unknown
Howell's sandwort *Minuartia howellii*	4	chaparral, Jeffrey pine/oak woodland, and serpentine	most likely in Jedediah Smith Redwoods State Park and Little Bald Hills
Nodding semaphore grass *Pleuropogon refractus*	4	wet meadows, shady banks in redwood and Douglas-fir forest	Prairie Creek and Del Norte Coast Redwoods State Parks
California pinefoot *Pityopus californicus*	4	redwood, mixed, or coniferous forest	Prairie Creek Redwoods State Park, Bald Hills, and near South Operations Center
Del Norte pyrrocoma *Pyrrocoma racemosa var. congesta*	4	chaparral, coniferous forest on serpentine soils	name suggests that it is most likely to occur in Jedediah Smith Redwoods State Park and Little Bald Hills
Del Norte willow *Salix delnorticus*	4	serpentine stream sides	known from near Gasquet
Peck's sanicle *Sanicula peckiana*	4	serpentine, chaparral, woodland	most likely in Jedediah Smith Redwoods State Park and Little Bald Hills
Glaucous tauschia *Tauschia glauca*	4	gravelly, often serpentine, flats in coniferous forests	most likely in Jedediah Smith Redwoods State Park and Little Bald Hills
Siskiyou inside-out flower *Vancouveria chrysantha*	4	dry sites, chaparral, coniferous forest on serpentine soils	most likely in Jedediah Smith Redwoods State Park and Little Bald Hills
AMPHIBIANS			
Del Norte salamander *Plethodon elongatus elongatus*	CSC	rock rubble and outcrops, road fill, and moss-covered talus in mature and old-growth coniferous forests	throughout parks in suitable habitat
Southern seep salamander *Rhyacotriton variegatus*	CSC	well-shaded seepages and streams in riparian, deciduous, and coniferous forests	throughout parks in suitable habitat

Table I-3 (Continued)
Special Plants, and Rare and Sensitive Animal Species Known or Suspected to Occur in Redwood National and State Parks or Vicinity

Species	Status	Habitat	Park Location or Nearest Known Occurrence
AMPHIBIANS (CONT.)			
Tailed frog *Ascaphus truei*	CSC	streams in forests and grasslands	throughout parks in suitable habitat
Northern red-legged frog *Rana aurora aurora*	CSC	shaded streams and ponds in woodlands, forests, and grasslands	common throughout parks; coastal ponds near Enderts and Crescent Beaches are important breeding sites
Foothill yellow-legged frog *Rana boylii*	CSC	streams and rivers in woodlands, forests, and grasslands	throughout parks in suitable habitat
REPTILES			
Western pond turtle *Clemmys marmorata*	CSC	ponds and open water bodies	Prairie Creek and Del Norte Coast Redwoods State Parks; dead individual found at Redwood Creek estuary
BIRDS			
Common loon *Gavia immer*	CSC	coastal waters, lagoons, rivers, and streams	common winter visitor to parks
Double-crested cormorant *Phalacrocorax auritus*	CSC	coastal waters, rivers, and large streams	common resident; confirmed breeder on offshore rocks
Osprey *Pandion haliaetus*	CSC	coastal waters, streams, and rivers, with snags and broken-topped trees	summer visitor; breeds in parks
Northern harrier *Circus cyaneus*	CSC	grasslands and open fields	resident; breeds in suitable habitat in parks
Sharp-shinned hawk *Accipiter striatus*	CSC	forests and open woodlands	resident; breeds in suitable habitat in parks
Cooper's hawk *Accipiter cooperi*	CSC	forests and open woodlands	resident; breeds in suitable habitat in parks
Golden eagle *Aquila chrysaetos*	CSC	open mountains and foothills	casual visitor over Bald Hills and open habitat in eastern part of Jedediah Smith Redwoods State Park
Merlin *Falco columbarius*	CSC	coastal areas, rivers, streams, brushy areas, and second-growth forests	winter visitor in suitable habitat in parks
Ruffed grouse *Bonansa umbellus*	CSC	deciduous forests	common resident; breeds in suitable habitat in parks
California gull *Larus californicus*	CSC	coastal areas	primarily a winter visitor in parks
Burrowing owl *Athene cunicularia*	CSC	dunes and coastal grasslands	sporadic breeder in parks (nesting pair at Redwood Information Center in 1995)
Long-eared owl *Asio otus*	CSC	coastal grasslands and agricultural areas	a few winter records for northwestern California coast in Humboldt County; no park records
Short-eared owl *Asio flammeus*	CSC	dunes, coastal grasslands, and agricultural lands	casual winter visitor in parks
Vaux's swift *Chaetura vauxi*	CSC	forests, woodlands, grasslands, fields, and towns	breeds in parks
Purple martin *Progne subis*	CSC	open areas and forests with nesting cavities	summer visitor; breeds in forests with snags that provide nesting cavities
Black-capped chickadee *Parus atricapillus*	CSC	riparian and deciduous forests	resident; breeds in parks
Yellow warbler *Dendroica petechia*	CSC	lowland riparian and deciduous woodlands, and coastal scrub	summer visitor; breeds in suitable habitat throughout parks
Yellow-breasted chat *Icteria virens*	CSC	lowland riparian and deciduous woodlands	summer visitor; breeds in suitable habitat throughout parks

Table I-3 (Continued)
Special Plants, and Rare and Sensitive Animal Species Known or Suspected to Occur in Redwood National and State Parks or Vicinity

Species	Status	Habitat	Park Location or Nearest Known Occurrence
MAMMALS			
Townsend's big-eared bat *Plecotus townsendii*	CSC	caves, mines, abandoned buildings, large hollow trees	no breeding colonies or hibernacula known; recorded from WWII radar site; probable in hollow redwoods as an accidental or transient
White-footed vole *Arborimus albipes*	CSC	dense red alder and willow forests	known from all three state parks; usually found in trees
Red tree vole *Arborimus longicaudus*	CSC	humid coastal Douglas fir forests	known from Prairie Creek Redwoods State Park; abundant suitable habitat throughout parks; strictly a tree-dwelling species in coastal, not inland, forests

NOTE: Redwood National and State Parks are also inhabited by, or contain suitable habitat for, species and the parks should be watched for changes in distribution or population size due to biological rarity, low numbers, limited distribution, or declining populations. "Special plants" is a broad term used to refer to all the plant taxa inventoried by the California Department of Fish and Game's Natural Diversity Base, regardless of their protection status. Also included are plant and animal populations that may be peripheral to the major portion of a taxon range but are threatened with extirpation in California, or they are associated with a seriously declining habitat such as wetlands, riparian areas, old-growth forests, or native grasslands. If these species continue to decline in numbers or distribution, special management consideration may be necessary to ensure their continuing viability and preclude trends toward endangerment that would result in state or federal listing. See the end of this appendix for definitions and keys.

Definitions and Key to Abbreviations

PC = Prairie Creek Redwoods State Park
DNC = Del Norte Coast Redwoods State Park
JS = Jedediah Smith Redwoods State Park

Common = a species that is always or almost always encountered in proper season and habitat
Uncommon = a species that is present but not certain to be encountered in proper season and habitat
Rare = a species that is present but in very low numbers and is not likely to be encountered even in proper habitat

Casual = a species for which there are few records but is reasonably expected to occur again
Accidental = a species that is out of its usual range and whose occurrence is unexpected and unpredictable
Resident = a species that occurs in a given locality or habitat throughout the year in consistent numbers
Visitor = a species that occurs in a given locality or habitat during a particular season

T = Threatened = listed as threatened under the federal Endangered Species Act of 1973, as amended. The U.S. Fish and Wildlife Service defines threatened as any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range
E = Endangered = listed as endangered under either the federal Endangered Species Act of 1973, as amended, or the California Endangered Species Act. The U.S. Fish and Wildlife Service defines endangered as any species that is in danger of extinction throughout all or a significant portion of its range
P = Proposed = Proposed for listing as threatened or endangered
C= Candidate = Candidate species being reviewed by the U.S. Fish and Wildlife Service or National Marine Fisheries Service and under consideration for possible federal listing as threatened or endangered. Candidate species are those for which the U.S. Fish and Wildlife Service has enough information to propose listing
F = Federal = U.S. Fish and Wildlife Service (50 CFR 17.11 and 17.12) or National Marine Fisheries Service (50 CFR Parts 222 and 227)
CSC= Species of Special Concern = Species about which the California Department of Fish and Game is concerned because of their limited numbers or because their breeding populations have declined in California so severely that they could become threatened or endangered
S = State = California Department of Fish and Game listing pursuant to Section 1904 (Native Plant Protection Act of 1977) and Section 2074.2 and 2075.5 (California Endangered Species Act of 1984) of the *California Fish and Game Code*

1B= CNPS List 1B = Plants listed by California Native Plant Society as rare and endangered in California and elsewhere
2 = CNPS List 2= Plants listed by California Native Plant Society as rare or endangered in California but more common elsewhere
4 = CNPS List 4= Plants of limited distribution that should be watched for changes in population status or distribution, according to California Native Plant Society

Download this report in Microsoft Word format (.doc)

If you do not have Microsoft Word installed on your computer, you can download a .doc viewer here

Create Another Report | AFWO Home

Listed/Proposed Threatened and Endangered Species for the Redwood National and State Parks (REDW) Administrative Unit (Candidates Included)

October 21, 2004

Document Number: *1069666905-105656*

TYPE	SCIENTIFIC NAME	COMMON NAME	CATEGORY	CRITI HABI
Plants				
	Layia carnosa	beach layia	E	N
	Lilium occidentale	western lily	E	N
Invertebrates				
	Polites mardon	mardon skipper	C	N
	Speyeria zerene hippolyta	Oregon silverspot butterfly	T	Y
Fish				
*	*Acipenser medirostris*	green sturgeon	C	N
	Eucyclogobius newberryi	tidewater goby	E	Y
*	*Oncorhynchus kisutch*	S. OR/N. CA coho salmon	T	Y
*	*Oncorhynchus mykiss*	Northern California steelhead	T	N
*	*Oncorhynchus tshawytscha*	CA coastal chinook salmon	T	N
*	*Sebastes paucispinis*	bocaccio	C	N
Reptiles				
*	*Caretta caretta*	loggerhead turtle	T	N
*	*Chelonia mydas (incl. agassizi)*	green turtle	T	N
*	*Dermochelys coriacea*	leatherback turtle	E	Y
*	*Lepidochelys olivacea*	olive (=Pacific) ridley sea turtle	T	N
Birds				
	Brachyramphus marmoratus	marbled murrelet	T	Y
	Charadrius alexandrinus nivosus	western snowy plover	T	Y
	Coccyzus americanus	Western yellow-billed cuckoo	C	N
	Haliaeetus leucocephalus	bald eagle	T	N
	Pelecanus occidentalis californicus	California brown pelican	E	N
	Phoebastris albatrus	short-tailed albatross	E	N

	Strix occidentalis caurina	northern spotted owl	T	Y
	Synthliboramphus hypoleucus	Xantus's murrelet	C	N
Mammals				
*	*Balaenoptera borealis*	sei whale	E	N
*	*Balaenoptera musculus*	blue whale	E	N
*	*Balaenoptera physalus*	fin whale	E	N
*	*Eumetopias jubatus*	Steller (=northern) sea-lion	T	Y
	Martes pennanti pacifica	Pacific fisher	C	N
*	*Megaptera novaengliae*	humpback whale	E	N
*	*Physeter macrocephalus*	sperm whale	E	N

KEY:

(PE) Proposed Endangered	Proposed in the Federal Register as being in danger of extinction
(PT) Proposed Threatened	Proposed as likely to become endangered within the foreseeable future
(E) Endangered	Listed in the Federal Register as being in danger of extinction
(T) Threatened	Listed as likely to become endangered within the foreseeable future
(C) Candidate	Candidate which may become a proposed species
Critical Habitat	Y = Designated, P = Proposed, N = None Designated
*	Denotes a species Listed by the National Marine Fisheries Service

Appendix E: NEPA Impact Threshold Definitions

Table E-1
Impact Threshold Definitions for NEPA Analyses (all definitions assume mitigation measures would be implemented)

Redwood Maintenance Facility Relocation Environmental Assessment and
Initial Study/Mitigated Negative Declaration
Redwood National and State Parks

Seismic Hazards

The planning team based the impact analysis and the conclusions for possible seismic hazards impacts on the on-site inspection of known and potential seismic hazards within the parks (Requa and Aubell area s), review of existing literature, and studies and information provided by NPS experts and other agency experts, and park staff insights and professional judgment. The thresholds of change for the intensity of an impact are defined as follows:

Impact Intensity	Impact Description
Negligible	The action would result in a changed vulnerability to seismic hazards, but the change would be so small that it would not be of any measurable or perceptible consequence.
Minor	The action would result in a changed vulnerability to seismic hazards, but the change would be small and localized and of little consequence.
Moderate	The action could result in a changed vulnerability to seismic hazards; the change would be measurable and of consequence.
Major	An action that would result in a noticeable changed vulnerability to seismic hazards; the change would be measurable and result in a severely adverse or major beneficial impact.

Duration:

Short-term – There are no short-term seismic hazard impacts.
Long-term – All seismic hazards impacts would be long-term.

Soils

All available information on soils potentially impacted in various areas of the parks was compiled. Where possible, map locations of sensitive soils were compared with locations of proposed developments and modifications of existing facilities. The thresholds of change for the intensity of an impact are defined as follows:

Impact Intensity	Impact Description
Negligible	Soils would not be affected or the effects to soils would be below or at the lower levels of detection. Any effects to soils would be slight.
Minor	The effects to soils would be detectable. Effects to soil area would be small. Mitigation may be needed to offset adverse effects and would be relatively simple to implement and likely be successful.
Moderate	The effect on soil would be readily apparent and result in a change to the soil character over a relatively wide area. Mitigation measures would be necessary to offset adverse effects and likely be successful.
Major	The effect on soil would be readily apparent and substantially change the character of the soils over a large area in and out of the park. Mitigation measures to offset adverse effects would be needed, extensive, and their success could not be guaranteed.

Duration:

Short-term – Impacts to soil would last less than 3 years.
Long-term – Soils would take more than 3 years to recover.

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

Floodplains

Floodplains are defined by the NPS Floodplain Management Guideline as "the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to temporary inundation by a regulatory flood." Executive Order 11988 ("Floodplain Management") requires an examination of impacts to floodplains; of potential risk involved in placing facilities within floodplains, and protecting floodplain values. NPS has adopted the policy of preserving floodplain values and minimizing potentially hazardous conditions associated with flooding (NPS *Floodplain Management Guideline*, July 1, 1993). The planning team based the impact analysis and the conclusions for possible impacts to 100- and 500-year floodplains on the on-site inspection of known and potential 100- and 500-year floodplains within the park, review of existing literature and studies, information provided by NPS experts and other agency experts, and park staff insights and professional judgment. The thresholds of change for the intensity of an impact are defined as follows:

Impact Intensity	Impact Description
Negligible	There would be no change in the ability of a floodplain to convey floodwaters, or its values and functions. Project would not contribute to the flood.
Minor	Changes in the ability of a floodplain to convey floodwaters, or its values and functions, would be measurable and local, although the changes would be only just measurable. Project would not contribute to the flood. No mitigation would be needed.
Moderate	Changes in the ability of a floodplain to convey floodwaters, or its values and functions, would be measurable and local. Project could contribute to the flood. The impact could be mitigated by modification of proposed facilities in floodplains.
Major	Changes in the ability of a floodplain to convey floodwaters, or its values and functions, would be measurable and, widespread. Project would contribute to the flood. The impact could

Duration:

Short-term – Usually less than one year. Impacts would not be measurable or measurable only during the life of construction.

Long-term – Usually more than one year. Impacts would be measurable during and after project construction.

Water Quality

NPS *Management Policies 2001* state that NPS will "take all necessary actions to maintain or restore the quality of surface waters and ground waters within the parks consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations" (Section 4.6.3).

A water quality standard defines the water quality goals of a waterbody by designating uses to be made of the water, by setting minimum criteria to protect the uses, and by preventing degradation of water quality through antidegradation provisions. The antidegradation policy is only one portion of a water quality standard. Part of this policy (40 Code of Federal Regulations [CFR] 131.12(a)(2)) strives to maintain water quality at existing levels if it is already better than the minimum criteria. Antidegradation should not be interpreted to mean that "no degradation" can or will occur, as even in the most pristine waters, degradation may be allowed for certain pollutants as long as it is temporary and short term.

Other considerations in assessing the magnitude of water quality impacts is the effect on those resources dependent on a certain quality or condition of water. Sensitive aquatic organisms, submerged aquatic vegetation, riparian areas, and wetlands are affected by changes in water quality from direct and indirect sources.

Given the above water quality issues and methodology and assumptions, the following impact thresholds were established in order to describe the relative changes in water quality under the alternatives.

Impact intensity	Impact Description
Negligible	Impacts (chemical, physical, or biological effects) that would not be detectable, would be well below water quality standards or criteria, and would be within historical or desired water quality conditions.
Minor	Impacts (chemical, physical, or biological effects) would be detectable but would be well below water quality standards or criteria and within historical or desired water quality conditions.

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

Impact intensity	Impact Description
Moderate	Impacts (chemical, physical, or biological effects) would be detectable but would be at or below water quality standards or criteria; however, historical baseline or desired water quality conditions would be temporally altered.
Major	Impacts (chemical, physical, or biological effects) would be detectable and would be frequently altered from the historical baseline or desired water quality conditions; and/or chemical, physical, or biological water quality standards or criteria would temporarily be slightly and singularly exceeded.

Duration:

Short-term – Following treatment, recovery would take less than one year.
Long-term – Following treatment, recovery would take longer than one year.

Wetlands

Wetlands are "lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface" (U.S. Fish and Wildlife Service 1979). Executive Order 1990 ("Protection of Wetlands") requires an examination of impacts to wetlands; and protecting wetlands. NPS has adopted a "no net loss" of wetlands. The planning team based the impact analysis and the conclusions for possible impacts on wetlands on the on-site inspection of known and potential jurisdictional wetlands within the park, review of existing literature and studies, information provided by NPS experts and other agency experts, and park staff insights and professional judgment. The thresholds of change for the intensity of an impact are defined as follows:

Impact Intensity	Impact Description
Negligible	Wetlands would not be affected or the effects would be below or at the lower levels of detection.
Minor	The effects to wetlands would be detectable and relatively small in terms of area and the nature of the change. The action would affect a limited number of individuals of plant or wildlife species within the wetland.
Moderate	The effects to wetlands would be readily apparent over a relatively small area but the impact could be mitigated by restoring previously degraded wetlands. The action would have a measurable effect on plant or wildlife species within the wetland, but all species would remain indefinitely viable.
Major	The effects to wetlands would be readily apparent over a relatively large area. The action would have measurable consequences for the wetland area that could not be mitigated. Wetland species would be at risk of extirpation from the area.

Duration:

Short-term – Recovers in less than 3 years.
Long-term – Takes more than 3 years to recover.

Vegetation

All available information on vegetation and vegetative communities potentially impacted at the Requa and Aubell area s was compiled. Predictions about short- and long-term site impacts were based on previous projects with similar vegetation and recent studies. The thresholds of change for the intensity of an impact are defined as follows:

Impact Intensity	Impact Description
Negligible	No native vegetation would be affected or some individual native plants could be affected as a result of the alternative, but there would be no effect on native species populations. The effects would be on a small scale and no species of special concern would be affected.
Minor	The alternative would affect some individual native plants and would also affect a relatively minor portion of that species' population. Mitigation to offset adverse effects, including special measures to avoid affecting species of special concern, could be required and would be effective.

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

Impact Intensity	Impact Description
Moderate	The alternative would affect some individual native plants and would also affect a sizeable segment of the species' population and over a relatively large area. Mitigation to offset adverse effects could be extensive, but would likely be successful. Some species of special concern could also be affected.
Major	The alternative would have a considerable effect on native plant populations, including species of special concern, and affect a relatively large area in and out of the park. Mitigation measures to offset the adverse effects would be required, extensive, and success of the mitigation measures would not be guaranteed.

Duration:

Short-term – Recovers in less than 3 growing seasons.
Long-term – Takes more than 3 growing seasons to recover.

Wildlife

The NPS Organic Act, which directs parks to conserve wildlife unimpaired for future generations, is interpreted by the agency to mean that native animal life should be protected and perpetuated as part of the park's natural ecosystem. Natural processes are relied on to control populations of native species to the greatest extent possible; otherwise they are protected from harvest, harassment, or harm by human activities. According to NPS *Management Policies 2001*, the restoration of native species is a high priority (Section 4.1). Management goals for wildlife include maintaining components and processes of naturally evolving park ecosystems, including natural abundance, diversity, and the ecological integrity of plants and animals. Information on wildlife was taken from park documents and records. The Redwood National and State Parks natural resource management staff also provided wildlife information.

Impact intensity	Impact Description
Negligible	There would be no observable or measurable impacts to native species, their habitats, or the natural processes sustaining them. Impacts would be well within natural fluctuations.
Minor	Impacts would be detectable, but they would not be expected to be outside the natural range of variability of native species' populations, their habitats, or the natural processes sustaining them. Mitigation measures, if needed to offset adverse effects, would be simple and successful.
Moderate	Breeding animals of concern are present; animals are present during particularly vulnerable life-stages, such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the parks unit. Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they could be outside the natural range of variability. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.
Major	Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be outside the natural range of variability. Key ecosystem processes might be disrupted. Loss of habitat might affect the viability of at least some native species. Extensive mitigation measures would be needed to offset any adverse effects and their success would not be guaranteed.

Duration:

Short-term – Recovers in less than 1 year.
Long-term – Takes more than 1 year to recover.

Special-status Species

The Endangered Species Act (16 United States Coder [USC] 1531 et seq.) mandates that all federal agencies consider the potential effects of their actions on species listed as threatened or endangered. If NPS determines that an action may adversely affect a federally listed species, consultation with the U.S. Fish and Wildlife Service is required to ensure that the action will not jeopardize the species' continued existence or result in the destruction or adverse modification of critical habitat. NPS *Management Policies 2001* state that potential effects of agency actions will also be considered on state or locally listed species. The NPS is required to control access to critical habitat of such species, and to perpetuate the natural distribution and abundance of these species and the ecosystems upon which

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

they depend. Information on possible threatened, endangered, candidate species and species of special concern was gathered from Redwood National and State Parks *Final General Management Plan / General Plan, Environmental Impact Statement / Environmental Impact Report*. Known impacts caused by development and human use were also considered. The thresholds of change for the intensity of an impact are defined as follows:

Impact Intensity	Impact Description
Negligible	The action could result in a change to a population or individuals of a species or designated critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence.
Minor	The action could result in a change to a population or individuals of a species or designated critical habitat. The change would be measurable but small and localized and of little consequence.
Moderate	The action would result in some change to a population or individuals of a species or designated critical habitat. The change would be measurable and of consequence.
Major	The action would result in a noticeable change to a population or individuals of a species or resource or designated critical habitat.

Duration:

Short-term – Recovers in less than 1 year for animals and within 1 growing season for plants.
Long-term – Takes more than 1 year to recover for animals and more than 1 growing season for plants.

Air Quality

The 1963 Clean Air Act, as amended (42 USC 7401 et seq.) requires federal land managers to protect park air quality while the 2001 NPS *Management Policies* address the need to analyze air quality during park planning.

The 1963 Clean Air Act, as amended, provides that the federal land manager has an affirmative responsibility to protect the park's air quality-related values (including visibility, plants, animals, soils, water quality, cultural and historic resources and objects, and visitor health) from adverse air pollution impacts. Section 118 of the 1963 Clean Air Act requires the parks to meet all federal, state, and local air pollution standards. Section 176(c) of the 1963 Clean Air Act requires all federal activities and projects to conform to state air quality implementation plans to attain and maintain national ambient air quality standards.

Class I areas are afforded the greatest degree of air quality protection. Very little deterioration of air quality is allowed in these areas, and the unit manager has an affirmative responsibility to protect visibility and all other class I area air quality related values from the adverse effects of air pollution.

Class II areas include all national park system areas not designated as class I, and the Clean Air Act allows only moderate air quality deterioration in these areas. In no case, however, may pollution concentrations violate any of the national ambient air quality standards. Redwood National and State Parks is designated a class I area.

The *Management Policies* further state that NPS will assume an aggressive role in promoting and pursuing measures to protect air quality related values from the adverse impacts of air pollution. In cases of doubt as to the impacts of existing or potential air pollution on park resources, NPS "will err on the side of protecting air quality and related values for future generations."

The Organic Act and the *Management Policies* apply equally to all areas of the national park system, regardless of Clean Air Act designations. Therefore, NPS will protect resources at both class I and class II designated units. Furthermore, the NPS Organic Act and *Management Policies* provide additional protection beyond that afforded by the Clean Air Act's national ambient air quality standards alone because NPS has documented that specific park air quality related values can be adversely affected at levels below the national standards or by pollutants for which no standard exists.

Impacts to environmental resources and values include visibility and biological resources (specifically ozone effects on plants) that may be affected by airborne pollutants (ozone, nitrogen oxides, total hydrocarbons, particulate matter). Particulate matter and nitrogen oxide emissions are evaluated for visibility impairment. Volatile organic compounds and nitrogen oxides are precursors to the formation of ozone precursors and are evaluated separately in lieu of ozone emissions.

To assess a level of impact on air quality related values from airborne pollutants, both the emissions of each pollutant related to the proposed activity and the background air quality must be evaluated and then considered according to the thresholds defined below.

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

Impact intensity	Impact Description
Negligible	Negligible impacts would not be detectable.
Minor	Minor impacts would be slightly detectable in close proximity to the source. Minor adverse impacts may include introduction of air pollutants into a local area with little or no preexisting direct emissions sources except for emissions transported from other areas. Minor adverse impacts are not expected to be linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects.
Moderate	Moderate impacts would be clearly detectable and could have an appreciable health effects, or would create objectionable odors affecting a substantial number of people.
Major	Major impacts would conflict with or obstruct implementation of the applicable air quality plan, violate any air quality standard, or contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations.

Duration:

Short Term –Impacts would persist only as long as construction takes place.
Long Term – Impacts would persist beyond construction.

Natural Soundscapes

NPS *Management Policies* 2001, states that NPS will strive to preserve the natural quiet and natural sounds associated with the physical and biological resources of parks.

NPS policy requires the restoration of degraded soundscapes to the natural condition whenever possible, and the protection of natural soundscapes from degradation due to noise (undesirable human-caused sound) (*Management Policies 2001,* sec. 4.9). NPS is specifically directed to "take action to prevent or minimize all noise that, through frequency, magnitude, or duration, adversely affects the natural soundscape or other park resources or values, or that exceeds levels that have been identified as being acceptable to, or appropriate for, visitor uses at the sites being monitored" (*Management Policies 2001,* sec. 4.9). Overriding all of this is the fundamental purpose of the national park system, established in law (e.g., 16 USC 1 et seq.), which is to conserve park resources and values (*Management Policies 2001*. sec. 1.4.3). NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values (*Management Policies 2001,* sec 1.4.3).

Noise can adversely affect park resources by modifying or intruding upon the natural soundscape, and can also indirectly impact resources by interfering with sounds important for animal communication, navigation, mating, nurturing, predation, and foraging functions. Noise can also adversely impact park visitor experiences by intruding upon or disrupting experiences of solitude, serenity, tranquility, contemplation, or a completely natural or historical environment.

The methodology used to assess impacts on natural soundscapes in this document is consistent with NPS *Management Policies 2001* and *Director's Order #47: Soundscape Preservation and Noise Management.*

Context, duration, and intensity together determine the level of impact for an activity. It is usually necessary to evaluate all three factors together to determine the level of impact on natural soundscapes. In some cases an analysis of one or more factors may indicate one impact level, while an analysis of another factor may indicate a different impact level, according to the criteria below. In such cases, best professional judgment based on a documented rationale must be used to determine which impact level best applies to the situation being evaluated.

- National literature was used to estimate the average decibel levels of construction activity.
- Areas of use by visitors were identified in relation to where the activity is proposed.

Impact intensity	Impact Description
Negligible	Effects to natural sound environment would be at or below the level of detection and such changes would be so slight that they would not be of any measurable or perceptible consequence to the visitor experience or to biological resources.
Minor	Effects to the natural sound environment would be detectable, although the effects would be localized, and would be small and of little consequence to the visitor experience or to biological resources. Mitigation measures, if needed to offset adverse effects, would simple and successful.

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

Impact intensity	Impact Description
Moderate	Effects to the natural sound environment would be readily detectable, localized, with consequences at the regional or population level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.
Major	Effects to the natural sound environment would be obvious and have substantial consequences to the visitor experience or to biological resources in the region. Extensive mitigation measures would be needed to offset any adverse effects and success would not be guaranteed.

Duration:

Short-term – Occurs only during the construction period.
Long-term – Occurs even after the construction period.

Archeological Resources

Impact intensity	Impact Description
Negligible	Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
Minor	Adverse impact – disturbance of a site(s) results in little, if any, loss of integrity. The determination of effect for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
	Beneficial impact – maintenance and preservation of a site(s). The determination of effect for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
Moderate	Adverse impact – disturbance of a site(s) results in loss of integrity. The determination of effect for Section 106 of the National Historic Preservation Act would be *adverse effect*. A memorandum of agreement (MOA) is executed among NPS and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.
	Beneficial impact – stabilization of a site(s). The determination of effect for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
Major	Adverse impact – disturbance of a site(s) results in loss of integrity. The determination of effect for Section 106 of the National Historic Preservation Act would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).
	Beneficial impact – active intervention to preserve a site(s). The determination of effect for Section 106 of the National Historic Preservation Act would be *no adverse effect*.

Duration:

Short-term – There are no short-term impacts to archeological resources.
Long-term – All impacts to archeological resources would be long-term and permanent.

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

Historic Structures

Impact intensity	Impact Description
Negligible	Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
Minor	Adverse impact – alteration of a feature(s) would not diminish the overall integrity of the resource. The determination of effect for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
	Beneficial impact – stabilization/preservation of features in accordance with the *Secretary of the Interior's Standards for the Treatment of historic properties*. The determination of effect for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
Moderate	Adverse impact – alteration of feature(s) would diminish the overall integrity of the resource. The determination of effect Section 106 of the National Historic Preservation Act would be *adverse effect*. An MOA is executed among NPS and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.
	Beneficial impact – rehabilitation of a structure in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The determination of effect Section 106 of the National Historic Preservation Act would be *no adverse effect*.
Major	Adverse impact – alteration of a feature(s) would diminish the overall integrity of the resource. The determination of effect for Section 106 of the National Historic Preservation Act would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).
	Beneficial impact – restoration of a structure in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The determination of effect for Section 106 of the National Historic Preservation Act would be *no adverse effect*.

Duration:

Short-term – There are no short-term impacts to historic resources.
Long-term – All impacts to historic resources would be long-term and permanent.

Ethnographic Resources

Impact intensity	Impact Description
Negligible	Impact(s) would be barely perceptible and would neither alter resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of practices and beliefs. The determination of effect on Traditional Cultural Properties (ethnographic resources eligible to be listed in the National Register of Historic Places) for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
Minor	Adverse impact – impact(s) would be slight but noticeable but would neither appreciably alter resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of practices and beliefs. The determination of effect on Traditional Cultural Properties (ethnographic resources eligible to be listed in the National Register of Historic Places) for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
	Beneficial impact – would allow access to and/or accommodate a group's traditional practices or beliefs. The determination of effect on Traditional Cultural Properties for Section 106 of the National Historic Preservation Act would be *no adverse effect*.

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

Impact intensity	Impact Description
Moderate	Adverse impact – impact(s) would be apparent and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group's practices and beliefs, even though the group's practices and beliefs would survive. The determination of effect on Traditional Cultural Properties (ethnographic resources eligible to be listed in the National Register of Historic Places) for Section 106 of the National Historic Preservation Act would be *adverse effect*. A MOA is executed among NPS and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Beneficial impact – would facilitate traditional access and/or accommodate a group's practices or beliefs. The determination of effect on Traditional Cultural Properties for Section 106 of the National Historic Preservation Act would be *no adverse effect*.
Major	Adverse impact — impact(s) would alter resource conditions. Something would block or greatly affect traditional access, site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs, to the extent that the survival of a group's practices and/or beliefs would be jeopardized. The determination of effect on Traditional Cultural Properties (ethnographic resources eligible to be listed in the National Register of Historic Places) for Section 106 of the National Historic Preservation Act would be *adverse effect*. Beneficial impact – would encourage traditional access and/or accommodate a group's practices or beliefs. The determination of effect on Traditional Cultural Properties for Section 106 of the National Historic Preservation Act would be *no adverse effect*.

Duration:

Short-term – Effects lasting for the duration of the project action.
Long-term – Effects lasting longer than the duration of the project action.

Transportation

The purpose of park roads is to enhance visitor experience while providing safe and efficient accommodation of park visitors. However, urban parkways and city streets have a dual function, and not only serve park purposes, but also serve as extensions of the local transportation network and carry large volumes of non-park related traffic. Therefore, all alternatives were analyzed to determine their effect on traffic.

Impact Intensity	Impact Description
Negligible	Traffic would not be affected, or the effects would be at the lower levels of detection and would not have an appreciable effect on traffic flow. There would be no changes in the level of service.
Minor	The effect would be detectable, but would be of a magnitude that would not have an appreciable effect on traffic flow. There would be no noticeable changes in the traffic congestion or level of service. If mitigation was needed to offset adverse effects, it would be simple and likely successful.
Moderate	The effects would be readily apparent, and would result in a substantial change in traffic flow patterns, congestion, and/or level of service, in a manner noticeable to the public. Mitigation would be necessary to offset adverse effects and would likely be successful.
Major	The effects would be readily apparent and would result in a substantial change in traffic flow in a manner noticeable to the public and be markedly different from the present traffic flow patterns and levels of service. Mitigation measures to offset adverse effects would be needed, would be extensive and their success could not be guaranteed.

Duration:

Short-term – Effects lasting for the duration of the project action.
Long-term – Effects lasting longer than the duration of the project action.

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

Scenic Resources

Impact intensity	Impact Description
Negligible	Effects to the visual quality of the landscape would be at or below the level of detection; changes would be so slight that they would not be of any measurable or perceptible consequence to the visitor experience.
Minor	Effects to the visual quality of the landscape would be detectable, localized, and would be small and of little consequence to the visitor experience. Mitigation measures, if needed to offset adverse effects, would be simple and successful.
Moderate	Effects to the visual quality of the landscape would be readily detectable, localized, with consequences at the regional level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.
Major	Effects to the visual quality of the landscape would be obvious, with substantial consequences to the visitor experience in the region. Extensive mitigation measures would be needed to offset any adverse effects and their success would not be guaranteed.

Duration:

Short-term – Occurs only during the construction period.
Long-term – Effects continue after the construction period.

Visitor Experience

NPS *Management Policies 2001* state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks.

Part of the purpose of the parks is to offer opportunities for recreation, education, inspiration, and enjoyment. Consequently, one of the park's management goals is to ensure that visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of park facilities, services, and appropriate recreational opportunities.

The potential for change in visitor experience proposed by the alternatives was evaluated by identifying projected changes in visitor use and experience, and determining whether or how these projected changes would affect the desired visitor experience, to what degree, and for what duration.

Impact intensity	Impact Description
Negligible	Changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative.
Minor	Changes in visitor use and/or experience would be detectable, although the changes would be slight. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.
Moderate	Changes in visitor use and/or experience would be readily apparent. The visitor would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes.
Major	Changes in visitor use and/or experience would be readily apparent and severely adverse or exceptionally beneficial. The visitor would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.

Duration:

Short-term – Occurs only during the treatment action.
Long-term – Occurs after the treatment action.

Table E-1 (Continued)
Impact Threshold Definitions (all definitions assume mitigation measures would be implemented)

Park Operations and Facilities

Park operations, for the purpose of this analysis, refers to the quality and effectiveness of the infrastructure, and the ability to maintain the infrastructure, used in the operation of the parks in order to adequately protect and preserve vital resources and provide for an effective visitor experience. This includes an analysis of the condition and usefulness of the facilities used to support the operations of the park. Facilities included in this project include the Requa and Aubell facilities.

The impact analysis is based on the current description of park operations presented in the Affected Environment section of this document.

Impact intensity	Impact Description
Negligible	Park operations would not be affected, or the effects would be at low levels of detection and would not have an appreciable effect on park operations.
Minor	The effect would be detectable and would be of a magnitude that would not have an appreciable effect on park operations. If mitigation was needed to offset adverse effects, it would be simple and likely successful.
Moderate	The effects would be readily apparent and result in a substantial change in park operations in a manner noticeable to staff and the public. Mitigation measures would be necessary to offset adverse effects and would likely be successful.
Major	The effects would be readily apparent, result in a substantial change in park operation in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, extensive, and success could not be guaranteed.

Duration:

Short-term – Effects lasting for the duration of the treatment action.
Long-term – Effects lasting longer than the duration of the treatment action.

Appendix F: Past, Present, and Reasonably Foreseeable Actions

Agency Name: Bureau of Indian Affairs and Elk Valley Rancheria

Project Name: **Elk Valley Rancheria Martin Ranch Project**

Description: The Bureau of Indian Affairs and Elk Valley Rancheria propose to develop a new destination resort on the approximately 203-acre Martin Ranch property located in Crescent City near the intersection of Highway 101 and Humboldt Road, approximately 2 miles south of the Aubell area. The Martin Ranch property (currently owned in fee title) would be placed into federal trust status for the Elk Valley Rancheria Tribe. The proposed project would include developing a 40,000-square foot casino, 20,000-square foot conference center, and 156-roomhotel. The Martin Ranch Project would include the development of approximately 1,120 parking spaces to support the facilities.

Agency Name: Del Norte County

Project Name: **Solid Waste Transfer Station**

Description: Del Norte County proposes to develop a new 12,500 square foot solid waste transfer station at Elk Valley Road and State Street south of Howland Hill Road, approximately 1.3 miles from the Aubell area. The transfer station would be designed to handle 200 tons of solid waste and recyclable materials per day, with a peak capacity of 300 tons per day. Current solid waste generation at the county landfill is approximately 60 tons per day. The solid waste transfer station would generate approximately 220 vehicle trips on the average workday. Existing truck traffic (approximately 3 per day) that transport wood chips from Medford to the Hambro Forest Products factory near Crescent City would haul the solid waste to the landfill in Medford.

Agency Name: Del Norte County

Project Name: **Elk Valley Road Improvements**

Description: Approximately a half-mile south of the intersection of Elk Valley Road and Aubell Lane, Del Norte County proposes to widen and reconstruct Elk Valley Road between Howland Hill Road and Highway 101. The county would add a middle turn lane to this road segment, as well as pedestrian/bike lanes on both sides of Elk Valley Road.

Agency Name: NPS and CDPR

Project Name: **Redwood National and State Parks Trail Plan**

Description: NPS and CDPR are developing a comprehensive trail plan for Redwood National and State Parks consistent with the guidance in the parks' *General Management Plan/General Plan*. The trail plan would guide the development of an expanded trail system for the parks. The trail plan would be consistent with the desired resource conditions and visitor experiences of the appropriate management zones identified in the parks' *General Management Plan/General Plan*. The *General Management Plan / General Plan* calls for the establishment of a trailhead on the Aubell property for trail access into the west side of Jedediah Smith Redwoods State Park. The proposed trailhead at the Aubell area would be included in the comprehensive trail plan, and would include a 25-car parking lot.

Agency Name: U.S. Army Corps of Engineers

Project Name: Requa Radar Station Underground Storage Tank Environmental Restoration

Description: The U.S. Army Corps of Engineers is implementing environmental restoration at the Requa area under the Environmental Restoration at Formerly Used Defense Sites program. Under this program, the U.S. Army Corps of Engineers identified and removed underground storage tanks associated with use of Requa as a radar station. Following tank removal, supplemental vertical profiling was conducting to determine whether soil or groundwater contaminants remain on-site. Vertical profiling located contamination at three former tank locations and further sampling will be conducted to determine the extent of contamination, followed by pump and treat activities to remediate contamination.

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public land and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Redwood National and State Parks
1111 Second Street
Crescent City, CA 95531

www.nps.gov/redw

EXPERIENCE YOUR AMERICA
NPS 167 / D-184

December 2004

Printed on recycled paper