D R A F T

Initial Study
Mitigated Negative Declaration

Humboldt Redwoods State Park
Williams Grove
Water System Repair Project

September 2009

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

MITIGATED NEGATIVE DECLARATION

PROJECT: **WILLIAMS GROVE WATER SYSTEM REPAIR PROJECT**

LEAD AGENCY: California Department of Parks and Recreation

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

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

- North Coast Redwoods District Headquarters
  3431 Fort Avenue
  Eureka, CA 95503

- Humboldt Redwoods State Park Sector Office / Visitor Center
  17119 Avenue of the Giants
  Weott, CA, 95571

- Humboldt County Library (Eureka Main Library)
  1313 3rd Street
  Eureka, CA 95501

- Humboldt County Library (Garberville Branch)
  715 Cedar Street
  Garberville, CA 95542

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

PROJECT DESCRIPTION:

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

Heidi West – Environmental Coordinator
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall - Suite 410
Sacramento, CA 95814

Email Address: CEQANSC@parks.ca.gov

(Include 'Williams Grove Water' on the subject line)

Fax: (916) 445-8883

Submission must be in writing and postmarked or received by fax or e-mail no later than Friday, October 2, 2009. The original of any faxed document must be received by regular mail within ten (10) working days following the deadline fro comments, along with proof of successful fax transmission.

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

*Original Signed By:*_____ _____
Heidi West Date
Environmental Coordinator

*Original Signed By:*_____ _____
Kathleen Amann Date
Assistant Deputy Director,
Acquisition and Development

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CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION AND REGULATORY GUIDANCE

The Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Williams Grove Water System Repair Project at Humboldt Redwoods State Park (SP), Humboldt County, California. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 *et seq*., and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 *et seq*.

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

1.2 LEAD AGENCY

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

Gary Leach
Project Manager
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall, Suite 410
Sacramento, CA 95814
(916) 445-8691

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

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1.3 PURPOSE AND DOCUMENT ORGANIZATION

The purpose of this document is to evaluate the potential environmental effects of the proposed Williams Grove Water System Repair Project at Humboldt Redwoods State Park. Project Requirements and mitigation measures have also been incorporated into the project to eliminate any potentially significant impacts or reduce them to a less-than-significant level.

This document is organized as follows:

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

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

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

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

- Chapter 5 - Summary of Project Requirements and Mitigation Measures.
  This chapter summarizes the conditions and mitigation measures incorporated into the project as a result of the Initial Study.

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

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

1.4 SUMMARY OF FINDINGS

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

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

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

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CHAPTER 2
PROJECT DESCRIPTION

2.1 INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Williams Grove Water System Repair Project at Humboldt Redwoods State Park (SP), located in Humboldt County, California. The proposed project would repair the water distribution system that serves the Williams Grove Day Use and Group Camp areas to eliminate leaks, conform to seismic standards, and to be consistent with current regulatory requirements.

2.2 PROJECT LOCATION

Humboldt Redwoods SP is situated approximately 240 miles north of San Francisco and 40 miles south of Eureka in Humboldt County and extends along the U.S. Route 101 corridor from a point two miles south of the community of Phillipsville north to the community of Stafford (Appendix A: Figure 1). The park unit is located at 17119 Avenue of the Giants (State Route 254) and features approximately 51,590 acres (DPR 2007) of plant habitats consisting of redwood forest and other woody and herbaceous vegetation of the Coast Range. The two Williams Grove Water System Repair Project sites are in the southern portion of the park unit approximately one mile north of the town of Myers Flat and about five miles south of the town of Weott and are located between the South Fork of the Eel River and U.S. Route 101 (Appendix A: Figures 1 and 2). Site 1 is a water supply pipe alignment under Avenue of the Giants and a slope east of Avenue of the Giants, while Site 2 is the Williams Grove Day Use and Group Camp areas situated on an alluvial terrace west of Avenue of the Giants.

2.3 BACKGROUND AND NEED FOR THE PROJECT

DPR owns and operates the water distribution system that serves the Williams Grove Day Use and Group Camp areas within Humboldt Redwoods SP. Components of the existing water system at Site 1 include the following equipment: two 20,000 gallon redwood water storage tanks adjacent to U.S. Route 101, an inline water filtration system located adjacent to the water tanks, and an approximately 800 foot (ft) long galvanized steel supply pipe located on the ground surface between the tanks and Avenue of the Giants and installed under Avenue of the Giants. Components of the existing system at Site 2 to be repaired include approximately 3,500 linear feet (ft) of subsurface galvanized steel water distribution pipes, valves, and faucets located throughout the Day Use and Group Camp areas. DPR collects water from Coon Creek or a nearby unnamed spring, depending upon the time of year, and stores the water in the redwood tanks. Water stored in the tanks flows downhill through the supply pipe by gravity (Site 1) and into the distribution pipe to faucets in the Williams Grove Day Use and Group Camp areas (Site 2). The pipes/valves, which are over thirty years old, and the redwood tanks, which are over seventy years old, are leaking and require ongoing repairs. Additionally, the water tanks, which are situated on the side of a hill, do not have seismic restraints and the water filtration system does not meet current health standards.

A reliable water system is imperative to meet the needs of visitors at the public facilities located at Site 2. Without this project, DPR would continue to operate the existing water system, using scarce maintenance funds to repair and replace components as the need arises and the lack

of seismic water tank restraints and a modern filtration system would continue to pose a significant safety concern. Should DPR shut down the existing water system and the facilities that it supports, DPR would reduce recreational opportunities for park visitors, counter to the DPR mission.

2.4 PROJECT OBJECTIVES

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

The intent of the proposed Williams Grove Water System Repair Project is to:

- Provide new water storage tanks that conform to seismic design requirements;
- Provide a new inline filtration system, water pipes, and valves to meet current regulatory health requirements;
- Eliminate leaks and decrease park maintenance costs by reducing frequent repairs of old equipment;
- Provide high-quality recreational day use and group camp facilities for the public.

2.5 PROJECT DESCRIPTION

DPR proposes to repair the water distribution system that serves the Williams Grove Day Use and Group Camp areas in Humboldt Redwoods SP. The project scope includes removal of the redwood water storage tanks and existing filtration system, abandonment of the existing pipes and valves, and replacement of these system components. Following is a breakdown of project elements.

Site 1: Area Under and East of Avenue of the Giants

- Dismantle the two 20,000 gallon redwood water storage tanks on concrete pads, remove the existing gravity fed inline filtration system and expand the size of each existing approximately 315 ft^2 concrete pad by pouring cement around both to make a single concrete pad approximately 1320 ft^2 in size.
- Install four, new high-density polyethylene (HDPE) water storage tanks on the expanded concrete pad with a total combined capacity of 40,000 gallons. Anchor tanks to the pad with seismic restraint clips embedded in the pad and wire tension cables to conform to seismic requirements.
- Install new gravity fed inline water filtration system and pipe connections between the new tanks and water supply pipe.
- Abandon the existing 800 ft long steel water supply pipe located on the ground running from the tank area to Avenue of the Giants, where it crosses under the road and connects to the main distribution pipeline. Install approximately 800 ft of new HDPE pipe to replace the existing pipe.

Site 2: Williams Grove Day Use and Group Camp Areas West of Avenue of the Giants

- Abandon existing gate and drain valves and 3,500 ft of subsurface steel water distribution pipe (main and lateral lines) throughout the Day Use and Group Camp areas; install new valves and approximately 3,500 ft of new HDPE distribution pipe; and connect the end of the main distribution pipe to the water supply pipe.

- Remove and relocate water faucets at select camp sites through-out the Group Camp area.

Installation of new valves and pipe would be conducted using methods to minimize impacts to tree roots. DPR would replace valves and water supply and distribution pipes approximately adjacent to the existing abandoned pipes with the exceptions of (a) reconfiguring a portion of the main distribution pipe that is currently aligned through the redwood forest to a new alignment under the asphalt concrete (AC) Site 2 access road, and (b) relocating short spurs (lateral pipes) and associated water faucets connected to the main distribution pipe from the middle of picnic and camp sites to locations close to the Site 2 access road and main distribution pipe. DPR would use a combination of three methods to install supply and distribution pipes, including trenching with mechanical equipment, crews using hand tools, and the use of a directional drill (trenchless method). Trenches would measure approximately three ft deep by two ft wide. DPR would employ directional drilling to replace the section of supply pipe under Avenue of the Giants to the point of connection with the main distribution pipe near the intersection of Avenue of the Giants and the Site 2 access road. Directional drills would require excavation of approximately five pits, each measuring about six ft long by five ft wide by five ft deep, to position the drill for boring underground pipe alignments. All trenches and pits would be refilled with native soil once construction is completed.

Construction personnel would transport equipment and vehicles to and from the water tanks in Site 1 via an existing non-recreational maintenance trail used by DPR park personnel, U.S. Route 101, and/or by helicopter. DPR would trim vegetation adjacent to the maintenance trail and could widen the trail up to five feet wide to accommodate small mechanical equipment such as rubber-tired/tracked vehicles. Equipment delivery to Site 1 could also entail temporary lane closure of U.S. Route 101 to unload new tank components from trucks or a helicopter. DPR could trim some vegetation and remove small trees and saplings between U.S. Route 101 and the water tanks to move construction materials among the remaining trees to the tank site.

2.6 PROJECT IMPLEMENTATION

The Williams Grove Water System Repair Project would take place during the fall and winter seasons generally during daylight weekday hours. However, weekend work could be implemented to accelerate repair or installation of equipment.

DPR would use construction crews with hand tools and mechanical equipment such as an excavator and dump truck, as well as rubber-tired/tracked vehicles for hauling and lifting materials up the maintenance trail to the water tanks. Vehicles used to transport crews, materials, and equipment would also be present intermittently. Vehicle, equipment, and materials staging/storage sites would be located on paved surfaces within the Day Use and Group Camp areas.

Best Management Practices (BMPs) would be incorporated into the project design and Construction Storm Water Pollution Prevention Plan (See Section 2.9 Discretionary Approvals and Chapter 3, Section VIII. Hydrology and Water Quality) to ensure that natural and cultural resources in and around the project site are adequately protected during and after construction activities. The BMPs discussed in this document and used in the implementation of the project

are obtained from the California Stormwater Quality Association (CSQA) *Stormwater Best Management Practices Construction Handbook* (CSQA 2003). Temporary BMPs would be used to keep sediment on-site throughout the duration of the project and would be checked daily, maintained, and modified as needed during construction. In addition, permanent BMPs would be used after construction work to stabilize the site and minimize erosion.

DPR has consistently referenced CSQA BMPs and has identified them as an acceptable standard for use in all park units of the State Park System.

2.7 PROJECT REQUIREMENTS

Under CEQA, the Department of Parks and Recreations has the distinction of being considered a lead agency, a public agency that has a primary responsibility for carrying out or approving a project and for implementing CEQA; a responsible agency, a public agency other than the lead agency that has responsibility for carrying out or approving a project and for complying with CEQA; and a trustee agency, a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people for the State of California. With this distinction comes the responsibility to ensure that actions that protect both cultural and natural resources are always incorporated into all projects. Therefore, DPR has created a list of Project Requirements that are included in project design to reduce impacts to resources.

DPR has two types of Project Requirements, standard and specific. Standard project requirements are assigned to all projects state-wide, while specific project requirements are assigned based on the specific actions required to complete the project. For example, Fire Safety practices are included in all DPR projects; however, inadvertent discovery of archaeological artifacts would only be assigned to projects that include ground-disturbing work. While mitigation measures can be found in the specific section as required (Chapter 5 contains a list of all mitigation measures and project requirements), the following Project Requirements have been included in this project:

ISSUE	PROJECT REQUIREMENT
Air Quality	
STANDARD PROJECT REQUIREMENT AIR-1: FUGITIVE DUST AND OZONE	• All construction areas (dirt/gravel roads and surrounding dirt/gravel area) will be watered at least twice daily during dry, dusty conditions. • All trucks hauling soil, sand, or other loose materials on public roads will be covered or required to maintain at least two feet of freeboard. • All construction-related equipment and engines will be maintained in proper tune (according to manufacturer's specifications), and in compliance with all State and federal requirements. • Excavation and grading activities will be suspended if sustained winds exceed 25 miles mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads. • Earth or other material that has been transported onto paved roadways by trucks, construction equipment, erosion, or other project-related activity will be promptly removed.

Biological Resources	
STANDARD PROJECT REQUIREMENT BIO-1: MARBLED MURRELET, NORTHERN SPOTTED OWL, NESTING MIGRATORY BIRDS AND RAPTORS, AND SENSITIVE BAT SPECIES	• All tree removal and construction activities which could result in disturbance to bat species during the bat breeding period or to nesting marbled murrelet, northern spotted owl, raptors, and migratory birds will occur during the non-breeding/maternity season (September 16 – January 31). • No trees or snags ≥ 15 inches diameter at breast height (DBH) will be removed. Any trees or snags < 15 inches DBH proposed for removal will be inspected by a DPR-approved biologist to ensure that removal will not reduce the quality of the habitat or increase the potential for visual disturbance of marbled murrelet nest sites. No trees or snags, which provide suitable bat roosting habitat, as determined by a DPR-approved biologist, will be removed.
SPECIFIC PROJECT REQUIREMENT BIO-2: SENSITIVE NATURAL COMMUNITY	• Where possible, all trenching will occur outside of the root health zone (five times DBH) of any native tree ≥ 12 inches DBH. If trenching must occur within the root health zone, then no roots ≥ 2 inches in diameter will be severed by project activities, unless authorized by a DPR-approved biologist. • A DPR-approved biologist will monitor all trenching operations and any work that requires vegetation removal.
STANDARD PROJECT REQUIREMENT BIO-3: SUDDEN OAK DEATH	• All project activities that could spread *Phytophthora ramorum* to new locations will be subject to Best Management Practices developed by the California Oak Mortality Task Force and available online at http://www.suddenoakdeath.org/html/best_management_practices.html
Cultural Resources	
STANDARD PROJECT REQUIREMENT CULT-1: STAGING AND STORAGE AREAS	• A DPR cultural resource specialist will review and authorize all vehicle and equipment staging and material storage sites other than staging/storage sites located on paved surfaces within Site 2 (Williams Grove Day Use and Group Camp areas).
STANDARD PROJECT REQUIREMENT CULT-2: DISCOVERY OF PREVIOUSLY UNDOCUMENTED RESOURCES	• In the event that previously unknown cultural resources (including but not limited to dark soil containing shellfish, bone, flaked stone, groundstone, or deposits of historic trash) are encountered during construction related activities by anyone, the State's Representative will put work on hold at that specific location and personnel will be redirected to other tasks. A DPR-approved cultural resources specialist will record and evaluate the finds and work with the State's Representative to implement avoidance, preservation, or recovery measures as appropriate prior to any work resuming at that specific location.
STANDARD PROJECT	• The DPR-approved cultural resources specialist assigned to the project will implement archaeological monitoring during ground

REQUIREMENT CULT-3: ARCHAEOLOGICAL MONITORING	disturbing construction activities at the project sites at his/her discretion. The DPR-approved cultural resources specialist will be notified by the State's Representative in a timely manner (a minimum of five days in advance) when DPR and/or its Contractor will conduct ground disturbing work in this area.
SPECIFIC PROJECT REQUIREMENT CULT-4: GROUND DISTURBING ACTIVITIES IN SITE 2 (WILLIAMS GROVE DAY USE AND GROUP CAMP AREAS WEST OF AVENUE OF THE GIANTS)	• Ground disturbing activities, including but not limited to trenching, in Site 2 (Williams Grove Day Use and Group Camp areas) will extend no deeper than six feet below the soil surface.
STANDARD PROJECT REQUIREMENT CULT-5: HUMAN REMAINS	• In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil. The DPR sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (or Tribal Representative). If a Native American monitor is on-site at the time of the discovery, the monitor will be responsible for notifying the appropriate Native American authorities. • The local County Coroner will make the determination of whether the human bone is of Native American origin. If the coroner determines the remains represent Native American interment, the NAHC in Sacramento and/or tribe will be consulted to identify the most likely descendants and appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination • If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the Native American Heritage Commission/Tribal Cultural representatives will occur as necessary to define additional site mitigation or future restrictions.
GEOLOGY AND SOILS	

SPECIFIC PROJECT REQUIREMENT GEO-1: POST EARTHQUAKE INSPECTION	• DPR will inspect the new water system components, including tanks, filtration system, pipes, and valves after large-magnitude earthquakes in the vicinity and maintain the system to prevent excessive leakage.
Hazardous and Hazardous Materials	
STANDARD PROJECT REQUIREMENT HAZMAT-1: SPILL PREVENTION AND RESPONSE	• Prior to the start of construction, DPR and/or its Contractor will clean all equipment before entering the project site. During project implementation, equipment will be cleaned and repaired (other than emergency repairs) outside the project site boundaries. All contaminated water, sludge, spill residue, or other hazardous compounds will be contained and disposed of outside the boundaries of the site at a lawfully permitted or authorized destination. • Prior to the start of construction, DPR and/or its Contractor will inspect all equipment for leaks and inspect equipment daily thereafter until it is removed from the project site. • Prior to the start of construction, DPR and/or its will prepare a Spill Prevention and Response Plan (SPRP) to provide protection to on-site workers, the public, and the environment from accidental leaks or spills of vehicle fluids or other potential contaminants. This plan will include but not be limited to the following: ▪ A map that delineates construction staging areas, and where refueling, lubrication, and maintenance of equipment will occur. ▪ A list of items required in an on-site spill kit; spill kit will be maintained on-site throughout the life of the project. ▪ Procedures for the proper storage, use, and disposal of any solvents or other chemicals used during the project. ▪ Identification of lawfully permitted or authorized disposal destinations outside of the project site. • In the event of any spill or release of any chemical in any physical form on or immediately adjacent to the project site or within Humboldt Redwoods SP during construction, DPR and/or its Contractor will immediately notify the State's Representative. Appropriate agencies will be notified immediately in the event of a significant spill.
STANDARD PROJECT REQUIREMENT HAZMAT-2: WILDFIRE AVOIDANCE AND RESPONSE	• The Contractor will develop and submit a Fire Safety Plan to DPR for approval prior to the start of construction. The plan will include the emergency calling procedures and response procedures for CalFire, the Fruitland Volunteer Fire Company, Inc., and the Weott Volunteer Fire Department that the Contractor will follow. • Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers will be required for all heavy equipment. • DPR and/or its Contractor will have approved (per Public Resources Code Section 4431) fire suppression equipment on site and in working

	order at all times welding, torch cutting, grinding or any other spark or flame generating activity is conducted. This equipment will be located within Code approved distance to the spark/flame generating work activity and readily accessible by workers conducting or observing the activity • Construction crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, heavy equipment will be parked over asphalt or concrete to reduce the chance of fire.
Hydrology and Water Quality	
STANDARD PROJECT REQUIREMENT HYDRO-1: EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION	• Prior to the start of construction, DPR and/or its Contractor will prepare a Water Pollution Control Plan (WPCP) that identifies Best Management Practices (BMPs) to be used in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during excavation, grading, stockpile management, and any other ground disturbing activities. • DPr and/or its Contractor will prepare a Monitoring and Spill Contingency Plan (MSCP) as part of the WPCP to prevent the release of drilling fluids to nearby water bodies during directional drilling for installation of the new water distribution pipe. • DPR and/or itsContractor will avoid the creation of bare soil strips within the equipment/materials movement corridors between the water storage tanks and US Route 101.
STANDARD PROJECT REQUIREMENT HYDRO-2: WATER QUALITY PROTECTION	• DPR and/or its Contractor will install a DPR-approved, temporary crossing structure over the natural, intermittent drainage within Site 1 (on slope east of Avenue of the Giants) to reduce sedimentation by eliminating direct contact of vehicles and equipment with any water located in the drainage; DPR and/or its Contractor will remove the crossing once project related activities are completed.
Noise	
STANDARD PROJECT REQUIREMENT NOISE-1: NOISE EXPOSURE	• Project-related activities will generally be limited to the daylight hours, Monday through Friday. However, weekend work will be implemented to accelerate construction or address emergency or unforeseen circumstances. If weekend work is necessary, no work will occur on those days before 8:00 a.m. or after 6:00 p.m. • Internal combustion engines used for any purpose in the project areas will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for project-related activities will utilize DPR-approved noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever feasible and necessary. • Stationary noise sources and staging areas will be located as far from visitors as possible. If they must be located near visitors, stationary noise sources will be muffled to the extent feasible, and/or where practicable, enclosed within temporary sheds.

2.8 VISITATION TO HUMBOLDT REDWOODS STATE PARK

Humboldt Redwoods SP receives an average of 492,238 visitors per year. The proposed project is designed to provide an adequate water supply system for current and projected visitation levels at Site 2 (Williams Grove Day Use and Group Camp areas) and is not expected to increase visitation.

Fiscal Year	Paid Day Use	Free Day Use	Overnight Camping	Total Attendance
1997-1998	2,775	452,670	61,172	516,617
1998-1999	3,535	508,285	58,361	570,181
1999-2000	4,334	490,744	68,757	563,835
2000-2001	6,127	475,562	67,201	548,890
2001-2002	2,969	461,933	72,434	537,336
2002-2003	4,201	443,242	60,064	507,507
2003-2004	2,249	425,921	54,076	482,246
2004-2005	1,402	390,598	49,825	441,824
2005-2006	1,002	393,183	47,182	441,367
2006-2007	1,714	337,131	44,635	383,480
2007-2008	1,823	366,671	52,842	421,336
Total Attendance	32,132	4,745,939	636,546	5,414,618
Average Attendance	2921	431,449	57,867	492,238

(DPR 2007, 2009)

2.9 CONSISTENCY WITH LOCAL PLANS AND POLICIES

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

2.10 DISCRETIONARY APPROVALS

DPR retains approval authority for the proposed Williams Grove Water System Repair Project at Humboldt Redwoods SP. The project also requires approval from the following government agencies:

- California Department of Health Services
- California Department of Transportation (CalTrans)

Additional internal document reviews include compliance with Public Resources Code § 5024. DPR will acquire all necessary reviews and permits prior to implementing any project components requiring regulatory review.

2.11 RELATED PROJECTS

DPR often has other maintenance programs, restoration, and interpretive projects planned for a park unit. In May 2009, DPR completed a Notice of Exemption (NOE) for an Accessibility Modifications Project to improve access to American with Disabilities Act (ADA) standards for public facilities at the Williams Grove Day Use and Group Camp areas.

Under CEQA, a project is defined as the whole of an action which has the potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment (CCR § 15378(a), PRC § 21065). An agency generally is not permitted to 'segment' or 'piecemeal' a project into smaller parts if the effect is to avoid full disclosure of the environmental impacts of a project (or action); however, use of "independent utility" allows a lead agency to evaluate a small portion of a large project as a 'stand alone' project if the small project can be viewed as autonomous from the large project while still disclosing all environmental impacts. Using independent utility, DPR completed the NOE for the Accessibility Modifications Project prior to undertaking work described in Section 2.5 above for the Williams Grove Water System Repair Project. The Accessibility Modifications Project does not rely on components of the Williams Grove Water System Repair Project.

CHAPTER 3
ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION

1. Project Title: Williams Grove Water System Repair Project

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

3. Contact Person & Phone Number: Gary Leach (916) 445-8691

4. Project Location: Humboldt Redwoods State Park, Humboldt County

5. Project Sponsor Name & Address: California Department of Parks and Recreation
   Acquisition and Planning Division
   Northern Service Center
   One Capitol Mall - Suite 410
   Sacramento, California 95814

6. General Plan Designation: State Park (October 2001)

7. Zoning: Public Lands (Humboldt County 2000)

8. Description of Project: DPR proposes to repair the water distribution system that serves the Williams Grove Day Use and Group Camp areas in Humboldt Redwoods SP. The project scope includes removal of the redwood water storage tanks and existing filtration system, abandonment of the existing pipes and valves, and replacement of these system components. Following is a breakdown of project elements.

   Site 1: Area Under and East of Avenue of the Giants

   - Dismantle the two 20,000 gallon redwood water storage tanks on concrete pads, remove the existing gravity fed inline filtration system and expand the size of each existing approximately 315 ft^2 concrete pad by pouring cement around both to make a single concrete pad approximately 1320 ft^2 in size.
   - Install four, new high-density polyethylene (HDPE) water storage tanks on the expanded concrete pad with a total combined capacity of 40,000 gallons. Anchor tanks to the pad with seismic restraint clips embedded in the pad and wire tension cables to conform to seismic requirements.
   - Install new gravity fed inline water filtration system and pipe connections between the new tanks and water supply pipe.
   - Abandon the existing 800 ft long steel water supply pipe located on the ground running from the tank area to Avenue of the Giants, where it crosses under the road and connects to the main distribution pipeline. Install approximately 800 ft of new HDPE pipe to replace the existing pipe.

   Site 2: Williams Grove Day Use and Group Camp Areas West of Avenue of the Giants

   - Abandon existing gate and drain valves and 3,500 ft of subsurface steel water distribution pipe (main and lateral lines) throughout the Day Use and Group Camp areas; install new valves and approximately 3,500 ft of new HDPE distribution pipe; and connect the end of the main distribution pipe to the water supply pipe.
   - Remove and relocate water faucets at select camp sites through-out the Group Camp area.

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

10. Approval Required from Other Public Agencies: Refer to Chapter 2 of this document (Section 2.10: Discretionary Approvals)

1. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

DETERMINATION

On the basis of this initial evaluation:

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

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

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

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

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

Original Signed By: _____ _____

Heidi West — Date

Environmental Coordinator

EVALUATION OF ENVIRONMENTAL IMPACTS

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

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

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

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

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

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

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

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

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

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

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

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ENVIRONMENTAL ISSUES

I. AESTHETICS

ENVIRONMENTAL SETTING

Humboldt Redwoods State Park (SP) is comprised of approximately 51,590 acres in the coastal mountains of southern Humboldt County. The park unit is known for containing the largest contiguous stand of old growth coast redwoods, miles of rivers and streams, prairie vistas, historic ranchlands, and an extensive backcountry (DPR 2001, 2007).

The Humboldt Redwoods SP Visitor Center and most of the six drive-in campground and numerous day use facilities are easily accessible by two highways, including U.S. Route 101 and Avenue of the Giants (State Route 254) (DPR 2008). Both U.S. Route 101 and the Avenue of the Giants are eligible for official designation as California State Scenic Highways where they pass by the two sites of the proposed project (Humboldt County 2008). U.S. Route 101 is a rural highway that traverses the park unit near its eastern boundary, paralleling the wild and scenic South Fork of the Eel River (USFWS 2007) in the southern portion of the park unit. The Avenue of the Giants runs between U.S. Route 101 and the river, providing travelers a leisurely, meandering drive through towering redwoods (DPR 2001).

The two sites of the proposed Williams Grove Water System Repair Project are situated approximately one mile north of the town of Myers Flat (Mapquest 2008; Appendix A: Figures 1 and 2)) in a densely wooded location between the South Fork of the Eel River and U.S. Route 101. Water descends by gravity from water storage tanks located adjacent to, and below the alignment for U.S. Route 101 through a water supply pipe, where it crosses under Avenue of the Giants (Site 1). Site 1 is does not contain facilities for visitor use. Additionally the water tanks are not visible from U.S. Route 101 because they are situated below the road alignment and are not visible from Avenue of the Giants because trees near the road shield the view of the tanks. The water supply pipe connects to the main undergound water distribution pipe on the west side of Avenue of the Giants and circumnavigates the Williams Grove Day Use and Group Camp areas to visitor facilities including above ground water faucets (Site 2). Redwood trees towering almost three hundred feet overhead envelop visitors once they enter Site 2.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) As described in the Environmental Setting above, the two sites of the proposed project are situated in a densely wooded area of Humboldt Redwoods SP. No designated park scenic vistas, which could be temporarily impaired by construction activities and vehicles / equipment, are located in the area. The South Fork of the Eel River, designated as a Wild and Scenic River (USFWS 2007), is located adjacent to Site 2, but is obscured by dense vegetation. Construction activities such as trenching / directional drilling and installation of new water tanks would require excavation of soil and removal of a limited amount of vegetation, primarily consisting of small trees and saplings and low-growing herbs and shrubs. These activities would change the close-range scenery at the project sites. Excavated materials would be replaced back into trenches or removed from the site and both of these impacts would be considered temporary and therefore, less than significant.

b) The two sites of the proposed project are situated near U.S. Route 101 and the Avenue of the Giants (SR 254), which are eligible for official designation as California State Scenic Highways (Humboldt County 2008). Both Sites 1 and 2 are adjacent to Avenue of the Giants, while Site 1 is also situated adjacent to U.S. Route 101. Although highway travelers would be shielded from viewing most construction activities and staging/storage of equipment and vehicles by dense vegetation at the project site, short term construction activities, such as directional drilling to install the supply pipe under Avenue of the Giants and the transportation of new water tanks to Site 1 adjacent to U.S. Route 101, would be visible, but considered temporary and less than significant. The water supply pipe and tanks would not be visible from the two highways once installation is complete. Less than significant impact.

c) As described in Discussion (a) above, construction activities would require excavation of soil and removal of a limited amount of vegetation within the project site. As with any construction project, a temporary decrease in the visual appeal of the areas immediately affected by the work being performed would occur; however, Site 2 would be closed during project construction, work would occur outside of the peak summer visitation season, and construction-related activities would be temporary. In addition, excavated materials would be replaced back into excavation trenches or removed from the site, thus returning the site to pre-construction conditions. Less than significant impact.

d) Lighting is not an element of this project, all work will be conducted during daylight hours, and no permanent new light sources will be introduced into the landscape. Above-ground water system equipment, such as the new water tanks, is not expected to produce metallic shine or glare. No impact.

II. AGRICULTURAL RESOURCES

ENVIRONMENTAL SETTING

Humboldt Redwoods SP is located approximately forty miles south of Eureka in the Coast Range of southern Humboldt County. The park unit supports mature redwood forest, open prairie, riparian habitat, old-growth Douglas fir, and hardwood forests (DPR 2001). Agricultural operations and farm land are not located within the boundaries of Humboldt Redwoods SP. Although most of the land surrounding Humboldt Redwoods SP is owned by logging companies and is managed by the Pacific Lumber Company, surrounding land uses also include agriculture, ranching, and resource extraction (DPR 2001).

The Williamson Act--enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are lower than normal because they are based upon farming and open space uses as opposed to full market value. (California Department of Conservation 2008). As of November 2008, the Williamson Act supports agricultural production on approximately 200,000 acres in Humboldt County (Humboldt County 2008).

The Williams Grove Water System Repair Project would take place in Project Sites 1 and 2 at Humboldt Redwoods SP and both sites are located about one mile north of the town of Myers Flat. The entire project site is surrounded by redwood forest (Martin 2008) and does not support any agricultural operations or farmland (HCDCDS 2003).

WOULD THE PROJECT*:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒

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

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a, b, c) As noted in the Environmental setting above, Humboldt Redwoods SP does not support any agricultural operations or farmland. All work proposed for this project would be confined within park unit boundaries in areas that do not border agricultural lands outside the park unit boundaries. The proposed work would not result in the conversion of agricultural land to a non-agricultural use, or change any existing zoning. No impact.

III. AIR QUALITY AND CLIMATE CHANGE

ENVIRONMENTAL SETTING

The park unit and the two sites of the proposed project are located in southern Humboldt County, part of the North Coast Air Basin (NCAB), which consists of five counties including Del Norte, Humboldt, Trinity, Mendocino, and the northern section of Sonoma (California Air Resources Board 2007). The NCAB has some of the best air quality in the State due, in part, to the fact that the basin is sparsely populated and because prevailing winds blow clean air landward from the Pacific Ocean. The NCAB is under the jurisdiction of the U.S. Environmental Protection Agency (USEPA) Region IX. A portion of the NCAB, including Del Norte, Humboldt, and Trinity counties, comprises the North Coast Unified Air Quality Management District (NCUAQMD 2008, California Air Resources Board 2008a).

Climate

Humboldt County straddles the northwestern California coast and mountains and is known for its temperate climate and considerable precipitation. Due to proximity to the Pacific Ocean, fog is common and relative humidity is high. Coastal temperatures vary approximately 10 degrees between summer and winter, while inland areas undergo a wider range of variability, over 100^{o} Fahrenheit (F) during the summer and less than 32^{o} F during the winter, with increasing distances from the ocean. Rainfall typically occurs year around throughout the County with approximately 90 percent of the seasonal total rainfall occurring from October through April. Seasonal totals range from 40-100 inches of precipitation with inland areas, such as Williams Grove, typically receiving amounts near the lower end of the range (Humboldt County 2008a).

Air Quality Designations

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

The USEPA is responsible for setting National Ambient Air Quality Standards (NAAQS) and established national area designations for six criteria pollutants after the passage of the Clean Air Act of 1970. These six pollutants include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and particulate matter (PM) in the form of inhalable coarse particles (PM_{10}) and fine particles ($PM_{2.5}$) (USEPA 2008a). If an area does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant, it is designated as “non-attainment.” If an area meets the national primary or secondary ambient air quality standard for the pollutant, it is designated in “attainment.” An area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant is designated “unclassifiable” (USEPA 2008b, 2008c).

The California Air Resources Board (CARB) is the lead State agency responsible for air quality and for assisting local air districts in California. CARB has set California area designations for ten criteria pollutants including ozone, PM_{10}, $PM_{2.5}$, CO, NO_2, SO_2, sulfates, lead, hydrogen sulfide, and visibility reducing particles (VRPs). If a pollutant concentration is lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "non-attainment" for that pollutant. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified" (CARB 2008b). NCUAQMD is the local regulatory agency that develops and implements air quality plans to identify air pollution levels, sources of air pollution, and attainment strategies for the region where the proposed Williams Grove Water System Repair Project is located (NCUAQMD 2008).

The following table illustrates the criteria pollutant designations at both the State and federal levels.

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

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

(CARB 2008b)

Sources

During personal and business activities, Californians release thousands of tons of pollutants into the air every day. Although each of us may only produce a small amount of air pollution, the combined pollution from the 33 million Californians adds up to problems. Some air pollutants are formed and released during the combustion (burning) of petroleum-based products and other fuels such as wood. Examples include gasoline and diesel-powered vehicles and fireplaces, respectively. Fugitive dust, a type of particulate matter, is introduced into the air through activities such as soil cultivation and vehicles operating in open areas of bare ground or on dirt roadways (USEPA 2008d). Many tons of pollutants also enter the air through evaporation, such as fuel from gasoline storage and dispensing facilities, and car and truck gasoline tanks, and gasoline storage containers (CARB 2008c).

On hot, sunny days, pollutants emitted by vehicles, industry, and many products (nitrogen oxides and volatile organic compounds) react with each other to form ozone, the main ingredient of smog. During the winter, temperature inversions can trap tiny particles of smoke and exhaust from cars, trucks, fireplaces, and anything else that burns fuel. This keeps the pollution close to the ground at the level where people are breathing (CARB 2008c).

While Humboldt County residents enjoy some of the best air quality in the state, the growing population of the County is accompanied by routine sources of air pollution, especially sources of PM_{10} such as manufacturing facilities, fireplaces and wood stoves, vehicles, and wildfires (Humboldt County 2008c).

Health Hazards

Ozone and particulate matter are the most common air pollutants in California. Ozone, also known as smog, can irritate the respiratory system, causing coughing, irritation in the throat or a burning sensation in the airways. It can reduce lung function, causing chest tightness, wheezing, and/or shortness of breath. Particle pollution, also known as particulate matter, is composed of microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. When exposed to these small particles, people with heart or lung diseases and older adults are more at risk of hospital and emergency room visits or, in some cases, even death from heart or lung disease. Carbon monoxide can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues. Sulfur dioxide causes a wide variety of health and environmental impacts because of the way it reacts with other substances in the air. Impacts include respiratory effects, visibility impairments, acid rain, plant and water damage, and aesthetic damage (building decay). People, animals, and fish are mainly exposed to lead by breathing and ingesting it in food, water, soil, or dust. Lead accumulates in the blood, bones, muscles, and fat. Nitrogen dioxide contributes to ozone; causes respiratory problems; contributes to the formation of acid rain; contributes to nutrient overload, which deteriorates water quality; contributes to atmospheric particles, which causes visibility impairment; reacts to toxic chemicals; and contributes to global warming (USEPA 2008e).

Sensitive Receptors

Sensitive receptors include individuals as well as groups relating to specific land uses. Some individuals are considered to be more “sensitive” than others to air pollutants. The reasons for greater sensitivity than average include health problems, proximity to the emission source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes (Humboldt County 2008b) are considered to be sensitive receptors to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive receptors because people in residential areas are often at home for extended periods of time, so they can be exposed to pollutants for extended periods. Recreational areas are considered moderately sensitive to poor air quality because vigorous exercise associated with recreation places a high demand on the human respiratory function.

Sensitive receptors at and adjacent to the two sites of the proposed project include recreational users (visitors to Humboldt Redwoods SP) and people commuting by the site on U.S. Route 101 and Avenue of the Giants.

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

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

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) The work proposed as part of the Williams Grove Water System Repair Project would not conflict with, or obstruct the fulfillment of any applicable air quality plan for NCUAQMD or the NCAB. No impact.

b, c) The proposed project would not emit air contaminants at a level that, by themselves, would violate any air quality standard, or contribute to a permanent or long-term increase in any air contaminant; however, project implementation would generate intermittent, short-term emissions of fugitive dust, a type of particulate matter as described in the Environmental Setting, and involve the use of equipment that would emit ozone precursors (nitrogen oxides and volatile organic compounds). Increased emissions of fugitive dust could contribute to the existing non-attainment conditions for PM_{10} in Humboldt County. Equipment used at the two project sites would be maintained and would not cause a violation of federal and State air quality standards or cumulatively considerable net increase for ozone, which is currently in attainment. DPR would conduct the proposed project during the fall and winter seasons and not during the dry summer months when soils are driest and more likely to generate fugitive dust during construction activities. Additionally, the proposed project would be located within a stand of mature redwood trees where wind does not easily penetrate at ground level and any dust that is generated would not be expected to travel far from the project sites. Integration of

STANDARD PROJECT REQUIREMENT AIR-1, FUGITIVE DUST AND OZONE (See Chapter 2) into the project design would reduce any potential impacts of fugitive dust and ozone to human health a less than significant level.

d) Humboldt Redwoods SP is a facility with sensitive receptors who recreate at Site 2. Travelers driving by both Sites 1 and 2 on the Avenue of the Giants and U.S. Route 101 also could include sensitive receptors. Other public facilities with sensitive receptors, such as the towns of Weott and Myers Flat (at least one mile north and south of the project sites respectively) and DPR park personnel housing (about two miles north of the sites near the Visitor Center / park unit office) are not close to the project sites (DPR 2008, Mapquest 2008).

   As noted in the Discussion (b-c) above, project construction would temporarily generate small amounts of fugitive dust and ozone precursors. DPR would close Site 2 to the public; equipment used during construction would be maintained, DPR would not construct the project during the dry summer months when soils are more likely to generate fugitive dust; and the proposed project would be located within a stand of mature redwood trees where any dust that is generated during construction would not be expected to travel far from the project site. Additionally, integration of **STANDARD PROJECT REQUIREMENT AIR-1, FUGITIVE DUST AND OZONE** (See Chapter 2) would reduce any potential impacts of exposure to sensitive receptors to fugitive dust and ozone to a less than significant level.

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

Climate Change

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

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

In discussing climate change, three fundamental questions must be addressed:
1) How will the project affect climate change?
In general, a project would affect climate change if it altered the earth's radiative ability through direct emissions of GHG; indirect emissions of GHG; alteration of sinks of GHG; or changes in land albedo (i.e., reflectivity). The proposed project would repair the existing water system that serves the Williams Grove Day Use and Group Camp areas by installing new potable water line pipes and replacing existing water tanks and water faucets. The proposed project would

not increase the earth's radiative ability through direct or indirect emissions of GHG or change land reflectivity. The project could alter the sinks of GHG by removing vegetation such as small trees/saplings, shrubs, and herbs that currently grow on or immediately adjacent to the two sites of the proposed project. However, the project has been designed to minimize tree removal. In addition, the number of trees that could be removed as a result of the project would be a small proportion relative to the number of trees in the park unit and the region.

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

Repairing the existing water system would not be affected by a change in water availability and quality, an increase in the frequency or severity of storm events, changes in cloud cover and rainfall patterns, sea level rise, or ozone exceedances.

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

IV. BIOLOGICAL RESOURCES

ENVIRONMENTAL SETTING

Humboldt Redwoods SP is an approximately 51,590 acre park unit in southern Humboldt County that includes about 18,000 acres of old growth redwood forest. Most of the acreage comprising the park unit lies within the watershed of the South Fork of the Eel River and its tributaries, especially Bull Creek. The two sites of the proposed Williams Grove Water System Repair Project are located approximately one mile north of the community of Myers Flat and east of the South Fork of the Eel River (Appendix A: Figures 1 and 2). Site 1 is a water supply pipe alignment under Avenue of the Giants and a slope east of Avenue of the Giants, while Site 2 is the Williams Grove Day Use and Group Camp areas situated on an alluvial terrace west of Avenue of the Giants.

Vegetation at the two project sites consists of *Sequoia sempervirens* Alliance, based on the classification system defined in the *Manual of California Vegetation* (Sawyer-Keeler-Wolf 1995) and revised by the California Department of Fish and Game's Vegetation Classification and Mapping Program (DFG 2007). The current system conforms to the National Vegetation Classification System developed by the United States Geological Survey/National Park Service (USGS/NPS) Vegetation Mapping Program (USGS 2008).

Redwood (*Sequoia sempervirens*) dominates the canopy of the *Sequoia sempervirens* Alliance, which also includes tanbark oak (*Lithocarpus densiflorus*) and Douglas-fir (*Pseudotsuga menziesii*). Common constituents of the shrub and herbaceous layers in the *Sequoia sempervirens* Alliance include western sword fern (*Polystichum munitum*), poison oak (*Toxicodendron diversilobum*), western trillium (*Trillium ovatum*), and redwood sorrel (*Oxalis oregona*).

Site 2 supports a mature redwood forest habitat composed of "old growth" and "residual old growth" redwood stands. "Old growth" redwood stands have not been logged, while "residual old growth" stands have been partially logged, but retain numerous mature, unlogged trees. Many of the mature trees in Site 2 measure eight to twelve feet (ft) in diameter at breast height (DBH). The portion of the proposed project in Site 1 has been logged and the forest is immature, dominated by densely growing, young redwood and Douglas-fir saplings and small trees with an average DBH measurement of less than twenty inches. Site 2 has characteristically sparse shrub and herbaceous layers, with bare ground evident in some locations. A shallow duff and litter layer usually develops in these locations in the off season of visitor use. California huckleberry (*Vaccinium ovatum*) and salal (*Gaultheria shallon*) dominate the shrub layer in Site 1.

Special-Status Species

Sensitive biological resources that occur or potentially occur in or near the two sites of the proposed are discussed in this section. Special-status species (sensitive species) are defined as plants and animals that are legally protected or that are considered sensitive by federal, state, or local resource conservation agencies and organizations. Specifically, this includes species listed as State or federally Threatened or Endangered, those considered as candidates for listing as Threatened or Endangered, species identified by the US Fish and Wildlife Service (USFWS) and/or California Department of Fish and Game (DFG) as Species

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

All special-status species and their habitats were evaluated for potential impacts from the proposed project. Existing available data were collected and reviewed to determine the proximity of special-status plants, animals, and their habitats to the project site; DPR-approved biologists conducted queries of the DFG California Natural Diversity Database (CNDDB) (DFG 2008), the CNPS[1] On-line Inventory (CNPS 2008), and the USFWS (USFWS 2008a, USFWS 2008b) for special-status species and habitats within the Weott and eight surrounding 7½ - minute United States Geological Society (USGS) quadrangle maps.

Special-status plant and animal species are described below along with their potential to occur at the sites of the proposed project.

Plant Species

Fourteen special-status plant species identified by the CNDDB and CNPS for the Weott and eight surrounding USGS quadrangle maps are reported to occur or have a potential to occur within or adjacent to the project site (Appendix B). No federally listed species are identified by the USFWS for these nine USGS quadrangle maps. Although suitable to marginally suitable habitat is available within the project sites for eleven of the fourteen species, no special status plant species were located during surveys conducted during the appropriate blooming periods in 2007 and 2008; therefore none are listed and described.

Wildlife Species

Wildlife is abundant in Humboldt Redwoods SP due to the diversity of habitat types and because the park unit contains more miles of permanent and seasonal streams than any other state park unit in California. The variety of wildlife found in the park unit includes, but is not limited to, black bear (*Ursus americanus*), river otter (*Lutra canadensis*), mule deer (*Odocoileus hemionus*), brush rabbit (*Sylvilagus bachmani*), western gray squirrel (*Sciurus griseus*), raccoon (*Procyon lotor*), turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), belted kingfisher (*Ceryle alcyon*), winter wren (*Troglodytes troglodytes*), Stellar's jay (*Cyanocitta stelleri*) northern flicker (*Colaptes auratus*), Pacific banana slug (*Ariolimax columbianus*), western fence lizard (*Sceloporus occidentalis*), and Pacific tree frog (*Pseudacris* [=*Hyla*] *regilla*).

The proposed Williams Grove Water System Repair Project occurs adjacent to highways and in heavily used public day use and group campground recreation facilities in an old growth redwood forest setting. Special-status wildlife species that have been documented in Humboldt Redwoods SP or could potentially occur in or near the project sites are described below, including species appearing on State or federal database lists.

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

Wildlife Species Known or Likely to Occur in Humboldt Redwoods SP with Potential for Presence at the Project Site

Marbled Murrelet (*Brachyramphus marmoratus*). This State Endangered and federal Threatened species is known to occur in Humboldt Redwoods SP. Marbled murrelet is a seabird that spends most of its life in marine environments, but ventures inland to old growth forests to breed (USFWS 2008b). The breeding season for this species is March 24 through September 15. Marbled murrelets primarily use old growth forests (characterized by large trees, a multistoried stand, and moderate to high canopy closure), but also use residual old growth stands. For breeding purposes trees must have large branches or deformities for nest platforms, with the occurrence of suitable platforms being more important than tree size alone (USFWS 1997). Major threats to the species include loss of habitat, predation, and various impacts in their marine habitat. Although this species has not been detected at the project sites, suitable habitat is present.

Northern Spotted Owl (*Strix occidentalis occidentalis*). Northern spotted owl is a Threatened species known to occur in Humboldt Redwoods SP. The breeding season for this species is February 1 through August 31. Northern spotted owls generally occur in older forest habitats because these forest types provide suitable nesting, roosting, and foraging opportunities (USFWS 2008b). Stands occupied by northern spotted owls often have high canopy cover with a layered overstory, multiple tree species, and a large tree component. Project activities would occur in an area heavily used by the public, bordered on one side by U.S. Route 101, and transected by Avenue of the Giants; however, most of the area in and around the project sites is potential habitat for this species.

Olive-sided Flycatcher (*Contopus cooperi*). This California Species of Special Concern nests in open-canopy late successional-conifer forest near edge openings, usually at higher elevations (Shuford and Gardali 2008). The breeding season for this species is February 1 through September 15. Suitable habitat is present at the project sites.

Sensitive Bat Species. Humboldt Redwoods SP is within the potential range of several sensitive bat species including the pallid bat (*Antrozous pallidus*) and western red bat (*Lasiurus blossevillii*), both California Species of Special Concern. Other bat species identified as medium to high conservation concern by the Western Bat Working Group with some potential to occur in or near Humboldt Redwoods SP include, but are not limited to, the hoary bat (*Lasiurus cinereus*), Yuma myotis (*Myotis yumanensis*), silver-haired bat (*Lasionycteris noctivagans*) long-eared myotis (*Myotis evotis*), and long-legged myotis (*Myotis volans*). Roost trees and snags located at the project sites and typical for tree-roosting bat species, are often large and in some stage of decay (Brigham et al. 1997). The bat maternity period is March 24 through September 15.

Nesting Raptors and Migratory Birds are protected by the federal Migratory Bird Treaty Act (16 U.S.C. 703-712), and by the California Fish and Game Code (Sections §3503, §3503.5, and §3513). Under these laws, all raptors and migratory birds and their nests are protected. A wide variety of migratory birds and several raptor species potentially occur at the project sites.

Wildlife Species Occurring in or Near Humboldt Redwoods SP, but Unlikely to Occur at the Project Site

Coho Salmon, Southern Oregon/Northern California Evolutionarily Sustainable Unit (ESU) (*Oncorhynchus kisutch*). This federal and State Threatened species occurs in the Eel River and its tributaries, including the South Fork of the Eel River.

Steelhead, Northern California ESU (*Oncorhynchus mykiss*). Steelhead is a federal Threatened species that occurs in the Eel River and its tributaries, including the South Fork of the Eel River.

Chinook Salmon, California Coastal ESU (*Oncorhynchus tshawytscha*). This federal Threatened species occurs in the Eel River and its tributaries, including the South Fork of the Eel River.

Northern Red-Legged Frog (*Rana aurora aurora*). This California Species of Special Concern breeds in permanent water bodies such as ponds, lakes, slow moving streams, marshes and wetlands throughout Humboldt County. No suitable breeding locations occur in or around the project sites. Northern red-legged frog can be found far from suitable breeding locations in dense vegetation that provides cover, a habitat type which does not occur within the project sites.

Foothill Yellow-Legged Frog (*Rana boylii*). Foothill yellow-legged frog is a California Species of Special Concern that occurs in clear rivers and creeks with gravel or rock substrate and sunny banks in forest or woodland habitats (Jennings and Hayes 1994). This species has been documented in Humboldt Redwoods SP and in nearby streams (DFG 2008). Suitable habitat for this highly aquatic frog occurs in the South Fork of the Eel River adjacent to but not within the project sites.

Western Tailed Frog (*Ascaphus truei*). This California Species of Special Concern generally inhabits cold, clear, rocky streams in forested areas (Stebbins 2003). Threats to this species include activities that result in sedimentation of suitable stream environments. There is no suitable habitat for this species within or adjacent to the project sites.

Southern Torrent Salamander (*Rhyacotriton variegates*). This California Species of Special Concern inhabits cold and clear, well-shaded streams, seeps, and waterfalls (Stebbins 2003). Threats to this species include activities that result in sedimentation or water removal in suitable habitat. There is no suitable habitat for southern torrent salamander within or adjacent to the project sites.

Northwestern Pond Turtle (*Emys* [=Clemmys] *marmorata*). The northwestern pond turtle is a California Species of Special Concern that inhabits still or slow moving aquatic habitats with submerged or emergent vegetation and also requires open basking sites and sandy or loose soil sites to lay eggs (Jennings and Hayes 1994). Mating usually occurs in April and May and females then lay eggs in upland nest locations. No aquatic habitat or suitable egg-laying sites occur at the project sites.

Osprey (*Pandion haliaetus*). Osprey is a California Species of Special Concern that builds large stick nests in treetops or snags in open forests within fifteen miles of water used for foraging (DFG 2006a). The breeding season for osprey is February 1 through September 15.

Ospreys are known to nest in Humboldt Redwoods SP and potential exists for this species to nest in or near the project sites.

Bald Eagle (*Haliaeetus leucocephalus*) (nesting and wintering). This State Endangered species was recently delisted under the Federal Endangered Species Act. The bald eagle is also protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA)(USFWS 2006a). Bald Eagles in California can be either year-round residents or winter migrants. Nest trees are often in very large trees in close proximity to water and breeding season generally occurs between February and July (DFG 2006a). Suitable nesting and wintering habitat occurs in or near the project sites.

Yellow Warbler (*Dendroica petechia*). The yellow warbler is a California Species of Special Concern that typically breeds in riparian vegetation such as willows or cottonwoods close to water (Shuford and Gardali 2008). The breeding season for this species is February 1 through September 15. There is suitable nesting habitat for yellow warbler along the South Fork of the Eel River adjacent to the project sites.

Yellow-breasted Chat (*Icteria virens*). This California Species of Special Concern nests locally in well-developed riparian vegetation along inland river valleys in Humboldt County (Harris 1991). The breeding season for this species is February 1 through September 15. Typical nesting habitat is dominated by willows and alders and contains a dense shrub layer. There is suitable nesting habitat for yellow-breasted chat along the South Fork of the Eel River adjacent to the project sites.

Willow Flycatcher (*Empidonax traillii*). This State Endangered species is known to occur in Humboldt Redwoods SP and breeding habitat generally consists of extensive, dense willow thickets along riparian or other wetland areas. The riparian area in close proximity to the project sites is generally sparsely vegetated due to high visitor use which peaks during the breeding season. The breeding season for this species is February 1 through September 15. There is suitable habitat for willow flycatcher along the South Fork of the Eel River away from high visitation areas.

Fisher, West Coast Distinct Population Segment (DPS) (*Martes pennanti*). The fisher is a federal and State Candidate species that generally occurs in mature forest habitats with high canopy closure, large trees and snags, large woody debris, large hardwood component, and a multi-story canopy layer (USFWS 2004). Suitable habitat for fishers is present in and near the project sites.

Wildlife Species Not Known from Humboldt Redwoods SP and Unlikely to Occur at the Project Site

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*). The Western yellow-billed cuckoo, a State Endangered species, is rarely seen in Humboldt County. Suitable habitat for the species usually occurs in riparian areas where active and healthy rivers and streams create young riparian habitat with dense, low, woody vegetation (Laymon 1998). Nests are often located in willows or cottonwoods. Suitable habitat does not occur adjacent to the project sites.

Sensitive Natural Plant Communities

Sensitive plant communities are regionally uncommon or unique, unusually diverse, or of special concern to local, state, and federal agencies. Removal or substantial degradation of these plant communities constitutes a significant adverse impact under CEQA.

A single sensitive natural plant community, Upland Douglas-fir Forest (*Pseudotsuga menziesii* Alliance), is reported by the CNDDB for the Weott and eight surrounding 7.5 minute quadrangle maps (DFG 2008). Upland Douglas-fir Forest does not occur within the project sites; however, the *Sequoia sempervirens* Alliance, which is present throughout the two project sites, is considered a sensitive natural community (CNDDB 2009) because it contains mature forest components, especially mature redwood trees that provide valuable habitat for both common and special status wildlife species such as the federally threatened marbled murrelet. Additionally, mature redwood forest is of special significance because it represents a remnant of a unique forest type restricted to the moist environment of coastal California and extreme southwest Oregon. Currently, only about 5% of the original two million acres of mature redwood forests have not been subject to logging (Save the Redwoods League 2009).

Habitat Conservation Planning

The Habitat Conservation Planning (HCP) program under section 10(a)(1)(B) of the federal Endangered Species Act (ESA) provides a process to minimize and mitigate the impact of the permitted take of a federally listed species or their habitats from otherwise lawful activities (USFWS 2009). Section 10 authorizes states, local governments, and private landowners to apply for an Incidental Take Permit from activities that may harm listed species or their habitats. To obtain a permit, an applicant must submit a “conservation plan”, which has become known as a Habitat Conservation Plan (HCP). The principle underlying the Section 10 exemption from the ESA is that some individuals of a species or portions of their habitat may be expendable over the short term, as long as enough protection is provided to ensure the long term recovery of the species.

There are no HCPs that have been adopted for Humboldt Redwoods SP. However, private lands adjacent to the park unit that are managed by Humboldt Redwood Corporation are subject to an HCP formerly negotiated with the USFWS/National Marine Fisheries Service (NMFS) and Pacific Lumber Corporation. This habitat-based multi-species HCP is a long-term comprehensive program that allows for commercial timber production while ensuring the continued health of the biological communities and the minimization and mitigation of impacts of company activities on individual species.

Sudden Oak Death

Discovered in 1995, Sudden Oak Death (SOD) is caused by the pathogen *Phytophthora ramorum*, which has infected and killed thousands of tanbark oak, coast live oak (*Quercus agrifolia*), Shreve oak (*Quercus parvula* var. *shrevei*), and California black oak (*Quercus kelloggii*) in coastal forests from Humboldt County to Monterey County (COMTF 2008). This water mold also infects many other species, including California bay laurel (*Umbellularia californica*), Pacific madrone (*Arbutus menziesii*), California buckeye (*Aesculus californica*), coast redwood, Douglas-fir, big leaf maple (*Acer macrophyllum*), California honeysuckle (*Lonicera hispidula var. vacillans*), California coffeeberry (*Rhamnus californica*), toyon

(*Heteromeles arbutifolia*), rhododendron (Rhododendron spp.), manzanita (*Arctostaphylos* spp.) and huckleberry (*Vaccinium* spp.). California bay laurel is one of the principal host species for *Phytophthora ramorum.*

SOD could be spread when host plants, wood chips, burls, other host plant products or soils contaminated with the pathogen's spores are moved to previously uninfected areas (COMTF 2008). SOD thrives in cool, wet to moist climates, and living plants and its spores are found in soil and water, as well as plant material. The risk of SOD spread is greatest in muddy areas and during rainy weather where spore-harboring hosts are present. Detached plant leaves, organic material, and soil, which may harbor spores of the pathogen, are more likely to stick to vehicles, equipment, and humans when they are wet.

Humboldt County is one of fourteen California counties with confirmed SOD findings and is under State and federal quarantine regulations governing the movement of effected plants and plant material out of the quarantined area (COMTF 2008). Additionally, laboratory analysis has confirmed that the pathogen *Phytophthora ramorum* occurs in Humboldt Redwoods SP and DPR has undertaken two projects within the park unit to address the spread of SOD. In 2005, DPR removed and disposed of infected tanbark oak and California bay (*Umbellularia californica*) trees at a location several miles south of the two sites of the proposed project. In 2007, DPR removed and disposed of California bay laurel at several park locations including the two sites of the proposed project.

Wetlands and Waters of the United States

The federal Clean Water Act (CWA) defines wetlands as lands that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The U.S. Army Corps of Engineers (USACE) has jurisdictional authority of wetlands under provisions found in Section 404 of the CWA. Typically, USACE jurisdictional wetlands meet three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology.

Waters of the U.S. (Other Waters) are under the jurisdiction of and are regulated by the USACE under Sections 401 and 404 of the CWA. These are defined as all waters used in interstate or foreign commerce, waters subject to the ebb and flow of the tide, all interstate waters including interstate wetlands and all other waters such as: intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds.

A DPR-approved biologist with wetland delineation expertise performed site investigations for the presence of USACE-jurisdictional wetlands and Waters of the U.S. at the project sites on June 28, 2007 (Martin 2007). No USACE-jurisdictional wetlands or Waters of the U.S. were identified within the project site.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Have a substantial adverse effect, either directly or	☐	☐	☒	☐

through habitat modification, on any species identified as a sensitive, candidate, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands, as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) The proposed project would repair the existing water storage and delivery system that serves the Williams Grove Day Use and Group Camp areas. Replacement of pipes, tanks, and associated equipment would entail trenching and directional drilling. Construction personnel would transport equipment and vehicles to and from the water tank sites in Site 1 via an existing maintenance trail used by DPR park personnel, U.S. Route 101, and/or by helicopter.

   DPR would implement the following measures to reduce impacts to a less than significant level for special-status species.

   (i) **Marbled murrelet.** Marbled murrelets are sensitive to visual and noise disturbance of their nesting habitat in mature forest stands in California. Suitable nesting habitat occurs in and around the project sites and therefore removal of suitable habitat or construction activities during the breeding season could impact this species. In addition, removal of large trees or smaller trees that provide visual cover between

potential nest trees and potential areas of disturbance (such as roads, Day Use picnic and Group Camp areas) could impact the quality of the habitat for marbled murrelets. Integration of **STANDARD PROJECT REQUIREMENT BIO-1: MARBLED MURRELET, NORTHERN SPOTTED OWL, NESTING MIGRATORY BIRDS AND RAPTORS, AND SENSITIVE BAT SPECIES** (See Chapter 2, Project Description), would reduce the potential impacts of project activities on actively nesting marbled murrelets or the suitability of the habitat for marbled murrelets to a less than significant level.

(ii) **Northern spotted owls**. Northern spotted owls are known to occur in Humboldt Redwoods SP; suitable habitat that likely supports nesting occurs across the South Fork of the Eel River to the west and east of the project sites. Removal of suitable habitat or construction activities producing noise greater than ambient levels during the northern spotted owl breeding season could result in potential impacts to northern spotted owls. However, DPR-approved biologists have not detected northern spotted owls at the project sites during informal surveys and no park personnel or members of the public have reported recent owl sightings at the sites.

High visitor use and automobiles within and adjacent to the project sites, especially during the breeding season, make it unlikely that active nesting occurs in close enough proximity to the sites that the noise associated with project activities could cause disturbance to northern spotted owls. In addition, the majority of noise that would be caused by construction activities would not be significantly greater than ambient noise associated with trucks and motorcycles using U.S. Route 101 and Avenue of the Giants, Recreational Vehicles (RVs) in the campground, and all other noise generated at the high-use recreational sites. Therefore, integration of **STANDARD PROJECT REQUIREMENT BIO-1: MARBLED MURRELET, NORTHERN SPOTTED OWL, NESTING MIGRATORY BIRDS AND RAPTORS, AND SENSITIVE BAT SPECIES** (See Chapter 2), would reduce any potential impact of project activities on actively nesting northern spotted owls to a less than significant level.

(iii) **Nesting raptors and migratory birds**. Sensitive birds (e.g., yellow warbler, olive-sided flycatcher) and raptors could be present within the site of the proposed project, and could be nesting in the vicinity of the proposed project. In addition, migratory birds and raptors are protected under the Fish and Game Code §3503.5 and the Migratory Bird Treaty Act (MBTA). Tree removal and loud construction activities that would occur during the breeding season could impact sensitive birds and raptors. Integration of **STANDARD PROJECT REQUIREMENTBIO-1: MARBLED MURRELET, NORTHERN SPOTTED OWL, NESTING MIGRATORY BIRDS AND RAPTORS, AND SENSITIVE BAT SPECIES** (See Chapter 2) in the project design would prevent the disturbance or loss of an active nest and reduce the potential impact to these species to a less than significant level.

(iv) **Sensitive bat species.** Humboldt Redwoods SP lies within the range of several sensitive bat species. Removal of trees or snags that provide suitable roosting habitat or construction work during the maternity period could impact sensitive bat species. Integration of **STANDARD PROJECT REQUIREMENT BIO-1: MARBLED MURRELET, NORTHERN SPOTTED OWL, NESTING MIGRATORY BIRDS AND RAPTORS, AND SENSITIVE BAT SPECIES**

(See Chapter 2) into the project design would reduce the potential impact to sensitive bat species to a less than significant level.

(v) **Salmon, steelhead, amphibians, and reptiles.** The Eel River and its tributaries, such as the South Fork of the Eel River, provide suitable habitat for several special status fish, amphibian, and reptile species as stated in the Environmental Setting above. Although the South Fork of the Eel River is adjacent to the project sites, no suitable breeding, upland, or aquatic habitat occurs within any project locations for northern red-legged frog, foothill yellow-legged frog, western tailed frog, southern torrent salamander, or northwestern pond turtle. However, a temporary increase in soil erosion and increased sedimentation of the nearby South Fork of the Eel River could occur during construction of the proposed project. Integration of **STANDARD PROJECT REQUIREMENT HYDRO-1, EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION** (See Chapter 2) would reduce the potential impact of erosion, sedimentation, and contaminants on aquatic species to a less than significant level.

(vi) **Special-status plant species.** Fourteen special-status plant species identified by CNDDB and CNPS are reported to occur or have a potential to occur within or adjacent to the project site (Appendix B). Suitable to marginally suitable habitat is available at the project sites for eleven of the fourteen species; however, no special-status plant species were located during surveys conducted during the appropriate blooming periods in 2007 and 2008. No impact.

(vii) **Fisher.** Suitable habitat for this species is present in and near the project sites; however, the disturbance associated with high visitor use and proximity to U.S. Route 101 and the Avenue of the Giants make it unlikely that fishers would utilize the area for denning or resting. The proposed project would not result in fragmentation or deterioration of suitable habitat or impede dispersal through the area. No impact.

b) The *Sequoia sempervirens* Alliance within the project sites is considered to be a sensitive natural community because it contains mature forest components, especially redwood “old growth” and “residual old growth” that provide valuable habitat for both common and special-status wildlife species, including marbled murrelet, a State Endangered and federally Threatened species.

The project proposes to trim vegetation and remove immature, small trees/saplings to facilitate delivery and replacement of materials/equipment within Site 1. Installation of a new underground water distribution pipe in Site 2 would require trenching in certain locations to install the distribution pipe, potentially impacting the roots of mature native trees. The project has been designed to minimize root impacts during installation of new water distribution pipe in Site 2 by replacing valves and pipes approximately adjacent to the existing abandoned pipes with the exceptions of (a) reconfiguring a portion of the main distribution pipe that is currently aligned through the redwood forest to a new alignment under the asphalt concrete (AC) Day Use and Group Camp access road and away from trees, and (b) relocating short spurs (lateral pipes) and associated water faucets connected to the main distribution pipe from the middle of picnic and camp sites to locations close to the access road and away from trees. Integration of

SPECIFIC PROJECT REQUIREMENT BIO-2, SENSITIVE NATURAL COMMUNITY (See Chapter 2) into project design would further reduce potential impacts to tree roots to a less than significant level.

c) No wetlands would be directly impacted as a result of the proposed project activities. Integration of **STANDARD PROJECT REQUIREMENTS HAZMAT-1**, **SPILL PREVENTION AND RESPONSE** and **HYDRO-1**, **EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION** (See Chapter 2) would reduce any potential impacts to a less than significant level.

d) The proposed project would not impede fish passage or wildlife movement and does not substantially impede the use of native wildlife nursery sites. No barriers would be installed and no work would occur in the South Fork of the Eel River or any other fish bearing streams; however construction personnel would transport equipment and vehicles to and from the water tanks in Site 1 via an existing maintenance trail that is used by DPR park personnel and that crosses a natural, intermittent drainage east of Avenue of the Giants. Although construction personnel would transport equipment and vehicles over the drainage, no species described in the Environmental Setting above are present in the drainage and integration of **STANDARD PROJECT REQUIREMENT HYDRO-2, WATER QUALITY PROTECTION** (See Chapter 2) would reduce any impact to aquatic habitat to a less than significant level.

e) As stated in the Environmental Setting above, Humboldt County is subject to state and federal quarantine regulations for the pathogen *Phytophthora ramorum*, which causes the often fatal disease known as Sudden Oak Death (SOD) in numerous species of native plants, especially oaks. This pathogen has been identified in Humboldt Redwoods SP and project activities could inadvertently transport this disease to new uninfected locations through improper disposal of infected plant material or if pathogen spores in soil or on infected plant material stick to construction vehicles, equipment, or personnel. Integration of **STANDARD PROJECT REQUIREMENT BIO-3: SUDDEN OAK DEATH** (See Chapter 2) into the project design will reduce impacts to a less than significant level.

f) The proposed project does not conflict with provisions of any local ordinances, adopted conservation plans, or policies. The Humboldt Redwoods Company is subject to provisions of an adopted HCP that guides commercial timber production and other activities on private lands adjacent to Humboldt Redwoods SP; however, this HCP does not involve park property or constrain park operations or activities. No impact.

V. CULTURAL RESOURCES

ENVIRONMENTAL SETTING

Humboldt Redwoods SP is located in the Coast Range and is primarily within the watershed of the South Fork of the Eel River. Situated along the Avenue of the Giants (old State Route 101 and SR 254), the park unit is located approximately forty miles south of Eureka. Climate in the region is characterized as *Mediterranean,* consisting of heavy precipitation in the winter months and dry summers.

The two sites of the proposed project are located approximately one mile north of the town of Myers Flat (Appendix A: Figures 1 and 2). The forty acre area that is known today as Williams Grove, and which contains the two project sites, was added to Humboldt Redwoods SP in 1928. The grove is bordered on the west by the South Fork of the Eel River and bordered on the east by U.S. Route 101. Slopes vary from flat alluvial terraces adjacent to the river to fairly steep slopes (≥ 20%) east of the river. The alluvial terraces are prone to seasonal flooding and have been the subject to large flood events. DPR built the existing in Site 2 in the late 1950s and early 1960s; however, earlier development including work by the Civilian Conservation Corps (CCC) was conducted in the 1930s and 1940s but destroyed by flooding. The Area of Potential Effect (APE) covers most of Williams Grove.

Cultural Setting

There are two main categories of cultural resources, the archaeological environment and the historic environment, both influenced by the resources available in the Coast Range region. Topography, weather, and abundance of natural resources in the Eel River watershed provided an ideal setting for both prehistoric and historic utilization and settlement. Archaeological and ethnographic data from previous studies discussed below indicate that the flat alluvial terraces along major drainages were prime areas for seasonal aboriginal settlements. Historically, Euroamerican settlers acquired, occupied, and improved these areas under the Homestead Act of 1862. After Europeans settled throughout the Coast Range and built transportation infrastructure, the lumber industry, which centered on coastal redwoods, became the primary economic activity in the region. Site 1 has been logged and the forest is immature, dominated by a densely growing, young redwood and Douglas fir saplings and small trees, while Site 2 supports a mature redwood forest habitat. The forest understory is comprised of patches of shrubs and herbaceous plants such as tanoak, live oak, willow, and huckleberry.

Prehistory/Ethnographic Background

The South Fork of the Eel River in Humboldt Redwoods SP is within the ethnographic territory of the Lolangkok Sinkyone. Lolangkok Sinkyone spoke an Athabascan language with only dialectical differences between neighboring groups (Kroeber 1976). The most comprehensive data on the Sinkyone was derived from informants during the first quarter of the twentieth century (Kroeber 1976). George Burt was one of the last surviving members of the Lolangkok Sinkyone and one of the last to live and work in the area. In 1922, he provided linguist C. Hart Merriam invaluable information on tribal place names, stories, and other accounts about Sinkyone culture (DPR 2001).

Except for the headwaters, the Lolangkok Sinkyone controlled all of the South Fork of the Eel

River. Group movement was seasonal and followed food supplies, especially the migration fish species known from the Eel River system, such as Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), steelhead (*O. mykiss*), and lamprey (*Lampetra* spp.) (Baumhoff 1963). Access to the river and tributaries and good sun exposure were critical factors in selection of village locations (Sampson 1983).

Native people occupied permanent villages along drainages and valleys to maximize procurement of fish in the winter months. The entire tribe moved down from the mountains to fish after the rivers began to rise with the first rains, which were accompanied by anadromous fish runs. Habitation in the summer months was characterized by temporary campsites in the higher elevations. During the summer, tribes were more nomadic, moving to higher elevations where the availability of plant food resources was at an optimum. Prehistoric and ethnographic data associated with sites in the hill regions are not as clearly defined as the permanent village sites along drainages (Kroeber 1925). Resource procurement in the summer required more mobility, and as a result, the sites were more temporary and indistinct.

Baumhoff (1958) compiled village location and place name data for the Sinkyone from unpublished notes on file at the Lowie Museum, University of California, Berkeley. This information was collected and documented by ethnographer Pliny E. Goodard in 1903 and 1908, and C. Hart Merriam in 1922. Using informants, a total of seventeen ethnographic village sites were documented on the South Fork of the Eel River in Humboldt Redwoods SP. This area extended from Franklin Lane Grove to the south and continued north, to the confluence of South Fork with the main branch of the Eel River. In addition to these sites, sixteen villages were reported on Salmon Creek and one on Bull Creek. Twelve additional villages were recorded on the South Fork of the Eel River, upstream in Shelter Cove Sinkyone territory. The early ethnographers visited all but a few of the actual sites. Three of the villages had washed away prior to these ethnographic studies (Sampson 1983).

Ethnographic data compiled by Baumhoff (1958) suggest one village site is (was) located adjacent to and north of Site 2 (Williams Grove Day Use and Group Camp project site). The village, *tantanaiki bûndûn* (Site #24, “many tan bark oak”) was described as being situated on the east side of the South Fork of the Eel River and downstream from the confluence of Coon Creek and the South Fork. The site reportedly had many house pits (Baumhoff 1958).

Historic Background

In 1828, trapper Jedediah Smith led a major expedition through the Humboldt region. Smith’s passage through the redwoods came at the end of a two year trapping expedition that began in 1826 with his pioneering of a trail southwest from the Great Salt Lake, through the Mojave Desert, and into California. The expedition party followed a circuitous route traveling north up the San Joaquin Valley, east across the Sierra Nevada Mountains to Utah, then south-southwest again back into California where, ignoring orders from the Mexican government to leave California, Smith and his men once again headed north, bound for what is now Oregon. Journals kept by Smith and his clerk, Harrison Rogers, conveyed descriptions of the topography, wildlife, and vegetation as it appeared to the men. Both Smith and Rogers tell of the arduous nature of traveling through the redwood forests, the richness of the soil, and the abundance of game. Additionally, Smith gave detailed descriptions of the Native Americans he encountered, commenting on their appearances and their dwellings; remarking that the dwellings were different than anything he had encountered while on previous expeditions

(Roland 1983).

The gold rush of 1848 and 1849 brought thousands of newcomers into California. Pierson B. Reading's discovery of gold along the Trinity River in present day Shasta County caused many gold seekers to head north to look for gold. The resulting influx of miners to the mountains of modern day Shasta and Trinity counties led to the settlement of the Humboldt region. Inland supply routes leading north from Sacramento could be interrupted by heavy rains and miners recognized that supplies shipped by sea from San Francisco to Trinidad or Humboldt Bay, then packed inland, could ensure that they would not be cut off. This desire for additional reliable supply routes led to further exploration and eventually the settlement of the Humboldt coast (Roland 1983). By 1851 the coastal towns of Trinidad, Arcata, and Eureka had grown to serve as both ports and pack trade centers. Early attempts at settling beyond the coastline were delayed due to hostilities between the local Native American populations and the settlers. The signing of the Hoopa Treaty in 1864 moved all local Native Americans to a reservation and allowed settlements to push further inland.

Two years earlier, the Homestead Act of 1862 had given local farmers and ranchers the opportunity to acquire inexpensive parcels of land. Early settlers shied away from the tall redwood trees, choosing instead the natural open areas which could be easily cultivated or used for grazing (DPR 2001). In 1865, Jesse Whitlow was the first settler in the vicinity of modern-day Humboldt Redwoods SP. Whitlow filed for a homestead near the confluence of the main stem of the Eel River and its South Fork where he planted crops and built a home. Three years later, in 1868, Elias and Sarah Myers settled on a 160-acre farm approximately nine miles south of present-day Dyerville, and for whom present-day Myers Flat is named. In the mid-1870s, Tosaldo and Addie Johnson homesteaded on Bull Creek, starting an apple orchard and raising sheep. In 1878, James Carothers, another settler to start an orchard, homesteaded on land near the present day park unit headquarters at Burlington (DPR n.d.).

Small-scale logging operations took place from the time of the first settlers, who cleared additional land for orchards and grazing by expanding natural open areas along the rivers. They also cut down the trees for grape stakes, fence posts, and lumber for building homes. The scale of logging operations, as well as the importance of logging to the region's economy, did not increase until local transportation routes improved. Prior to these improvements, lumbering was largely confined to areas in close proximity to the rivers because rivers provided the easiest route to transport logs to the mills. By the 1870s the logging industry had constructed railroads into the logging regions of Humboldt County and by the 1890s, all of the major lumber companies had established rail lines between their logging camps and mills. These rails lines, in addition to established roads in the logging areas, spread the scope of logging operations away from the rivers (Roland 1983).

As logging operations expanded, the industry grew. In addition to farmers and loggers, the redwood forests also drew local land speculators who purchased large tracts of land anticipating the potential commercial value of the lumber from redwood trees. Land speculation in the Humboldt County region occurred as early as the 1860s, roughly at the same time that the first settlers were moving into the area. Eventually large timber companies obtained much of the land, sometimes by fraudulent means. These companies held the land for future speculation (Roland 1983), an action that inadvertently saved large groves of redwood forest.

The creation of the Redwood Highway, in 1915, made Humboldt County and its groves of redwood trees more accessible to the general public. Within several years, as visitors to the region saw the giant redwoods for the first time, they began to raise considerable concern over the fate of the trees. Many conservationists were further alarmed by the increase in logging that occurred following World War I. As a result, in 1918 wealthy conservationists such as Madison Grant, John Merriam and Henry Fairfield Osborn helped found the Save-the-Redwoods League (Rohde 1992). Despite the efforts of the Save-the-Redwoods League to raise public awareness about the effects of logging the redwoods, logging operations continued, though on a relatively small scale as compared to the scope of future operations. After World War II, the increase in housing construction in California and the United States' commitment to aiding the rebuilding of Europe helped the Humboldt region's timber industries continue to grow (Newland 2001). Despite this increase in logging, the Save-the-Redwoods League was successful in preserving large redwood stands.

Prior to World War II, in 1921, Save-the-Redwoods League purchased 2,000 acres along the South Fork of the Eel River, which would become the land comprising Humboldt Redwoods SP. The State Legislature passed a $300,000 appropriation for the purchase of land in Humboldt County for the purpose of saving the spectacular redwood forests for the people of California. In August 1921, the first memorial redwood grove in the Humboldt region was established in honor of Colonel Raynal C. Bolling, the first American officer of high rank to perish in World War I (DPR 2001). In June 1922, Humboldt Redwoods SP (then called Humboldt State Redwoods Park) opened to the public. The Williams Grove area, including Sites 1 and 2 of the proposed project, was added to Humboldt Redwoods SP in 1928 when the California State Board of Forestry donated approximately forty acres of land to the park unit. Williams Grove was named after Solon H. Williams, a former member of the State Forestry Board (CDPR n.d.).

While picnicking and camping in Williams Grove occurred as early as 1932, infrastructure development would not begin until the Civilian Conservation Corps (CCC) arrived in the 1930s. In 1933, CCC Company 1507 established a camp at Dyerville. Using this camp as their base, Company 1507 performed maintenance, conservation and construction work in local campgrounds including Williams Grove, Burlington, Bull Creek, Stevens Creek and Richardson Grove. CCC crews cleared flood debris and fire hazards, built picnic and camping facilities, and installed utilities such as telephone, electricity, and water systems. In addition to this work the CCC constructed various roads and trails. Population growth in California after World War II led to increased usage and demand for more park lands and in 1945 as a result of this increased demand, the State updated and improved the Williams Grove facilities originally constructed by the CCC.

In December 1955, the first of two devastating floods occurred along the Eel River impacting many of the day use and campground areas at Humboldt Redwoods SP. The Williams Grove facilities at Site 2 of the proposed project were completely destroyed. It took the State three years to clean-up and rebuild facilities before the area was re-opened to the public in 1959 (Engbeck 2002, DPR n.d.). The facilities were destroyed again by a flood in 1964 flood that was even more devastating than the flood that occurred in 1955.

Archaeological Resources

DPR cultural resources personnel conducted research in the DPR Northern Service Center (NSC) library and evaluated other archival records and sources on file at the NSC to gather pertinent information regarding the archaeological potential in the vicinity of the proposed Williams Grove Water System Repair Project. Additionally, relevant institutions, including the North Coast Information Center (NCIC) and the Native American Heritage Commission (NAHC), were contacted and databases searched for information concerning cultural resources in the area that could be impacted by project work.

The NCIC suggests that the probability of locating cultural resources is moderate within the APE because archival records explain that previously recorded cultural sites in and around the two sites of the proposed project have not be relocated. The record search indicated the ethnographic village site, *tantanaiki bûndûn* ("many tan bark oak") was located northeast of the project sites; however, studies and other past attempts to relocate the village site have been unsuccessful.

Three past archaeological studies in or near the two sites of the proposed project have failed to locate significant cultural resources, especially those related to Native American land-use along the South Fork of the Eel River. Ethnographic data compiled by Baumhoff (1958) indicated that seventeen ethnographic village sites were located within Site 2 of the proposed project including *tantanaiki bûndûn*. Roscoe and Cardiff (1997) surveyed the reported location of *tantanaiki bûndûn* for a California Department of Transportation (CalTrans) road project. They were unsuccessful at locating the village site or archaeological deposits/features related to other historic land use in the area. Sampson (1983) conducted a survey and subsurface testing in Humboldt Redwoods SP for an erosion control project along the banks of the South Fork of the Eel River including Site 2. During Sampson's study, no evidence of any of the reported village sites, cultural deposits, or isolated artifacts was found over approximately eleven miles of the South Fork. The ethnographic village site of *todunni* ("water sings") was located about a quarter mile south of the proposed project. During a road slip-out project, attempts to relocate todunni, as well as other archaeological materials, were futile. Douglas (1980) presumed the site and any other archaeological deposits or features had washed away due to past flooding.

In addition to prehistoric archaeological resources previously recorded in the vicinity of the proposed project, historic archaeological resources are also present. Historic archaeological resources in the vicinity include high-cut stumps and a skid road associated with historic logging activities. These features are ubiquitous in the region and not considered significant resources in the context of Williams Grove.

Prehistoric/Ethnographic and Historic Archaeological Resources

Early archaeological and ethnographic data from previous studies in the region indicate the flat alluvial terraces along major drainages were prime areas for aboriginal settlements. Historic ethnographic studies document seventeen Native American village sites along the banks of the South Fork of the Eel River in Humboldt Redwoods SP. These areas were utilized historically as well, beginning with Euroamerican settlement in the mid to late 1800s and later, historic transportation systems, logging, commerce, and park development related to the CCC in the 1930s and 1940s.

Flooding along the South Fork of the Eel River has had a major impact on both the cultural and

natural histories of the area. Over the last one-hundred plus years, the region has been the subject of numerous major flood events (e.g.: 1937, 1955, and 1964). It is probable archaeological deposits and historic features have either been buried in deep alluvium, or washed away and destroyed, obliterating the archaeological record. Additionally, these floods have reshaped the topography, destroyed residences and towns, and resulted in abandonment, rebuilding, or relocation of facilities within the park unit (DPR 2001). The flood in 1964 was the largest and most destructive flood event to occur in Humboldt Redwoods SP. During the 1964 flood, water in the vicinity of the Site 2 reached thirty-five feet above ground level.

Historic Resources

The only historic features at the project sites are associated with the historic logging era. These features include high-cut stumps displaying the notches from springboards and segments of old roads.

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

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) As discussed in the Environmental Setting, Site 2 of the proposed project contains no historic resources because the flood that occurred in 1955 destroyed all CCC facilities built in the 1930s and 1940s. Additionally, the remaining logging road segments located in Site 1 would not be utilized for project activities and the high-cut stumps with springboard notches in Sites 1 and 2 would not be affected by project activities. Therefore, the Williams Grove Water System Repair Project would not cause a substantial adverse change in the significance of any historic resources. No impact.

b) DPR-approved cultural resources specialists conducted background literature reviews about the area, an archaeological survey of the ground surface, and subsurface testing to determine if significant archaeological resources were present at the two sites of the proposed project (Gruver 2008). Based on the review of pertinent literature regarding

existing conditions of cultural resources, one would expect archaeological sites to be located in the vicinity of the proposed project on alluvial terraces. The DPR-approved cultural resources specialists determined field methodologies for survey and subsurface testing primarily using ethnographic data citing the location of a former ethnographic village site (*tantanaiki bûndûn*) described by Baumhoff (1958) in the immediate area of the proposed project, as well as land-use patterns related to settlement, commerce, transportation corridors, and park unit development. The ground survey was conducted throughout the Area of Potential Effect (APE) and the subsurface testing was conducted along the South Fork of the Eel River within the Williams Grove Day Use and Group Camp areas located on alluvial terraces considered suitable for aboriginal utilization and historical settlement/development.

Like preceding archaeological investigations in the area, the results from Gruver's recent survey and subsurface testing (2008) failed to relocate *tantanaiki bûndûn* or new, previously undocumented, surface/subsurface prehistoric or historic archaeological deposits or features at the project site. Previous archaeological investigations documented the presence of alluvial sediments in terraces adjacent to the South Fork of the Eel River and during the subsurface testing for the proposed project, alluvial sediments up to ten feet (ft) in depth were recorded (Gruver 2008). The depth of the sediments suggest that flooding, which could bury and transport archaeological materials away from their original sites, is the primary cause of the scarcity of deposits and features at Site 2 of the proposed project along the South Fork of the Eel River. Therefore, any archaeological remains of former village sites and historic features likely would be meager and difficult to discern due to past catastrophic flooding in the park unit. Except for the presence of high-cut stumps and a skid road associated with historic logging activities, the presence of significant prehistoric or historic archaeological deposits would be unlikely in Site 1. The redwood canopy does not allow much light to penetrate, creating a rather inhospitable environment for any type of long term occupation. Additionally, the steep slopes are not conducive to expected land use patterns related to prehistoric or historic habitation and settlement.

Based on information from past archaeological investigations and recent surveys/subsurface testing (Gruver 2008), it is unlikely that significant archaeological deposits or features would be encountered during the proposed project; however because of the natural ambiguity of archaeological resources (often located below the surface) the full extent of cultural resources may not be known. Integration of **STANDARD PROJECT REQUIREMENT CULT-1, STAGING AND STORAGE AREAS** and **STANDARD PROJECT REQUIREMENT CULT-2, DISCOVERY OF PREVIOUSLY UNDOCUMENTED RESOURCES** (See Chapter 2) would reduce the potential impact to undocumented archaeological resources to a less than significant level.

Because subsurface testing within Site 2 was limited to auger testing, the full extent of the soil composition in the site was not fully documented in recent subsurface testing (Gruver 2008) or in previous archaeological investigations. Because of the unpredictability, intermittent, and erratic nature of flooding, there is the possibility that the sediment deposits at Site 2 are inconsistent in deposition and depth and a slight chance that areas with relatively shallow alluvial sediments covering archaeological deposits could occur at the project site. Integration of **STANDARD PROJECT REQUIREMENT**

CULT-3, ARCHAEOLOGICAL MONITORING and **SPECIFIC PROJECT REQUIREMENT CULT-4, GROUND DISTURBING ACTIVITIES IN SITE 2 (WILLIAMS GROVE DAY USE AND GROUP CAMP AREAS WEST OF AVENUE OF THE GIANTS)** (See Chapter 2) would reduce the potential impact to previously undocumented archaeological deposits and features within areas undergoing construction to a less than significant level.

c) Native American burials have not been documented in the vicinity of the proposed APE; however, extensive documentation indicates the ethnographic village of *tantanaiki bûndûn* was located within the vicinity of the project sites. A description of the village location places it on the east side of the South Fork of the Eel River immediately down stream from the confluence of Coon Creek. In addition to the village site, ethnographic information indicates intense utilization of land-use along major drainages in Humboldt County during anadromous fish runs. Because of past Native American utilization of the area, ground disturbing activities associated with the proposed project could inadvertently expose previously undocumented human remains. Integration of **STANDARD PROJECT REQUIREMENT CULT-5, HUMAN REMAINS** (See Chapter 2) into project design would reduce the potential impact of ground disturbing project activities on human remains to a less than significant level.

VI. GEOLOGY AND SOILS

ENVIRONMENTAL SETTING

Topography

Seismic activity and underlying, deeply-weathered marine sedimentary rocks have created steep slopes in the northern California Coast Range region. Steep slopes commonly exceed 50%, and due to their precipitous character, contribute to high rates of natural erosion (DPR 2001).

The proposed Williams Grove Water System Repair Project would take place at two sites located east of the South Fork of the Eel River (Appendix A: Figures 1 and 2). Site 1 is a water supply pipe alignment under Avenue of the Giants and a slope east of Avenue of the Giants, while Site 2 is the Williams Grove Day Use and Group Camp areas situated on an alluvial terrace west of Avenue of the Giants. The topography of Site 1 is comprised of a steep slope which rises east to an elevation of about 1,180 feet above sea level, while the topography of Site 2 is flat, with a gradient of less than 10% (DPR 2001) and is at an elevation of approximately 200 feet. Across the Eel River outside and to the west side of the project site, the slope rises from 200 feet to a peak at elevation of 2,080 feet (USGS 1969).

Geology

The rocks of the Franciscan Complex that occur in the Coast Range, including Humboldt Redwoods SP, form generally north-northwest to west-northwest trending belts. These belts of rock are younger to the west because they were progressively scraped off of the seafloor and attached to the North American continent as the Pacific Ocean seafloor was thrust under the North American plate. The Coastal Belt (Pliocene to Late Cretaceous) of the Franciscan Complex underlies most of the park unit. The weakly metamorphosed Central Belt rocks within the park unit consist of meta-sandstone, meta-argillite, and mélange (a matrix of clayey, sheared argillite and fine-grained sandstone). The Coastal Belt is further subdivided into tectono-stratigraphic terranes, which are defined by the complex relationships of their rock types, deformation characteristics, and topographic expression. The Yager terrane (approximately Eocene to Paleocene) underlies most of the park unit and has mostly rhythmically bedded argillite and arkosic sandstone rocks and locally contains fossil dinoflaggellates, spore and pollen. Within the park unit, most of this terrane unit has some degree of shearing (DPR 2001).

The proposed project lies within the Eel River basin, which is a mountainous area that has been uplifted (post-Miocene). The basin is underlain by a deformed, faulted, locally sheared, and partially metamorphosed accumulation of subducted continental margin deposits. About 99% of the bedrock underlying this basin is sedimentary and metasedimentary (Humboldt County n.d.).

Seismicity

Humboldt Redwoods SP is located in the northern Coast Range and is part of the Coast Ranges Geomorphic Province (USGS 2008a). This range was formed primarily from remnants of the Pacific Tectonic plate that were scraped off and uplifted after collision with the North American plate, under which the Pacific plate moves; the mountains were formed after millions of years of movement along with periodic changes in sea level. Seismicity in the region is

extremely high. The most seismically active area in the continental U.S., known as the Mendocino Triple Junction, occurs only ten miles from the park unit. Capable of a magnitude 9.0 earthquake, the Junction is the location where the Gorda tectonic plate collides with the Pacific and North American plates (DPR 2001). The plates slide against each other as they move in opposing directions as much as three inches per year often in the form of small earthquakes. In the 1990s, there were at least nine magnitude 6.0 earthquakes in the North Coast region, which was higher than any other decade in the past century. Because the Gorda plate is subducting beneath the North American plate, there is the potential for a large magnitude earthquake in the area known as the Cascadia subduction zone (NPS 2008). Humboldt Redwoods SP would be strongly affected by groundshaking generated by rupture of the Cascadia subduction zone (DPR 2001).

Active faults that have moved within the last 11,000 years and that could produce strong ground shaking in the park unit include the northern segment of the San Andreas fault, capable of a magnitude 7.9 earthquake; Maacama Fault which is capable of a magnitude 7.1 earthquake; and Little Salmon Fault which is capable of a magnitude 7.3 earthquake. Faults that are capable of producing earthquakes which could cause moderate to severe ground shaking within the project sites are listed in Table VI-1 along with the age of last movement and approximate distance from the project site.

Table VI-1: Faults Capable of Producing Moderate to Severe Earthquakes at the Project Sites

Fault Name	Approximate Distance Project Site (miles)	Maximum Moment Magnitude Earthquake	Recency of Fault Movement*
Little Salmon Fault Zone	34	7.3	Holocene
Goose Lake Fault Zone	25	6.8	Holocene
Maacama Fault Zone	50	7.1	Holocene
Mad River Fault Zone	45	7.1	Holocene
San Andreas Fault Zone	17	7.9	Holocene
Yager Fault	14	unknown	Holocene
Garberville Fault Zone	16	6.9	Late Quaternary
Lake Mountain Fault Zone	19	6.7	Late Quaternary
Mendocino Fault Zone	29	7.4	Late Quaternary
Russ Fault	23	unknown	Late Quaternary
Seaward edge of the Cascadian Subduction Zone	30	9.0	Late Quaternary
Whale Gulch-Bear Harbor Fault Zone	13	unknown	Late Quaternary
*Recency of fault movement: Holocene = 200 - 10,000 years; Late Quaternary = 10,000 – 700,000 years.			

(CDC 2008, DPR 2001, Jennings and Saucedo 1999, USGS 2006, Vaughn 2009a)

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was implemented to regulate development near active faults and to prevent construction of buildings for human occupancy on or near active faults (i.e., that have ruptured within the past 11,000 years). The designated zone extends from 200 to 500 feet on both sides of known active fault traces. Under the Act, no buildings intended for human occupancy may be constructed on or within fifty feet of an active fault trace (Humboldt County n.d.). The project sites are not located within an Alquist-Priolo Earthquake Fault Zone as designated by the California Geological Survey (Humboldt County n.d. and CGS 2007).

According to *Probabilistic Seismic Hazard Mapping*, approximate peak ground acceleration is between 30-50% in the general vicinity of the proposed project. The shaking hazard maps illustrate the level of ground motion that has one chance in 475 of being exceeded each year, which is equal to a 10% probability of being exceeded in a fifty year period (CGS 2008). The U.S. Geological Survey (USGS 2008b) puts the probability for ground motion in the vicinity of the proposed project between 40% and 60%.

Site 1 lies in an area that has been mapped as a high potential for coherent landsliding in the event of a Cascadia earthquake event (California Division of Mines and Geology 1995). Site 2 is situated on a fluvial terrace that has a moderate to low potential for liquefaction; however the terrace is also subject to higher intensity ground shaking because of the unconsolidated earth materials and its position in the basin, which will likely reinforce seismic energy (CDC 1995).

Soils

There are two soil map units in the project area including the Sproulish-Canoecreek-Redwohly complex (30-50% slopes in Site 1) and the Eelriver and Cottoneva (0-2% slopes occur in Site 2) (NRCS 2008).

Sproulish-Canoecreek-Redwohly complex (30-50% slopes):

This map unit is a complex of the Sproulish (50%), Canoecreek (20%) and Redwohly (15%) soil types and is associated with mountain slopes in the Coast Range north and west of Garberville. The parent material for the Sproulish and Canoecreek components is colluvium derived from sandstone and/or colluvium derived from mudstone and/or residuum. The parent material for the redwohly component is derived from residuum weathered from sandstone and/or residuum weathered from mudstone. Permeability is moderately slow to moderate and the available water capacity ranges from high for the Sproulish component to moderate for the Canoecreek component and low for the Redwohly component. Minor components of this soil type are Canoecreek and similar soils (5%), Gibsoncreek and similar soils (5%), Sproulish and similar soils (3%), and Redwoodhouse and similar soils (2%) (NRCS 2008).

Eelriver and Cottoneva soils (0-2% slopes):

This map unit is composed predominantly of Eelriver (45%) and Cottoneva (40%) soils and is associated with floodplains along the Eel, Van Duzen, and Mattole Rivers and their tributaries. The parent material for these soil types is alluvium derived from sedimentary rock. Permeability is moderate and the available water capacity is very high. Minor components of the Eelriver and Cottoneva soils, 0-2% slopes, are Psamments and similar soils (5%), Arlynda and similar soils (5%), Shivelyflat and similar soils (3%), and Pepperwood and similar soils (2%) (NRCS 2008).

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area, or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable, as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems, where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) As stated in the Environmental Setting, the proposed project lies within the Eel River basin, which is an uplifted, mountainous area underlain by deformed, faulted, locally sheared, and partially metamorphosed deposits.
   i) The proposed project is not located within an Alquist-Priolo Earthquake Fault Zone (Humboldt County n.d. and CGS 2007) and the closest active faults with movement between 200 and 10,000 years ago (Holocene epoch) include the Yager, Garberville,

and San Andreas which are respectively about fourteen, sixteen, and seventeen miles from the project site (Table VI-1). Additionally, the Whale Gulch-Bear Harbor Fault Zone, which had movement between 10,000 and 700,000 years ago (Late Quaternary period), is located approximately thirteen miles from the project sites (Table VI-1). No structures that are designed for human occupancy are located at the project sites and are not proposed as part of this project. In addition, the new water tanks in Site 1, which would be anchored to meet seismic restraint requirements, are not located near any structures designed for human occupancy. Therefore, there is no expected adverse effect on people or structures with regard to rupture of an earthquake fault as a result of this project. Integration of **SPECIFIC PROJECT REQUIREMENT GEO-1, POST-EARTHQUAKE INSPECTION** (See Chapter 2) would reduce the potential impact of damage to the water system from fault rupture to a less than significant level.

ii) As shown in the Table VI-1 in the Environmental Setting, there are seven active, or potentially active, faults within twenty-five miles of the proposed project and a total of twelve active, or potentially active, faults within fifty miles. The nearest faults to the sites are Whale Gulch Fault at thirteen miles, Yager Fault at fourteen miles, Garberville Fault Zone at sixteen miles, and the San Andreas Fault at seventeen miles. All twelve faults are capable of producing earthquakes which could cause moderate to severe ground shaking within the project sites (DPR 2001). USGS (2008b) puts the probability for ground motion in the vicinity of the project sites between 40% and 60%.

As part of the proposed project and to conform with seismic requirements, restraint clips would be embedded in the enlarged concrete pad for the water tanks and wire tension cables attached to the restraint clips would anchor the tanks to the pads. Incorporation of the tank stabilization restraint clips and tension cables, as well as integration of **SPECIFIC PROJECT REQUIREMENT GEO-1, POST-EARTHQUAKE INSPECTION** (See Chapter 2), into the project would reduce the potential impact from strong seismic ground shaking to people or structures to a less than significant level.

iii) Seismic-induced ground failure, such as liquefaction, usually occurs in unconsolidated granular soils that are water saturated. Some components of the project are located on alluvial soils that could become saturated due to proximity of the to the South Fork of the Eel River. During seismic-induced ground shaking, pore water pressure in the soil could increase in loose soils, causing the soils to change from a solid to a liquid state (liquefaction). There is a potential for liquefaction in Site 2 where existing leaky water pipes and valves are located, but the risk would not increase as a result of the proposed project. Replacement of the leaking components could lead to a decrease in soil saturation that promotes liquefaction during seismic-induced ground shaking. Placement of the water tanks in Site 1 upslope from alluvial soils that are prone to liquefaction, along with integration of **SPECIFIC PROJECT REQUIREMENT GEO-1, POST-EARTHQUAKE INSPECTION** (See Chapter 2) into the project, would reduce the potential risk of seismic-related ground failure, including liquefaction to people or structures to a less than significant level.

iv) As described in the Environmental Setting, the Site 1 has a high potential for coherent landslides in the event of an earthquake along the Cascadia Subduction Zone (CDMG

1995). A DPR Engineering Geologist conducted a scientific literature review and a site visit to evaluate the project sites for the potential of coherent landslide failure during a Cascadia-type event (Vaughn 2009b). Vaughn determined that a landslide at least 300 years old underlies Site 1 and there is no evidence of recent upslope displacement. As a result, Vaughn concluded that there is a low potential for catastrophic impact to the new tanks and concrete pad at Site 1 during an approximately 8.4 Cascadia earthquake. In addition, the new tanks would meet seismic requirements and **SPECIFIC PROJECT REQUIREMENT GEO-1, POST-EARTHQUAKE INSPECTION** (See Chapter 2) would be integrated into the project as stated above in Discussion (a)(ii). Project implementation would, therefore, decrease the potential for landsliding. Less than significant impact.

b) A temporary increase in soil erosion and sedimentation could occur during construction of the proposed project. Integration of **STANDARD PROJECT REQUIREMENT HYDRO-1, EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION** (See Chapter 2) would reduce the potential impact of erosion and sedimentation to a less than significant level.

c) Replacement of the water distribution pipe in Site 2 would be completed in soils that could be subject to liquefaction during seismic-induced ground shaking. Replacement of leaking pipes would not result in an increased risk for liquefaction above existing conditions. Replacing the existing leaky pipes could lead to a decrease in soil saturation that could enhance the potential for liquefaction during seismic-induced ground shaking. Site 1 is located on soils that are prone to landslides and erosion; however, incorporation of the tank stabilization restraint clips and tension cables into the project would reduce the potential for the water tanks to fail as a result of landslides. Less than significant impact.

d) Expansive soils are those soils that have high clay content that swell when wet and shrink when dry. Soils at the project site are predominantly gravelly loam and clay loam in Site 1 and silty loam and sandy loam in Site 2. These soils do not have high clay content, are therefore not expansive, and would not result in a substantial risk to life and property. No impact.

e) The project does not involve the installation any waste disposal systems, including but not limited to of a septic tanks and leach field. Therefore, there would be no impact to onsite soils from this project.

f) No known unique paleontological or geological resources are known to exist at the project sites. No impact.

VII. HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL SETTING

Hazardous Materials

The nearest hazardous materials cleanup site listed by the California Department of Toxic Substance (DTSC) Control is located approximately twenty-five miles north of the two sites of the proposed project near the town of Rio Dell (DTSC 2008). The types of materials used and stored in Humboldt Redwood SP that could be hazardous include fluids such as motor vehicle and mechanical equipment fuels, oils, and other lubricants. DPR maintains storage facilities for fuels and lubricants within the park unit. No storage facilities, or other structures or industrial sties that could contain hazardous materials are located at the sites of the proposed project.

Airports

Ten airports exist throughout Humboldt County (Hometown Locator 2008). Of these, Garberville Airport is about sixteen air miles south of the two sites of the proposed project and is the closest airport in the County to the sites (GAN 2008). The proposed project is not within an airport land use zone/plan, or within two miles of a public airport or private air strip.

Schools

The closest school, Agnes J. Johnson School (K-5), is located approximately three miles north of the two sites of the proposed project in the town of Weott (Humboldt County Office of Education 2008).

Fire

Humboldt Redwoods SP is designated as a State Responsibility Area for fire protection and the California Department of Forestry and Fire Prevention (CalFire) describes the fire hazard severity for the vicinity of the project as moderate (CalFire 2007). The Humboldt / Del Norte Unit of CalFire is responsible for fire protection in Humboldt Redwoods SP; the nearest CalFire Air Attack Base is located in Rohnerville, approximately twenty miles from Humboldt Redwoods SP. In addition, small volunteer fire stations along the Avenue of the Giants (SR 254) provide emergency services within the park unit. The closest volunteer fire stations to the project site are the Fruitland Volunteer Fire Company, Inc., approximately one mile south in Myers Flat, and the Weott Volunteer Fire Department, approximately five miles north in Weott (Fire Departments Net 2008).

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, substances, or waste into the	☐	☐	☒	☐

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

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) Construction activities associated with the proposed Williams Grove Water System Repair Project could require the use of certain hazardous materials, such as fuels, oils, lubricants or other fluids associated with the operation and maintenance of vehicles and equipment. Generally, these materials would be contained within vessels engineered for safe storage. Large quantities of these materials would not be stored at or transported to the project sites; however, spills, upsets, or other construction related accidents could result in an inadvertent release of fuel or other hazardous substances into the environment. Integration of **PROJECT REQUIREMENT HAZMAT-1, SPILL PREVENTION AND RESPONSE** and **PROJECT REQUIREMENT HYDRO-1, EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION** (See Chapter 2) would reduce the potential for adverse impacts from these incidents to a less than significant level.

b) During the project, hazardous substances could be released to the environment from construction related vehicle or equipment fluid spills or leaks. Integration of the **PROJECT REQUIREMENT HAZMAT-1** and **PROJECT REQUIREMENT HYDRO-1** (See Chapter 2) would reduce the risk to on-site workers, the public, and the environment to a less than significant level.

c) As noted in the Environmental Setting above, there are no schools within one-quarter mile of the project sites. No impact.

d) No part of Humboldt Redwoods SP is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5. No areas within the project sites are currently restricted or known to have hazardous materials present. No impact.

e, f) The project is not located within an airport land use zone/plan, within two miles of a public airport, or in the vicinity of a private air strip. Therefore, the project would not result in a safety hazard to people residing or working in the area. No impact.

g) Construction activities associated with the proposed project would occur at the project sites. As described in the Environmental Setting, access to and from the water tanks in Site 1 would be via an existing maintenance trail, U.S. Route 101, and/or by helicopter. Equipment delivery to the water tanks also could entail temporary lane closure of U.S. Route 101 to unload new tank components from trucks or a helicopter. Temporary lane closure of U.S. Route 101 could cause short term traffic delays on U.S. Route 101 adjacent to Site 1 (See Transportation and Traffic Section for further discussion). Temporary closure of one lane on U.S. Route 101 would not conflict with the emergency response plans for Humboldt County (County of Humboldt 2008) because any closures would be short term and temporary in nature. Therefore, the potential impact would be less than significant for hazards.

h) The project sites are within a forested portion of the park unit and are subject to dry and warm to hot conditions from late spring through autumn. Heavy equipment that could become hot with extended use would be in close proximity to flammable vegetation. Improperly outfitted exhaust systems or friction between metal parts and/or rocks could generate sparks, resulting in a fire. Integration of **PROJECT REQUIREMENT HAZMAT-2, WILDFIRE AVOIDANCE AND RESPONSE** (See Chapter 2) would reduce the potential for adverse impacts from wildfire to a less than significant level.

VIII. HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL SETTING

Humboldt Redwoods SP is within the Eel River Hydrologic Unit of the North Coast Hydrologic Region. Water quality in the park unit ranges from clear to very poor. The North Coast Regional Water Quality Control Board regulates water quality in the park unit. In 1998 the State of California listed the South Fork Eel River as "water quality limited" due to high sediment levels and elevated temperature (USEPA 1999).

Steep slopes and a high rate of natural erosion characterize the landforms within Humboldt Redwoods SP (DPR 2002). This relief, coupled with heavy winter rains is capable of producing extensive flooding events with large volumes of transported sediments. Many low lying areas of the park unit are subject to seasonal flooding and bank erosion, which is exacerbated by the tremendous quantities of sediment, generated primarily by logging and related road-building (USEPA 1999). The most devastating flood in recorded history struck Humboldt Redwoods SP in 1964 where flood levels were between ten and fourteen ft higher than the previous record in 1955 (USGS 1988-89).

The two sites of the proposed project are located in the Federal Emergency Management Agency (FEMA) Zone Designation "D" areas of undetermined, but possible, flood hazards (FEMA 1982). Site 1 is located under and on a slope between the Avenue of the Giants and U.S. Route 101 and contains the water tanks which were above the 1964 high flood line and have have no history of flooding (Correia 2008, DPR n.d.). A drainage ditch in Site 1 parallels Avenue of the Giants and an associated culvert crosses this road, draining water from Site 1 (east of the road) to Site 2 (west of the road). Additionally, a natural, intermittent drainage in Site 1 intersects the maintenance trail. Site 2 is located between the Avenue of the Giants (SR 254) and the South Fork of the Eel River and contains facilities are subject to inundation from infrequent floods such as the 1955 and 1964 flood events.

DPR obtains the water supply for Site 2 public facilties via a water intake at Coon Creek during the summer months and from a spring in the vicinity of the water tank area during the rest of the year. DPR would reduce the amount of water removed from the creek and spring for facility operation once leaking water system components have been replaced. In addition, installing a new filtration system would improve water quality and satisfy current regulatory requirements.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table	☐	☐	☐	☒

	level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?				
c)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f)	Substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place structures that would impede or redirect flood flows within a 100-year flood hazard area?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam?	☐	☐	☐	☒
j)	Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) While the proposed project does not contain a waste discharge component of any kind, it has a slight chance of causing surface water contamination from the release of sediment during excavation, directional drilling, grading, and other ground disturbing activities. In addition, use of the maintenance trail for project activities could temporarily increase release of sediment into the natural, intermittent drainage described above in the Environmental Setting. Other impacts to water quality could include releases of fuels or other fluids from project vehicles and equipment and construction materials. These releases could result in a violation of water quality standards and waste discharge requirements.

The proposed project would comply with all applicable water quality standards and waste discharge requirements. Along with **STANDARD PROJECT REQUIREMENT HAZMAT-1, SPILL PREVENTION AND RESPONSE** that would minimize the impact of vehicle or equipment fluid spills, integration of **STANDARD PROJECT REQUIREMENT HYDRO-1, EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION and STANDARD PROJECT REQUIREMENT HYDRO-2, WATER QUALITY PROTECTION** (See Chapter 2) would reduce the potential impact to water quality to a less than significant level.

b) As stated in the Environmental Setting above, the components of the existing water system are leaking. The proposed project would replace two leaking existing 20,000 gallon redwood storage tanks with four new 10,000 gallon HDPE tanks at the same location and would replace leaking supply and distribution pipes, valves, and associated equipment. The replacement of leaking equipment would reduce the amount of water DPR obtains from Coon Creek and the spring, and the proposed project does not increase the capacity of the water system or user demand for the water in Site 2; therefore the project would not substantially deplete groundwater supplies or interfere with groundwater recharge. No impact.

c) No existing drainages or drainage patterns would be substantially altered by the proposed project. New tanks would replace the leaking tanks, thereby decreasing the saturation of the slope and the associated risk of erosion that currently exists downhill of the tank area in Site 1. Any potential erosion or siltation caused by widening the maintenance trail and removal of small tree/sapling in Site 1 would be less than significant, provided that **STANDARD PROJECT REQUIREMENT HYDRO-1, EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION** (See Chapter 2) is integrated into the project.

d) The total area of soil disturbance of the proposed project in Sites 1 and 2, including staging and construction areas, would be less than one acre; therefore, a Storm Water Pollution Prevention Plan (SWPPP) is not required. Enlarging the concrete pads for the new water tanks in Site 1 could slightly increase surface area runoff; however, the project would not alter existing drainages or drainage patterns in a manner that would substantially increases the rate or amount of surface runoff, resulting in on- or off-site flooding. Integration of **STANDARD PROJECT REQUIREMENTS HYDRO-1, EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION** (See Chapter 2) would reduce any impact from surface area runoff to a less than significant level.

e) The proposed project would not create or contribute water runoff that would exceed the capacity of existing or planned stormwater drainage systems, such as the culvert that crosses under Avenue of the Giants or the drainage ditch in Site 1, or create substantial additional sources of polluted runoff. Integration of **STANDARD PROJECT REQUIREMENTS HAZMAT-1 AND HYDRO-1, EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION** (See Chapter 2) would reduce any potential impact to a less than significant level.

f) The slight chance that the project could result in contamination of surface water due to the potential release of sediments, vehicle or equipment fluids, or any construction materials, such as concrete, would be reduced to a less than significant level with integration of

STANDARD PROJECT REQUIREMENTS HAZMAT-1 AND HYDRO-1, EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION (See Chapter 2).

g) As described in the Environmental Setting, no part of the project sites is located within a FEMA-designated 100-year floodplain, nor does the project place housing in the 100-year floodplain. No impact.

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

i) The proposed project would not expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam. The project involves the replacement of existing structures that do not involve human occupation. No impact.

j) The project sites are not located in an area that would be inundated by either a seiche or a tsunami. The project proposes to replace two leaking water tanks with four new tanks without increasing the total water storage capacity, thus decreasing the saturation of the slope, which is an existing condition that could contribute to landslides. Therefore, the project would result in an overall decrease in potential hazards. No impact.

IX. LAND USE AND PLANNING

ENVIRONMENTAL SETTING

Humboldt County consists of approximately 2,290,000 acres (3,573 square miles). State and federal agencies, such as the National Park Service (NPS), U.S. Forest Service (USFS), U.S. Bureau of Land Management (BLM), and DPR, are responsible for managing over 630,000 acres which is approximately 28 percent of the total area within the County (Humboldt County 2009a). Additionally, tribal governments in Humboldt County govern a significant land area encompassing approximately 92,000 acres (Humboldt County 2009b).

Humboldt County classifies land within its boundaries for management, development, and expansion purposes and to effectively coordinate with other government agencies and the public on land use and planning issues. The County directly administrates land use and planning policies within its boundaries with the exception of State, federal, and Native American tribal lands. Sixteen areas containing most of the County's population and urban infrastructure are defined as urban Community Planning Areas (CPA) and formalized community plans constitute the general plan for each area (Humboldt County 2009c). The towns of Weott, Holmes, Stafford, Redcrest, Miranda, Myers Flat, and Phillipsville make up the Avenue of the Giants CPA; these towns are scattered along Avenue of the Giants (SR 254) and are surrounded by or in close proximity to Humboldt Redwoods SP (Humboldt County 2009a, 2009c).

The two sites of the proposed project are located within Humboldt Redwoods SP approximately one mile north of Myers Flat (Appendix A: Figures 1 and 2). Myers Flat is surrounded by Humboldt Redwoods SP, which is classified as public land by the County (Humboldt County 2000, 2009d). Myers Flat contains rural residential, commercial, industrial, public facilities, conservation floodway recreation, and timber land uses.

The DPR General Plan for Humboldt Redwoods SP (DPR 2001) states that the proposed project would be located in the Frontcountry Zone. The Frontcountry Zone consists of areas within the park unit that surround major roads and contain most park facilities such as the Visitor Center and easily accessible day use areas, overnight campgrounds, and trailheads. The management goal for the Frontcountry Zone is to balance public access and facility development with the primary need for protection and preservation of natural ecosystem elements and significant cultural resources (DPR 2001).

DPR General Plan guidelines related to the Recreational and Interpretive Facilities in the Frontcountry Zone and the Watershed Management sections state that DPR will attempt to minimize the use of hardened surfaces (e.g.: foundations and pavement) or reduce their impacts in the floodplain to avoid downstream and local flood effects (DPR 2001). The proposed project would expand the size of two existing 315 ft^2 concrete pads that each supports a 20,000 gallon redwood water storage tank in Site 1. DPR would expand the size of the pads by pouring cement around both to make a single concrete pad approximately 1320 ft^2 in total size. The pad would support four, new HDPE water storage tanks with a total combined capacity of 40,000 gallons. To conform to seismic standards, DPR would anchor the tanks to the pad with wire tension cables and seismic restraint clips embedded in the pad.

There are no Habitat Conservation Plans (HCPs) to protect specific plant and animal species that have been adopted for Humboldt Redwoods SP. However, private lands adjacent to Humboldt Redwoods SP that are managed by Humboldt Redwood Corporation are subject to an HCP formerly negotiated with the USFWS/NMFS and Pacific Lumber Corporation. This habitat-based multi-species HCP is a long-term comprehensive program that allows for commercial timber production while ensuring the continued health of the biological communities and the minimization and mitigation of impacts of company activities on individual species.

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

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) The two sites of the proposed Williams Grove Water System Repair Project are generally within the boundaries of Humboldt Redwoods SP, which is State public land classified for recreation and resources protection. The sites do not contain residential, commercial, or industrial infrastructure. A portion of the project within Site 1 involves installation of a water supply pipe under Avenue of the Giants (SR 254) using directional drilling. No portion of the proposed project would add barriers or elements that would divide or interfere with Myers Flat or any other established communities in the vicinity or along Avenue of the Giants. No impact.

b) As noted in the Environmental Setting and Discussion (a) above, the sites of the proposed project are located within Humboldt Redwoods SP. No project elements are in conflict with the Humboldt County General Plan, Avenue of the Giants CPA, zoning, or ordinances.

The DPR General Plan for Humboldt Redwoods SP states that DPR will attempt to minimize the use of hardened surfaces or reduce their impacts to avoid downstream and local flood effects (DPR 2001). The proposed project would approximately double the area

of hardened surfaces in Site 1 from a total of 630 ft^2 to 1,320 ft^2 to provide area on the pad for four water storage tanks and to embed seismic restraint clips that would be used with tension cables to anchor the tanks. The size of the expanded concrete pad is necessary to conform to seismic design standards, and therefore, safety requirements. The proposed project does not enlarge other existing or install new hardened surfaces in any other portion of the project sites. Less than significant impact.

c) As described in the Environmental Setting, private lands adjacent to Humboldt Redwoods SP that are managed by Humboldt Redwood Corporation are subject to an HCP that was negotiated with USFWS/NMFS and Pacific Lumber Corporation. DPR would construct the proposed Williams Grove Water System Repair Project on land within the park unit and owned by the State of California; no portion of the project would take place on lands protected by the HCP. No impact.

X. MINERAL RESOURCES

ENVIRONMENTAL SETTING

In the past, minerals such as copper, chromium, silver, zinc, and gold have been extracted locally from mines located in Humboldt County. Currently, little metallic mining takes place in Humboldt County and mineral resource production is primarily limited to in-stream mining of sand and gravel, as well as rock extraction from thirty-two active hard rock quarries. Approximately 75% of all sand and gravel extraction occurs within the Eel River-Van Duzen complex (Humboldt County Draft General Plan 2007).

The proposed project is located in Humboldt Redwoods SP between U.S. Route 101 and the South Fork of the Eel River, in a redwood forest. No significant mineral resources have been identified within the boundaries of the park unit and no known past mining activities have occurred at the two project sites. DPR policy does not permit the commercial extraction of mineral resources due to impacts to resources and in accordance with the Public Resources Code § 5001.65.

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

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

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

XI. NOISE

ENVIRONMENTAL SETTING

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

Noise is further described according to how it varies over time and whether the source of noise is moving or stationary. Background noise in a particular location gradually varies over the course of a 24-hour period with the addition and elimination of individual sounds. Several terms are used to describe noise and its effects. The equivalent sound level (L_{eq}) describes the average noise exposure level for a specific location during a specific time period, typically over the course of one hour. The Community Noise Equivalent Level (CNEL) is a twenty-four hour average of L_{eq} with an additional 5 dBA penalty for noise generated between the hours of 7:00 p.m. and 10:00 p.m. and a 10 dBA penalty during the hours of 10:00 p.m. and 7:00 a.m. the penalties account for how much more pronounced a noise is at night when other sounds have diminished. Federal, state, and local governments have defined noise and established standards to protect people from adverse health effects such as hearing loss and disruption of certain activities. Noise is defined in the California Noise Control Act, Health and Safety Code, California Code of Regulations (CCR) § 46,022 as excessive or undesirable sound made by people, motorized vehicles, boats, aircraft, industrial equipment, construction, and other objects.

To promote compatibility among various land uses and protect health and safety, Humboldt County sets noise standards for projects in certain land use categories and for sensitive receptors such as residential areas, hospitals, schools, libraries, and places of worship (Humboldt County 2008). Humboldt Redwoods SP is an Extensive Natural Recreation Area (ENRA) according to the County Land Use / Noise Compatibility Standards. The outdoor environment in an ENRA would be clearly acceptable and pleasant with CNEL noise levels up to 60 dBA, tolerable with levels from 61 to 75 dBA, normally unacceptable from 76 to 85, and clearly unacceptable above 85 dBA (Humboldt Count 2008).

Humboldt Redwoods SP is comprised of approximately 51,590 acres in the rural, southern interior of Humboldt County (DPR 2007). The park unit is known for its natural, quiet setting. Typical sounds include bird song, wind through the trees, and water running in rivers, such as the South Fork of the Eel River near the two sites of the proposed project, and in tributary streams. Throughout the year, out-of-town visitors and local residents are likely to be heard within the park unit particularly at the Visitor Center, along the numerous park trails, and in campgrounds and day use areas like those at Site 2. Motor vehicles traveling along U.S. Route 101 and Avenue of the Giants (SR 254) are also audible in Site 2. Avenue of the Giants runs immediately adjacent to both Sites 1 and 2 and U.S. Route 101 is approximately 800 linear feet upslope from Site 2.

The Visitor Center and park unit office are located along Avenue of the Giants about two miles north of the proposed project (Mappery 2008). Ten homes and one trailer pad for housing DPR personnel and their families are situated at the Visitor Center/park unit office area (Correia 2008). The closest private residences are situated along Avenue of the Giants in the town of Myers Flat approximately one mile south of the proposed project (Mappery 2008, Mapquest 2008).

Ten airports are located throughout Humboldt County (Hometown Locator 2008). Of these, Garberville Airport is about sixteen air miles south of the proposed project and is the closest airport in the County to the site of the proposed project. No public facilities with sensitive receptors (as defined above) are located in the vicinity of the project sites. The closest public facilities to the project sites are about three miles to the north and south in Weott and Miranda respectively, and include several churches and schools (Mapquest 2008).

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

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

(Bearden 2000)

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☒	☐
b) Generate or expose people to excessive groundborne vibrations or groundborne noise levels?	☐	☐	☒	☐
c) Create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project)?	☐	☐	☐	☒
d) Create a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project, in excess of noise levels existing without the project?	☐	☐	☒	☐

e) Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f) Be in the vicinity of a private airstrip? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) Trucks and heavy equipment such as a backhoe and directional drill would operate during materials delivery and construction activities associated with the proposed project. In addition, a helicopter could be used to place new water tanks and associated components in Site 1 at the concrete pad adjacent and below U.S. Route 101. The purpose of utilizing a helicopter to transport materials to Site 1 would be to avoid using large equipment to haul the water tanks up the vegetated slope in Site 1. Project-related noise levels in and adjacent to Sites 1 and 2 would fluctuate, depending on the type and number of vehicles and equipment in use at any given time.

   DPR would repair the water system outside of the peak summer visitation season and would close Site 2 to visitors during construction. Visitors and local residents driving past the project sites on Avenue of the Giants and U.S. Route 101, or recreating along the South Fork of the Eel River, could hear noises related to construction activities until they pass the sites. Depending on the specific project-related activities being performed, short-term increases in ambient noise levels could result in speech interference near the project sites and could annoy park visitors and local residents. Under these circumstances, park visitors and local residents could recreate in other portions of Humboldt Redwoods SP or seek out other nearby parks and recreation facilities.

   Generally, project-related work would not occur during on weekends or holidays when visitation is higher than during the week. Weekend work could be implemented, but only to accelerate the proposed project or address emergency or unforeseen circumstances. Noise associated with the proposed project is considered to have a potentially significant short-term impact to nearby noise-sensitive receptors. Integration of **STANDARD PROJECT REQUIREMENT NOISE-1, NOISE EXPOSURE** (See Chapter 2)for nose exposure would reduce potential impacts of the project to a less than significant level.

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

c) Once the water system is repaired and associated work are completed, project-related noises would cease. The project would not create any source of noise that would contribute to a substantial permanent increase in noise levels in the vicinity of the project areas. No impact.

d) See Discussion (a) and (c) above. Integration of **STANDARD PROJECT REQUIREMENT NOISE-1, NOISE EXPOSURE** (See Chapter 2) would reduce any potential impacts to a less than significant level.

e) The project is not located within an airport land use plan or within two miles of a public or public use airport. No impact.

f) The project is not located within two miles of any privately owned airstrip. No impact.

XII. POPULATION AND HOUSING

ENVIRONMENTAL SETTING

The sites of the proposed Williams Grove Water System Repair Project are located between the South Fork Eel River and U.S. Route 101 in Humboldt Redwoods SP (Appendix A: Figures 1 and 2). Many small towns are scattered throughout this rural area; however, the closest towns to the project sites are Myers Flat, about one mile south, and Weott, about five miles north (Mapquest 2008).

Population

Approximately 80% of the 2.3 million acres of the land in Humboldt County is forest, protected redwoods, and recreation areas (Humboldt County 2005). Much of the county is forested and/or rural, and contains small towns and cities primarily located along the U.S. Route 101 corridor. The California Department of Finance (DOF) estimates that 132,821 people reside in the County (DOF 2008). About 59% of the population resides in the Humboldt Bay area, where most growth has occurred, and an estimated 53% of residents live in unincorporated areas (Humboldt County 2004).

Myers Flat, the closest town to the project sites, has an estimated population of ninety-three people (LAFCO 2008). Garberville, approximately sixteen miles to the south, had an estimated population of 12,294 people during the year 2000 census (City-Data.com 2008). Census data for the town of Weott is unavailable.

Housing

There were an estimated 99 housing units in Myers Flat for 2008 (LAFCO 1999), 117 housing units in Weott in the year 2000, and 1,128 housing units in Garberville in the year 2000 (Housing Leaders 2005). Within the park unit, the Visitor Center and park unit office are located along Avenue of the Giants about two miles north of the project sites (Mappery 2008). Ten homes and one trailer pad for housing DPR personnel and their families are situated at the Visitor Center/park unit office area (Correia 2008). Overnight camping is permitted in the Group Camp at Williams Grove, but no permanent residential housing is located anywhere within or adjacent to the project site.

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

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

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a-c) As noted in the Environmental Setting above, no residential housing units are located within or adjacent to the project sites. The project does not have a housing component and all work would take place within the confines of the park unit boundary, with no additions or changes to existing local infrastructure. The project would neither modify nor displace any existing housing and would displace no people, either temporarily or permanently. All jobs created by the project would be tied to short-term construction related activities and would be temporary in nature. Visitation to the area is not expected to change as a result of the project. No impact.

XIII. PUBLIC SERVICES

ENVIRONMENTAL SETTING

Public services include fire and police protection, schools, parks, and other public facilities. Humboldt Redwoods SP extends along the U.S. Route 101 corridor from a point two miles south of the community of Phillipsville north to the community of Stafford (Appendix A: Figure 1). Williams Grove Water System Repair Project sites are located between South Fork of the Eel River and U.S. Route 101 (Appendix A: Figures 1 and 2). The project sites benefit from existing public services, such as fire and law enforcement protection.

Fire Protection

The California Department of Fire and Forestry Protection (CalFire) has primary jurisdiction for fire suppression in State Responsibility Areas (SRA), including units of the State Park System (CalFire 2007). DPR also cooperates with CalFire during prescribed burn activities within Humboldt Redwoods SP (CalFire 2005). The Humboldt / Del Norte Unit of CalFire is responsible for fire protection in Humboldt Redwoods SP and the nearest CalFire Air Attack Base is located in Rohnerville, approximately twenty miles from Humboldt Redwoods SP. In addition, small volunteer fire stations along the Avenue of the Giants (SR 254) are an integral part of emergency services within the park unit. The closest volunteer fire stations to the project sites are the Fruitland Volunteer Fire Company, Inc., approximately one mile south in Myers Flat, and the Weott Volunteer Fire Department, approximately five miles north in Weott (Fire Departments Net 2008).

Police Protection

DPR rangers assigned to Humboldt Redwoods SP are Peace Officer Standards and Training (POST) certified law enforcement officers and provide year round law enforcement within park unit boundaries. The Humboldt County Sheriff's Station in Garberville, about sixteen miles south of the proposed Williams Grove Water System Repair Project sites, serves local communities such as Garberville, Myers Flat, Miranda, Phillipsville, and Weott (Google Maps 2008, Humboldt County 2003). The Humboldt County Sheriff would assist DPR with any emergency and law enforcement issues within the boundaries of Humboldt Redwoods SP. The California Highway Patrol (CHP) serves as the primary law enforcement presence on interstates, state routes, and county roads. The CHP staffs a station in the town of Redway, just north of Garberville and approximately fifteen miles south of the sites of the proposed project (CHP 2009, Google Maps 2008). The CHP would provide assistance along public roadways in the vicinity of the park unit.

Schools

The closest school, Agnes J. Johnson School (K-5), is located approximately three miles north of the project sites in the town of Weott (Google Maps 2008, Humboldt County Office of Education 2008). No schools exist within the project site.

Parks and Other Public Facilities

Many parks and recreational facilities that serve local residents and visitors are located throughout Humboldt County. The Giant Redwoods RV and Camp is a private campground located in town of Myers Flat approximately one mile south of Williams Grove. St. Joseph

Hospital, an emergency medical facility, is located in the town of Rio Dell approximately twenty miles north of the project site.

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

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

This proposed project would repair the water system that serves the Williams Grove Group Camp and Day Use areas within Humboldt Redwoods SP.

a) Fire Protection: No components of the proposed Williams Grove Water System Repair Project would contribute to an increase of visitation and the level of required public services is expected to remain relatively static; however, use of construction equipment in the vicinity of flammable vegetation at the project sites could present an increased risk of fire that could result in additional demands on CalFire and local fire response teams. Any impact on services would be temporary and nothing in the project scope would contribute to the need for an increase in the level of fire protection after construction is complete. Integration of STANDARD **PROJECT REQUIREMENT HAZMAT-2, WILDFIRE AVOIDANCE AND RESPONSE** (See Chapter 2) would reduce the potential impact to fire protection services to a less than significant level.

   Police Protection: As noted in the Environmental Setting, DPR rangers with law enforcement authority patrol Humboldt Redwoods SP with emphasis on campgrounds and public use areas. DPR rangers have full law enforcement authority and only require assistance form local police as backup for unusual situations. No additional demands on rangers or local police are expected as a result of this project. No impact.

Parks and Other Public Facilities: There would be no impacts to schools, other parks, or other public facilities, as a result of the proposed project. The project would repair the water delivery system and associated facilities that support existing recreational services at Humboldt Redwoods SP. No impact.

XIV. RECREATION

ENVIRONMENTAL SETTING

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

Humboldt Redwoods SP is an approximately 51,590 acre park unit in southern Humboldt County that extends along the U.S. Route 101 corridor from a point two miles south of the community of Phillipsville north to the community of Stafford (Appendix A: Figure 1). The northern boundary of the park unit is approximately forty miles south of Eureka (Appendix A: Figure 1). Most of Humboldt Redwoods SP lies within the watershed of the South Fork of the Eel River and its tributaries.

The two Williams Grove Water System Repair Project sites are in the southern portion of the park unit approximately one mile north of the town of Myers Flat and about five miles south of the town of Weott and are located between the South Fork of the Eel River and U.S. Route 101 (Appendix A: Figures 1 and 2). Site 1 is a water supply pipe alignment under Avenue of the Giants and a slope east of Avenue of the Giants, while Site 2 is the Williams Grove Day Use and Group Camp areas situated on an alluvial terrace west of Avenue of the Giants.

Recreational Facilities at Humboldt Redwoods SP

Humboldt Redwoods SP provides numerous recreational facilities for visitors including three vehicular campgrounds; a horse camp; hike-in trail and environmental camps; a hike and bike campsite; picnic sites; parking areas; a visitor center; trails; river access sites for swimming, boating, and fishing; and a vehicle touring route (DPR 2001, DPR 2008a).

The Humboldt Redwoods SP Visitor Center is located adjacent to the park unit Headquarters, and Burlington Campground. It offers a wide variety of educational exhibits and activities, including a theater, displays, a bookstore, and the famous Kellogg Travel Log, which is a 1920s era motor home with a body carved entirely from one single redwood log (HRIA 2008).

Open Memorial Day to Labor Day, Site 2 of the proposed project (the Williams Grove Day Use and Group Camp areas) are located in a redwood forest. Site 2 contains two group camp sites, one that accommodates a maximum of forty people and the other a maximum of sixty people. The group camp sites are adjacent to each other and can be combined to accommodate a group of up to one hundred people. The camp sites have picnic tables, fire rings and flush toilets also serve the facility. The South Fork Eel River is adjacent to Site 2, providing opportunities for swimming or fishing. A summer bridge provides access to the extensive trail system on the west side of the river.

Recreational Activities at Humboldt Redwoods SP

There are over 100 miles of trails available for hiking, biking, and horse riding in Humboldt Redwoods SP (DPR 2008a). Trail access is available from day use facilities, park campgrounds, and numerous locations along the Avenue of the Giants with informal parking on widened road shoulders.

Water activities include swimming, boating, and catch and release fishing available at numerous locations within the park unit. Designated river access sites include High Rock Bar, Leatherwood Bar, Dyerville Overlook, Federation of Women's Clubs Grove, Gould Bar, Williams Grove, Nelson Bar, Lansdale Bar, and Alexander Grove (DPR 2008a). The South Fork of the Eel River is designated as a Wild and Scenic River by both the State of California and the federal government (Friends of the Eel River 2008; IWSRCC 2008). This designation is intended to preserve selected rivers in a free-flowing condition and to protect water quality.

Due to the scenic quality of the natural surroundings, auto touring is a popular visitor pastime in this part of the State. The Avenue of the Giants Auto Tour is a thirty-two mile, eight-stop excursion through the heart of Humboldt Redwoods SP (DPR 2008a) (Appendix A: Figure 1). The Tour passes through numerous "named redwood groves," including Williams Grove, the location of Sites 1 and 2.

Humboldt County Public Lands and Parks

Nearly 25% of Humboldt County's 2.3 million acres are public lands protected as open space, forests, and recreation areas (Humboldt County 2008). Federal, State, and County parklands in Humboldt County totaled 552,433 acres in 2002, including 76,131 acres of DPR parklands and 785 acres of Humboldt County parklands. Federal ownership (National Park Service, US Forest Service, and Bureau of Land Management) accounts for the majority of this acreage and most of these lands are located in the northern two thirds of the county (Humboldt County 2008). In southern Humboldt County (i.e. south of Eureka) DPR provides the majority of recreational opportunities, both in terms of public land acreage and visitor facilities. Recreational activities on these lands include saltwater and freshwater fishing, camping, hiking, hunting, off-road vehicle use, mountain biking, kayaking, canoeing, rafting, swimming, bird watching, and horseback riding. Developed facilities on these lands include trails, campgrounds, and primitive campsites.

County parklands in southern Humboldt County include the 20-acre Arthur W. Way County Memorial Park, the 2-acre Centerville County Park and Beach, the 10.5-acre Crab County Park, the 1.5-acre Field's Landing Boat Ramp, the 7-acre Freshwater County Park, the 34-acre Table Bluff County Park, the 9-acre Tooby Memorial County Park, and the 200-acre Van Duzen County Park. Recreational activities on these parklands include camping, hiking, picnicking, beachcombing, wildlife viewing, boat launching, fishing, and swimming. R.V. and tent camping is available at Arthur W. Way and Van Duzen County Parks.

Arthur W. Way County Park is the nearest county-operated recreational area to Humboldt Redwoods SP. It is located on the Mattole Road between Petrolia and Honeydew about 35 miles south of Ferndale. It is west of Humboldt Redwoods SP and about 15 road miles from the park unit boundary at Panther Gap.

The nearest State recreational land to Humboldt Redwoods SP is John B. Dewitt Redwoods State Reserve, which consists of the Holbrook and Whittemore Grove parcels. This park unit preserves old growth redwood forests. Located just north of the community of Redway, both groves provide access to the South Fork of the Eel River. Facilities are limited to informal parking along Redwood Drive and Briceland Thorne Road for the Holbrook and Whittemore Groves, respectively. Other units of the State Park System in southern Humboldt County

include Benbow Lake State Recreation Area (SRA), Richardson Grove SP, and Grizzly Creek Redwoods SP (DPR 2008a). All three of these park units offer hiking, picnicking, fishing, swimming, and camping opportunities. Benbow Lake SRA and Richardson Grove SP are located along the South Fork of the Eel River approximately eight and thirteen miles south of the southern boundary of Humboldt Redwoods SP, respectively. Grizzly Creek Redwoods SP is located along the Van Duzen River adjacent to SR 36, and is approximately 30 road miles from the northern end of the park unit at Stafford.

Private Recreational Facilities in southern Humboldt County

Private recreational facilities located in southern Humboldt County are shown in Table XIV-1 below.

Table XIV-1: Private Recreational Facilities in Southern Humboldt County

Name	Type	Location
Ancient Redwoods RV Park	recreational vehicle camping with hookups, river swimming	Avenue of the Giants, 1 mile north of Redcrest
Chandelier Drive-Thru Tree	ancient redwood drive through tree, hiking trails	Leggett
Dean Creek Resort	recreational vehicle camping with hookups, tent camping, mini golf, playground, river swimming	Redwood Drive in Redway
Giant Redwoods RV and Camp	recreational vehicle camping with hookups, tent camping, playground, hiking trails, river swimming	Avenue of the Giants, Myers Flat
Redwoods River Resort	recreational vehicle camping with hookups, tent camping hiking trails, river swimming	U.S. Route 101, 6 miles north of Leggett
Richardson Grove Campground & RV Park	recreational vehicle camping with hookups, tent camping, camping cabins	1 mile south of Richardson Grove State Park
River's Edge RV Park	recreational vehicle camping with hookups, fishing	Davis Street in Rio Dell
Riverwalk RV Park	recreational vehicle camping with hookups, tent camping, cabins	Riverwalk Dr. in Fortuna
Shrine Drive Through Tree	ancient redwood drive through tree	Avenue of the Giants, Myers Flat
Stafford RV Park	recreational vehicle camping with hookups, tent camping, cabins, playground	North Road in Scotia

(101 Things to Do 2008)

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

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) The proposed Williams Grove Water System Repair Project would replace most of the existing components in the water system serving the Williams Grove Day Use and Group Camp facilities and take place in Sites 1 and 2 as described in the environmental setting. Implementation of the project would necessitate the temporary closure of public facilities at Site 2, which could result in a slight increase demand for overnight camping facilities in the general area; however, construction would occur outside of the peak summer visitation season between Memorial Day in May and Labor Day in September. Less than significant impact.

b) The proposed project would replace the leaking water system serving the public facilities at Williams Grove and does not involve the expansion of existing or the construction of new recreational facilities. No impact.

XV. TRANSPORTATION / TRAFFIC

ENVIRONMENTAL SETTING

Humboldt Redwoods SP extends along the U.S. Route 101 corridor from Phillipsville north to the community of Stafford (Appendix A: Figure 1). The northern boundary of the park unit is approximately forty miles south of Eureka. Sites 1 and 2 of the proposed project are located approximately one mile north of the community of Myers Flat along Avenue of the Giants (SR 254), a thirty-two mile, two-lane scenic highway alternative to nearby U.S. Route 101, a four lane highway that serves as California's primary north-south coastal transportation corridor in this region (DPR 2001).

Humboldt County Transportation Systems

The Regional Transportation Plan for Humboldt County (HCAOG 2008) is organized by six transportation modes. These are: (a) Highway and Roadway Transportation System; (b) Public Transit Service System; (c) Bicycle and Pedestrian System; (d) Aviation System; (e) Goods Movement System; and (f) Tribal Transportation.

The Highway and Roadway Transportation System in Humboldt County has 378 miles of State highways, including U.S. Route 101, and 1,400 miles of city and county roads (HCAOG 2008, HCCDSD 2008). U.S. Route 101 and SR 299 are the major transportation roadways within the county.

The Public Transit Service System servicing Humboldt County is provided by Redwood Transit System and the Willow Creek RTS Extension Service; fixed route public transit services are provided by Eureka Transit Service, Arcata and Mad River Transit, Klamath/Trinity Non Emergency Transportation, and Blue Lake Rancheria Transit; and paratransit services are provided by City Ambulance, K-T Net, HTA, Blue Lake Rancheria Dial-A-Ride, the City of Fortuna, Humboldt Community Access and Resource Center, Bridgeville Community Center, and the Ferndale Senior Resource Agency (HCAOG 2008). Additional paratranist services are provided by various agencies and programs within the county (HCAOG 2008). Greyhound Lines, Inc. provides passenger bus service into Humboldt County, linking the County with the other North American destinations (Greyhound 2008). It operates a single station in Arcata, although passengers may make arrangements to be dropped off at unscheduled locations along the bus route.

The Bicycle and Pedestrian System Data is limited information from the 2000 Census regarding walking and cycling as transportation choices by Humboldt County residents. Less than 2% of these residents sixteen years or older used a bicycle for work-related trips. Other census data indicate that 6.5 % of Humboldt County residents 16 years or older walked to work (HCAOG 2008).

The County Aviation System consists of nine public use airports (HCAOG 2008). These are the Arcata-Eureka Airport, Dinsmore Airport, Garberville Airport, Kneeland Airport, Murray Field Airport, Rohnerville Airport, Eureka Municipal Airport, Shelter Cove Airport, and the Hoopa Airport (HCPWD 2008).

The Goods Movement System addresses how consumer goods are moved into, out of, and throughout the County. The primary mode is by truck, which connects to marine, air, and rail systems outside of the county through long-haul truck transport (HCAOG 2008). Currently there is no active rail transportation in the county since the closure of the Northwestern Pacific Railroad line in 1998.

Tribal Transportation is overseen by the Blue Lake Rancheria, Hoopa Tribe, Karuk Tribe of California, Trinidad Rancheria, and the Yurok Tribe Humboldt County tribes (HCAOG 2008). Only the Blue Lake Rancheria has a fixed-route service, which connects the Rancheria with several locations in the county such as Blue Lake and Arcata.

Roadways in Southern Humboldt County: Operating Conditions

The California Department of Transportation (CalTrans) is responsible for the design, maintenance, and management of the day-to-day operations of the State transportation system (Caltrans 2008a). CalTrans is made up of twelve districts including the North Coast known as District 1, which includes Del Norte, Humboldt, Lake, and Mendocino Counties. Maintenance and operation of U.S. Route 101 and Avenue of the Giants (SR 254) is the responsibility of CalTrans.

The annual average daily traffic (ADT) volume for U.S. Route 101 between Myers Flat and the Mattole Road (also known as South Fork Road) ranges from 5,900 to 6,400, and the peak month ADT volume ranges from 8,000 to 8,200, as reported for 2006 by Caltrans (2008b). Annual and peak month ADT volumes reported in 2006 for Avenue of the Giants between Myers Flat and Weott range from 540 to 590 and 1,100 to 1,500, respectively. The peak traffic months coincide with the summer travel season (HCCDSD 2008).

The quality of traffic operations is expressed in terms of Level of Service (LOS), a system developed by CalTrans to provide “a qualitative measure of operating conditions within a traffic stream, and their perception by motorists and/or passengers” (CalTrans 2008c). A LOS is generally defined in terms of such factors as speed, travel time, freedom to maneuver, comfort and convenience, and safety. A letter grade, A through F, representing progressively worsening traffic conditions is assigned to a roadway segment or an intersection. For example, LOS A represents ideal roadway conditions with no congestion or free flow, while LOS F corresponds to conditions of extreme congestion and delay.

The sections of U.S. Route 101 and Avenue of the Giants between Myers Flat and the Mattole Road are rated as either LOS A or B for average daily and peak month traffic operations (HCCDSD 2008). Roadways rated as LOS A or B are not congested and do not have traffic delays under normal operating conditions. Traffic flows are described as free to stable and traffic volumes are light to moderate in areas with ratings of LOS A or B. In areas such as Humboldt County, LOS C or better is generally considered an acceptable traffic operating condition (HCAOG 2008). Since LOS C provides for stable flows of traffic during peak conditions, the LOS ratings for the roadways within the project area exceed acceptable standards.

This project could result in the temporary closure of traffic lanes on U.S. Route 101 and/or Avenue of the Giants in order to offload construction vehicles, equipment, and/or materials associated with the proposed project. Vehicles, equipment, and/or materials would be

offloaded from trucks and/or a helicopter.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Cause a substantial increase in traffic, in relation to existing traffic and the capacity of the street system (i.e., a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☒	☐	☐
b) Exceed, individually or cumulatively, the level of service standards established by the county congestion management agency for designated roads or highways?	☐	☒	☐	☐
c) Cause a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Contain a design feature (e.g., sharp curves or a dangerous intersection) or incompatible uses (e.g., farm equipment) that would substantially increase hazards?	☐	☒	☐	☐
e) Result in inadequate emergency access?	☐	☒	☐	☐
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) U.S. Route 101 and the Avenue of the Giants are rated as LOS A or B, with no traffic delays and no congestion under normal operating conditions (HCCDSD 2008). Traffic flows with these ratings are described as free to stable and traffic volumes are light to moderate.

   Construction related personnel would arrive/depart and equipment and materials would be delivered by truck from Avenue of the Giants into Site 2. Access for construction personnel and equipment to and from Site 1 would be via an existing maintenance trail between Avenue of the Giants and the water tanks, U.S. Route 101, and/or by helicopter.

Construction vehicles such as trucks turning into the Site 2 from Avenue of the Giants could create temporary traffic delays along Avenue of the Giants. Equipment and materials delivery to the water tanks in Site 1 could entail temporary lane closure of U.S. Route 101 and traffic delays to unload new tank components from trucks or a helicopter.

DPR would obtain any necessary approvals for temporary lane closure from CalTrans prior to beginning project work and implementation of **MITIGATION MEASURE TRAFFIC-1**, **TRAFFIC CONTROLS** would reduce any potential increase in traffic delays and congestion that would result from the proposed project to a less than significant level.

MITIGATION MEASURE TRAFFIC-1: TRAFFIC CONTROL

- Prior to the start of construction, DPR and/or its Contractor will prepare a detailed Traffic Control Plan that will address traffic control methods during construction activities adjacent to U.S. Route 101 and Avenue of the Giants. Measures identified in the Traffic Control Plan will be implemented by DPR and/or its Contractor throughout the construction period and monitored by DPR. The plan will be approved in advance by Caltrans District 1 and conform to the requirements of the Caltrans issued encroachment permit. The Plan will include the following provisions:
  - Emergency vehicle access will be provided at all times. If lane closures occur, local fire and police departments will be notified of construction locations and alternative evacuation and emergency routes will be designed to maintain response times during construction periods, if necessary. Closure of traffic lanes will only occur during daylight hours.
  - Access will be maintained for private roads.
  - Roadway segments or intersections that are at or approaching LOS that exceed acceptable local standards will be identified.
  - A plan for construction-generated traffic to avoid daily peak periods, either by traveling different routes or by traveling at non-peak times.
  - Traffic control measures on busy highways will include flag persons wearing bright orange or red vests and using a “stop/slow” paddle to warn drivers. The Department of Transportation Permit Inspector could require additional traffic control signage or staging at their discretion. Measures will follow the Department of Transportation Standard Specification and Plans.
  - Provide adequate lead-time to transit providers for developing temporary service changes due to construction and providing notice of changes to the public.
  - Construction warning signs will be posted, in accordance with local standards or those set forth in the Manual on Uniform Traffic Control Devices (FHWA 2003), in advance of the construction area and at any intersection that provides access to the construction area.
  - Written notification will be provided to Caltrans and appropriate Contractors regarding appropriate routes to and from construction sites, and weight and speed limits for local roads used to access construction sites.
  - A sign will be posted at all active construction sites that give the name and telephone number or electronic mail address of a staff member for the lead agency, to contact with complaints regarding construction traffic. The area of the sign should be at least one square yard.

b) Construction activities are temporary in nature and the LOS ratings for U.S. Route 101 and Avenue of the Giants exceed acceptable standards established for Humboldt County (HCAOG 2008). Although the limited number of vehicle trips, individually or cumulatively, could potentially reduce the current LOS ratings for one or both of these roadways to LOS C, this rating is acceptable under standards established for Humboldt County; however, the delivery of construction materials and equipment and removal of old materials could lead to traffic delays and potentially require the temporary closure of traffic lanes on U.S. Route 101 and/or Avenue of the Giants for delivery of materials Site 1. Closure of traffic lanes would be less than one day in duration at any given time and limited to daylight hours. Implementation of the **MITIGATION MEASURE TRAFFIC-1**, **TRAFFIC CONTROLS**, in Discussion (a) above would reduce potential impacts to LOS standards to a less than significant level.

c) Sites 1 and 2 are not located within an airport land use plan and does not serve as a normal reporting point for air traffic in the area. The nearest airstrip is about fifteen miles from the project sites. No part of the proposed project would affect or change existing air traffic patterns. No impact.

d) During the construction period access to the project site would be limited to authorized DPR and construction personnel only. While construction activities could temporarily affect traffic flow and traffic patterns on area roadways and potentially create hazardous conditions, implementation of **MITIGATION MEASURE TRAFFIC-1**, **TRAFFIC CONTROLS** above would reduce this impact to a less than significant level.

e) While emergency access could be affected by project activities, implementation of **MITIGATION MEASURE TRAFFIC-1**, **TRAFFIC CONTROLS**, above would reduce this impact to a less than significant level.

f) Site 2 would be closed to the public during the project construction period. This project does not contain any design feature that would affect parking capacity. No impact.

g) Although this project could create temporary traffic delays for both public transportation and alternative transportation modes (e.g. bicycles), it would not conflict with adopted policies, plans, or programs that support alternative transportation. No impact.

XVI. UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL SETTING

The following utilities and service systems are available at Humboldt Redwoods SP for park visitors and DPR personnel. Most utilities and services within the park unit are concentrated at locations such as the Visitor Center and its public restrooms, day use areas and campgrounds, and at park residences. Public restrooms and outdoor water faucets are located at Site 2 (Williams Grove Day Use and Group Camp areas) of the proposed project.

Water

Humboldt Redwoods SP utilizes both ground and surface water to meet the various needs of the park unit. To supply water for Site 2, DPR collects water from Coon Creek or a nearby unnamed spring, depending upon the time of year, and stores the water in tanks on the slope east of Avenue of the Giants (Site 1). The water is then piped from the water tanks to the restrooms and outdoor faucets in Site 2.

Wastewater

The restroom facilities in Site 2 are not connected to any municipal wastewater services. DPR utilizes septic systems and leach fields located in Williams Grove Group Camp area for the treatment and removal of wastewater (Correia 2008).

Solid Waste

DPR park personnel collect trash waste from campgrounds, day use facilities, and park residences and transport it to large bins where it is removed. From Humboldt Redwoods SP, a disposal company transports and dumps the trash at Redway/Garberville Transfer Station located in Garberville (Correia 2008).

Other Service Systems

There is no phone service provided within Site 2. Pacific Gas and Electric Company (PG&E) provides electricity for Humboldt Redwoods SP facilities and is distributed throughout the park unit via both overhead and underground lines.

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

	facilities?				
	Would the construction of these facilities cause significant environmental effects?	☐	☐	☐	☒
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	☐	☐	☐	☒
e)	Result in a determination, by the wastewater treatment provider that serves or may serve the project, that it has adequate capacity to service the project's anticipated demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g)	Comply with federal, state, and local statutes and regulations as they relate to solid waste?	☐	☐	☐	☒

CRITERIA FOR DETERMINING SIGNIFICANCE

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

DISCUSSION

a) Humboldt Redwoods SP is in the jurisdiction of the North Coast Regional Water Quality Control Board (NCRWQCB, Region 1). The proposed project would be in compliance with all applicable water quality standards and waste discharge requirements (See **PROJECT REQUIREMENT HAZMAT-1: SPILL PREVENTION AND RESPONSE** in Chapter 2 regarding potential impact from accidents, spills, or upset.). No impact.

b) The proposed project would replace specified components of the existing water system within Site 2, with no direct impact (construction or expansion) on the Williams Grove drinking water or wastewater treatment facilities. Although the project would increase the efficiency of the water system, this increased efficiency would only serve existing recreational users and meet the existing operational needs for Site 2. Increasing the efficiency of the water delivery system would have no effect on the new water filtration system that will serve Site 2 as part of this project. No impact.

c) The proposed project does not include storm water drainage facilities and would not alter existing storm drain conditions. No impact.

d) As noted in the Environmental Setting above, water for Humboldt Redwoods SP is provided by surface and ground water. The water supply is adequate to meet existing demand. The proposed project does not include the construction of new facilities that would increase park visitation or demand for water. Overall water use is not expected to change as a result of this project. No impact.

e) As described in the Environmental Setting, DPR utilizes septic systems and leach fields for

the treatment and removal of wastewater from the public facilities in Site 2. DPR would not install wastewater facilities as part of the proposed project. During construction of the proposed project, a portable toilet could be needed for construction personnel when the water system is off line. Wastewater generated at the portable toilets would be contained in holding tanks and transported for disposal at approved offsite locations. No impact.

f,g) The project does not have a solid waste component and would not increase solid waste disposal needs for Humboldt Redwoods SP. Trucks provided by DPR and/or its Contractor would remove debris from project-related activities. No impact.

CHAPTER 4
MANDATORY FINDINGS OF SIGNIFICANCE

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

DISCUSSION

a) The proposed project was evaluated for potential significant adverse impacts to the natural environment and its plant and wildlife communities (Biological Resources, Hydrology and Water Quality). Sites 1 and 2 of the proposed project support certain special status animal species and natural communities. DPR has determined that the proposed project would have the potential to degrade the quality of the habitat and/or reduce the number or restrict the range of rare or endangered animals including marbled murrelet, Northern spotted owl, sensitive bat species, and potential nesting habitat for other raptors and migratory birds. The project also would have the potential to degrade water quality by causing erosion, sedimentation, and release of pollutants, such as vehicle fluids and elevated metal concentrations into the environment. However, full integration of all project requirements incorporated into this project would reduce those impacts, both individually and cumulatively, to a less than significant level.

b) The proposed project was evaluated for potential significant adverse impacts to the cultural resources of Humboldt Redwoods SP and its immediate environment. DPR has determined that proposed project activities would have the potential to cause significant adverse impacts to archaeological resources. Full implementation of the project requirements incorporated into this document would reduce impacts to previously unidentified archaeological sites and features to a less than significant level.

c) DPR often has other maintenance programs, restoration, and interpretive projects planned for a park unit. In May 2009, DPR completed a Notice of Exemption (NOE) for an Accessibility Modifications Project to improve access to American with Disabilities Act (ADA) standards for public facilities at the Williams Grove Day Use and Group Camp areas.

Under CEQA, a project is defined as the whole of an action which has the potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment (CCR § 15378(a), PRC § 21065). An agency generally is not permitted to 'segment' or 'piecemeal' a project into smaller parts if the effect is to avoid full disclosure of the environmental impacts of a project (or action). However, use of "independent utility" allows a lead agency to evaluate a small portion of a large project as a 'stand alone' project if the small project can be viewed as autonomous from the large project while still disclosing all environmental impacts. Using independent utility, DPR completed the NOE for the Accessibility Modifications Project prior to undertaking work described in Section 2.5 above for the Williams Grove Water System Repair Project. The Accessibility Modifications Project does not rely on components of the Williams Grove Water System Repair Project; therefore, no impact.

d) Most project-related environmental effects have been determined to pose a less than significant impact on humans. However, possible impacts from fugitive dust (Air Quality), earthquakes (Geology and Soils), construction accidents, spills, and wildfire (Hazards and Hazardous Waste), construction-generated noise (Noise), and traffic delays (Transportation and Traffic) though temporary in nature, have the potential to result in significant adverse effects on humans. These potential impacts would be reduced to a less than significant level if all project requirements are fully integrated into and mitigations measures incorporated for this project.

CHAPTER 5
SUMMARY OF PROJECT REQUIREMENTS AND MITIGATION MEASURES

DPR will implement the following project requirements and mitigation measures to reduce project impacts from the proposed Williams Grove Water System Repair Project.

AESTHETICS
No project requirements or mitigation measures are necessary.

AGRICULTURAL RESOURCES
No project requirements or mitigations measures are necessary.

AIR QUALITY
STANDARD PROJECT REQUIREMENT AIR-1: FUGITIVE DUST AND OZONE
- All construction areas (dirt/gravel roads and surrounding dirt/gravel area) will be watered at least twice daily during dry, dusty conditions.
- All trucks hauling soil, sand, or other loose materials on public roads will be covered or required to maintain at least two feet of freeboard.
- All construction-related equipment and engines will be maintained in proper tune (according to manufacturer's specifications), and in compliance with all State and federal requirements.
- Excavation and grading activities will be suspended if sustained winds exceed 25 miles mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads.
- Earth or other material that has been transported onto paved roadways by trucks, construction equipment, erosion, or other project-related activity will be promptly removed.

BIOLOGICAL RESOURCES
STANDARD PROJECT REQUIREMENT BIO-1: MARBLED MURRELET, NORTHERN SPOTTED OWL, NESTING MIGRATORY BIRDS AND RAPTORS, AND SENSITIVE BAT SPECIES
- All tree removal and construction activities which could result in disturbance to bat species during the bat breeding period or to nesting marbled murrelet, northern spotted owl, raptors, and migratory birds will occur during the non-breeding/maternity season (September 16 – January 31).
- No trees or snags ≥ 15 inches diameter at breast height (DBH) will be removed. Any trees or snags < 15 inches DBH proposed for removal will be inspected by a DPR-approved biologist to ensure that removal will not reduce the quality of the habitat or increase the potential for visual disturbance of marbled murrelet nest sites. No trees or snags, which provide suitable bat roosting habitat, as determined by a DPR-approved biologist, will be removed.

SPECIFIC PROJECT REQUIREMENT BIO-2: SENSITIVE NATURAL COMMUNITY
- Where possible, all trenching will occur outside of the root health zone (five times DBH) of any native tree ≥ 12 inches DBH. If trenching must occur within the root health zone, then no roots ≥ 2 inches in diameter will be severed by project activities, unless authorized by a DPR-approved biologist.

- A DPR-approved biologist will monitor all trenching operations and any work that requires vegetation removal.

STANDARD PROJECT REQUIREMENT BIO-3: SUDDEN OAK DEATH

- All project activities that could spread *Phytophthora ramorum* to new locations will be subject to Best Management Practices developed by the California Oak Mortality Task Force and available online at http://www.suddenoakdeath.org/html/best_management_practices.html

CULTURAL RESOURCES

STANDARD PROJECT REQUIREMENT CULT-1: STAGING AND STORAGE AREAS

- A DPR cultural resource specialist will review and authorize all vehicle and equipment staging and material storage sites other than staging/storage sites located on paved surfaces within Site 2 (Williams Grove Day Use and Camp areas).

STANDARD PROJECT REQUIREMENT CULT-2: DISCOVERY OF PREVIOUSLY UNDOCUMENTED RESOURCES

- In the event that previously unknown cultural resources (including but not limited to dark soil containing shellfish, bone, flaked stone, groundstone, or deposits of historic trash) are encountered during construction related activities by anyone, the State's Representative will put work on hold at that specific location and personnel will be redirected to other tasks. A DPR-approved cultural resources specialist will record and evaluate the finds and work with the State's Representative to implement avoidance, preservation, or recovery measures as appropriate prior to any work resuming at that specific location.

STANDARD PROJECT REQUIREMENT CULT-3: ARCHAEOLOGICAL MONITORING

- The DPR-approved cultural resources specialist assigned to the project will implement archaeological monitoring during ground disturbing construction activities at the project sites at his/her discretion. The DPR-approved cultural resources specialist will be notified by the State's Representative in a timely manner (a minimum of five days in advance) when DPR and/or its Contractor will conduct ground disturbing work in this area.

SPECIFIC PROJECT REQUIREMENT CULT-4: GROUND DISTURBING ACTIVITIES IN SITE 2 (WILLIAMS GROVE DAY USE AND GROUP CAMP AREAS WEST OF AVENUE OF THE GIANTS)

- Ground disturbing activities, including but not limited to trenching, in Site 2 (Williams Grove Day Use and Group Camp areas) will extend no deeper than six feet below the soil surface.

STANDARD PROJECT REQUIREMENT CULT-5: HUMAN REMAINS DISCOVERY

- In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil. The DPR sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (or Tribal Representative). If a Native American monitor is on-site at the time of the discovery, the monitor will be responsible for notifying the appropriate Native American authorities.

- The local County Coroner will make the determination of whether the human bone is of Native American origin. If the coroner determines the remains represent Native American interment, the NAHC in Sacramento and/or tribe will be consulted to identify the most likely descendants and appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination
- If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the Native American Heritage Commission/Tribal Cultural representatives will occur as necessary to define additional site mitigation or future restrictions.

GEOLOGY AND SOILS

SPECIFIC PROJECT REQUIREMENT GEO-1: POST EARTHQUAKE INSPECTION

- DPR will inspect the new water system components, including tanks, filtration system, pipes, and valves after large-magnitude earthquakes in the vicinity and maintain the system to prevent excessive leakage.

HAZARDS AND HAZARDOUS MATERIALS

STANDARD PROJECT REQUIREMENT HAZMAT-1: SPILL PREVENTION AND RESPONSE

- Prior to the start of construction, DPR and/or its Contractor will clean all equipment before entering the project site. During project implementation, equipment will be cleaned and repaired (other than emergency repairs) outside the project site boundaries. All contaminated water, sludge, spill residue, or other hazardous compounds will be contained and disposed of outside the boundaries of the site at a lawfully permitted or authorized destination.
- Prior to the start of construction, DPR and/or its Contractor will inspect all equipment for leaks and inspect equipment daily thereafter until it is removed from the project site.
- Prior to the start of construction, DPR and/or its Contractor will prepare a Spill Prevention and Response Plan (SPRP) to provide protection to on-site workers, the public, and the environment from accidental leaks or spills of vehicle fluids or other potential contaminants. This plan will include but not be limited to the following:
  - A map that delineates construction staging areas, and where refueling, lubrication, and maintenance of equipment will occur.
  - A list of items required in an on-site spill kit; spill kit will be maintained on-site throughout the life of the project.
  - Procedures for the proper storage, use, and disposal of any solvents or other chemicals used during the project.
  - Identification of lawfully permitted or authorized disposal destinations outside of the project site.
- In the event of any spill or release of any chemical in any physical form on or immediately adjacent to the project site or within Humboldt Redwoods SP during construction, DPR and/or its Contractor will immediately notify the State's Representative. Appropriate agencies will be notified immediately in the event of a significant spill.

STANDARD PROJECT REQUIREMENT HAZMAT-2: WILDFIRE AVOIDANCE AND RESPONSE

- The Contractor will develop and submit a Fire Safety Plan to DPR for approval prior to the start of construction. The plan will include the emergency calling procedures and response procedures for CalFire, the Fruitland Volunteer Fire Company, Inc., and the Weott Volunteer Fire Department that the Contractor will follow.
- Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers will be required for all heavy equipment.
- DPR and/or its Contractor will have approved (per Public Resources Code Section 4431) fire suppression equipment on site and in working order at all times welding, torch cutting, grinding or any other spark or flame generating activity is conducted. This equipment will be located within Code approved distance to the spark/flame generating work activity and readily accessible by workers conducting or observing the activity
- Construction crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, heavy equipment will be parked over asphalt or concrete to reduce the chance of fire.

HYDROLOGY AND WATER QUALITY

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

- Prior to the start of construction, DPR and/or its Contractor will prepare a Water Pollution Control Plan (WPCP) that identifies Best Management Practices (BMPs) to be used in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during excavation, grading, stockpile management, and any other ground disturbing activities.
- DPR and/or its Contractor will prepare a Monitoring and Spill Contingency Plan (MSCP) as part of the WPCP to prevent the release of drilling fluids to nearby water bodies during directional drilling for installation of the new water distribution pipe.
- DPR and/or its Contractor will avoid the creation of bare soil strips within the equipment/materials movement corridors between the water storage tanks and US Route 101.

STANDARD PROJECT REQUIREMENT HYDRO-2: WATER QUALITY PROTECTION

- DPR and/or its Contractor will install a DPR-approved, temporary crossing structure over the natural, intermittent drainage within Site 1 (on slope east of Avenue of the Giants) to reduce sedimentation by eliminating direct contact of vehicles and equipment with any water located in the drainage; DPR and/or its Contractor will remove the crossing once project related activities are completed.

LAND USE AND PLANNING

No project requirements or mitigations measures are necessary.

MINERAL RESOURCES

No project requirements or mitigations measures are necessary.

NOISE

PROJECT REQUIREMENT NOISE-1: NOISE EXPOSURE

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

POPULATION AND HOUSING

No project requirements or mitigations measures are necessary.

PUBLIC SERVICES

Refer to **STANDARD PROJECT REQUIREMENT HAZMAT-2: WILDFIRE AVOIDANCE AND RESPONSE**.

RECREATION

No project requirements or mitigations measures are necessary.

TRANSPORTATION / TRAFFIC

MITIGATION MEASURE TRAFFIC-1: TRAFFIC CONTROL

- Prior to the start of construction, DPR and/or its Contractor will prepare a detailed Traffic Control Plan that will address traffic control methods during construction activities adjacent to U.S. Route 101 and Avenue of the Giants. Measures identified in the Traffic Control Plan will be implemented by the Contractor throughout the construction period and monitored by DPR. The plan will be approved in advance by Caltrans District 1 and conform to the requirements of the Caltrans issued encroachment permit. The Plan will include the following provisions:
  - Emergency vehicle access will be provided at all times. If lane closures occur, local fire and police departments will be notified of construction locations and alternative evacuation and emergency routes will be designed to maintain response times during construction periods, if necessary. Closure of traffic lanes will only occur during daylight hours.
  - Access will be maintained for private roads.
  - Roadway segments or intersections that are at or approaching LOS that exceed acceptable local standards will be identified.
  - A plan for construction-generated traffic to avoid daily peak periods, either by traveling different routes or by traveling at non-peak times.
  - Traffic control measures on busy highways will include flag persons wearing bright orange or red vests and using a “stop/slow” paddle to warn drivers. The Department of Transportation Permit Inspector could require additional traffic control signage or staging at their discretion. Measures will follow the Department of Transportation Standard Specification and Plans.

- Provide adequate lead-time to transit providers for developing temporary service changes due to construction and providing notice of changes to the public.
- Construction warning signs will be posted, in accordance with local standards or those set forth in the Manual on Uniform Traffic Control Devices (FHWA 2003), in advance of the construction area and at any intersection that provides access to the construction area.
- Written notification will be provided to Caltrans and appropriate Contractors regarding appropriate routes to and from construction sites, and weight and speed limits for local roads used to access construction sites.
- A sign will be posted at all active construction sites that give the name and telephone number or electronic mail address of a staff member for the lead agency, to contact with complaints regarding construction traffic. The area of the sign should be at least one square yard.

UTILITIES AND SERVICE SYSTEMS

Refer to **STANDARD PROJECT REQUIREMENT HAZMAT-1**: **SPILL PREVENTION AND RESPONSE**.

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CHAPTER 6
REFERENCES

Chapter 2

California Department of Parks and Recreation (DPR). 2007. *California State Park System Statistical Report: 2006/07 Fiscal Year*. Planning Division: California Department of Parks and Recreation, Sacramento, CA.

_____. 2009. Attendance Database. Planning Division: California Department of Parks and Recreation, Sacramento, CA.

_____. 2009. *California State Parks Accessibility Guidelines*. http://www.parks.ca.gov/pages/21944/files/ca_stateparksaccessguiderev_titlepagewithdisclaimer.pdf (accessed June 30, 2009).

California Stormwater Quality Association (CSQA). 2003. *Stormwater Best Management Practices Construction Handbook*. http://www.cabmphandbooks.com/Construction.asp (accessed February 19, 2009).

U.S. Access Board. 2002. ADA Accessibility Guidelines for Recreation Facilities http://www.access-board.gov/recreation/final.htm (July 30, 2009)

Chapter 3

Aesthetics

California Department of Parks and Recreation (DPR). 2001. Humboldt Redwoods State Park General Plan (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

_____. 2007. *California State Park System Statistical Report: 2006/07 Fiscal Year*. Planning Division: California Department of Parks and Recreation, Sacramento, CA.

_____. 2008. Humboldt Redwoods State Park. http://www.parks.ca.gov/default.asp?page_id=425 (accessed February 3, 2008).

Humboldt County. 2008. General Plan Update (Planning Commission Hearing Draft): Chapter 10 Conservation and Open Space Element. http://co.humboldt.ca.us/gpu/documentsPlan.aspx (accessed November 26, 2008).

Mapquest. 2008. Search Myers Flat, California. http://www.mapquest.com/maps/main.adp?countrycode=ca&cid=mqca (accessed November 26, 2008).

US Fish and Wildlife Service (USFWS). 2007. National Wild and Scenic Rivers System: Eel River, California. http://www.rivers.gov/wsr-eel.html (accessed November 26, 2008).

Agriculture

California Department of Conservation (CDC). 2008. Williamson Act Program. website: http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx (accessed October 15,

2008).

California Department of Parks and Recreation (DPR). 2001. Humboldt Redwoods State Park General Plan (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

Humboldt County. 2008. General Plan Update (Planning Commission Hearing Draft): Chapter 4 Land Use Element. http://co.humboldt.ca.us/gpu/ documentsPlan.aspx (accessed November 26, 2008).

Humboldt County Department of Community Development Services (HCDCDS). 2003. Humboldt 2025 General Plan Update, Agricultural Resources and Policies. A Discussion Paper for Community Workshops. 87pp.

Martin, Roy. 2008. Environmental Scientist (DPR: Northern Service Center). Personal Communication with Laurie Archambault. March 17, 2008.

Air Quality

California Air Resources Board (CARB). 2007. Maps Available on this Website: Air Basin Static Maps. http://www.arb.ca.gov/maps/maps.htm (accessed December 1, 2008).

_____. 2008a. California Local Air District Directory. http://www.arb.ca.gov/ei/ maps/statemap/dismap.htm (accessed December 1, 2008).

_____. 2008b. Area Designation Maps/State and National. http://www.arb.ca.gov/desig /adm/adm.htm (accessed October 29, 2008).

_____. 2008c. The Know Zone. http://www.arb.ca.gov/knowzone/basin/basin.swf (accessed November 26, 2009).

California Department of Parks and Recreation (DPR). 2008. Humboldt Redwoods State Park. http://www.parks.ca.gov/ default.asp?page_id=425 (accessed November 26, 2008).

Humboldt County. 2008a. About Humboldt County: Climate. http://co.humboldt.ca.us/portal/about.asp (accessed December 1, 2008).

_____. 2008b. General Plan Update Background Reports: Natural Resources and Hazards Report. http://co.humboldt.ca.us/planning/gp/meetings/natl_res/ nr_report.asp (accessed October 29, 2008).

_____. 2008c. General Plan Update (Planning Commission Hearing Draft): Chapter 15 Air Quality Element. http://co.humboldt.ca.us/gpu/ documentsPlan.aspx (accessed November 26, 2008).

Jones & Stokes. 2007. Addressing Climate change in NEPA and CEQA Documents. http://www.climatechangefocusgroup.com/content/view/12/34/ (accessed June 2, 2008).

Mapquest. 2008. http://www.mapquest.com/maps/main.adp?countrycode =ca&cid=mqca (accessed November 26, 2008).

North Coast Unified Air Quality Management District (NCAQMD). 2008. http://www.ncuaqmd.org/index.php?page=general.info (accessed October 29, 2008).

US Environmental Protection Agency (USEPA). 2008a. Particulate Matter. http://www.epa.gov/air/particlepollution/basic.html (accessed October 29, 2009)

_____. 2008b. Green Book: Criteria Pollutants. http://www.epa.gov/oar/oaqps/greenbk/o3co.html (accessed October 29, 2008).

_____. 2008c. The Plain English Guide to the Clean Air Act. http://www.epa.gov/oar/oaqps/peg_caa/pegcaain.html#index (accessed October 29, 2008).

_____. 2008d. Glossary of Air Pollution Terms. http://www.arb.ca.gov/html/gloss.htm#F (accessed October 29, 2009).

_____. 2008e. Six Common Air Pollutants. http://www.epa.gov/air/urbanair/6poll.html (accessed October 29, 2008)

Biological Resources

Brigham, R. M., M. J. Vonhoff, R. M. R. Barclay, and J. C. Gwilliam. 1997. Roosting behavior and roost-site preferences of forest-dwelling California bats (*Myotis californicus*). J. Mammal. 78:1231-1239.

California Partners In Flight (*prepared by* Laymon, S. A). 1998. Yellow-billed Cuckoo (Coccycus americanus). In: *The Riparian Bird Conservation Plan:A Strategy for Reversing the Decline of Riparian-Associated Birds in California*. http://www.prbo.org/calpif/htmldocs/riparian.html (accessed February 25, 2009).

California Native Plant Society (CNPS). 2008. *Inventory of Rare and Endangered Plants* (7th Edition, electronic version). California Native Plant Society. Sacramento, CA. http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi/Html?item=checkbox_9.htm#q9 (accessed July 5, 2008).

California Oak Mortality Task Force (COMTF). 2008. California Oak Mortality Task Force. http://www.suddenoakdeath.org (accessed December 12, 2009).

Department of Fish and Game (DFG). 2007. Vegetation Classification and Mapping Program: List of California Vegetation Alliances. http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/NaturalCommunitiesList_Oct07.pdf (accessed July 5, 2008).

_____. (DFG). 2008. Rare Find: California Department of Fish and Game Natural Diversity Database. Version 3.1.0 (accessed May 16, 2008).

California Department of Parks and Recreation (DPR). 2001. Humboldt Redwoods State Park General Plan (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

Harris, S. W. 1991. *Northwestern California Birds*. Humboldt State University Press, Arcata, CA.

Hickman, J.C., ed. 1996. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, CA.

Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California.* California Department of Fish and Game, Rancho Cordova, CA.

Martin, R. W. 2007. Survey for federal jurisdictional wetlands and waters of the United States for Williams Grove Water System Repair Project in Humboldt Redwoods State Park (Conducted on June 26, 2007). California Department of Parks and Recreation, Sacramento, CA.

Save the Redwoods League. 2009. Save the Redwoods League: Coast Redwood http://www.savetheredwoods.org/education/coastredwood.shtml (accessed June 22, 2009).

Sawyer, J and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. CNPS Press, Sacramento, CA.

Shuford, W. D., and T. Gardali, editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento, CA.

Stebbins, R. C. 2003. *A Field Guide to Western Reptiles and Amphibians* (3rd edition). Houghton Mifflin Company, Boston, MA.

U. S. Fish and Wildlife Service (USFWS). 1997. Recovery Plan for the Threatened marbled murrelet *(Brachyramphus marmoratus)* in Washington, Oregon, and California. Region 1, U.S. Fish and Wildlife Service, Portland, Oregon.

_____. 2004. Endangered and Threatened Wildlife and Plants: 12-month Finding for a Petition to List the West Coast Distinct Population Segment of the Fisher (*Martes pennanti*); Proposed Rule. Federal Register 69:18769-18792.

_____. 2008a. Sacramento Fish & Wildlife Office: Endangered Species Program: Make a Species List or Letter. http://www.fws.gov/ sacramento/es/spp_lists/auto_list_form.cfm (accessed May 19, 2008).

_____. 2008b. Arcata Fish and Wildlife Office: Endangered Species Program, Plant and Animal Species Information. http://www.fws.gov/arcata/es/listedspecies.html (accessed July 22, 2008).

U.S. Geological Survey (USGS). 2008. USGS-NPS Vegetation Mapping Program: Standardized National Vegetation Classification System. http://biology.usgs.gov/npsveg/classification/toc.html (ccessed July 14, 2008).

_____. 2009. Habitat Conservation Planning and Incidental Take Permit Processing Handbook. http://www.fws.gov/Endangered/hcp/hcpbook.html (accessed July 16, 2009).

Cultural Resources

Baumhoff, M.A. 1958. California Athabascan Groups. *Anthropological Records* 16(5). University of California Press, Berkeley and Los Angeles, CA.

_____. 1963. Ecological Determinants of Aboriginal California Populations. *University of California Publications in American Archaeology and Ethnography* 49(2):155-236.

California Department of Parks and Recreation (DPR). 2001. Humboldt Redwoods State Park General Plan (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

_____. n.d. Humboldt Redwoods State Park Unit History (Volume. 1). Northern Service Center, California Department of Parks and Recreation, Sacramento, CA.

Chartkoff, J.L. and K.K. Chartkoff. 1975. Late Period Settlement of the Middle Klamath River of the northwest California. *American Antiquity* 40: 172-179.

Engbeck, J.H. 2002. *By the People, For the People: The Work of the Civilian Conservation Corps in California State Parks, 1933-1941*. California Department of Parks and Recreation, Sacramento, CA.

Goddard, P.E. 1903. Life and Culture of the Hupa. *University of California Publications in American Archaeology and Ethnology* 1:1-88.

Gruver, D. 2008a. PCR 5024 Review for the Williams Grove Water System and Tank Rehabilitation. California Department of Parks and Recreation, Sacramento, CA.

_____. 2008b. Archaeological Survey: Phase I Investigation for Humboldt Redwoods State Park Williams Grover Campground Water System and Tank Rehabilitation. California Department of Parks and Recreation, Sacramento, CA.

_____. 2008c. Extended Phase I Archaeological Investigation for the Williams Grove Campground Water System and Tank Rehabilitation Project. California Department of Parks and Recreation, Sacramento, CA.

Kroeber, A.L. 1976. *Handbook of the Indians of California.* Reprinted Dover Publications, Inc.

Originally published 1925, Bulletin No. 78, Bureau of American Ethnology, Smithsonian Institution, Washington D.C.

Newland, Ml. 2001. A Cultural Resources Study of the Historic-Period Roads and Trails of the Bull Creek Watershed, Humboldt Redwoods State Park, Humboldt County, California. Anthropological Studies Center, Sonoma State University, Rohnert Park, CA.

Rohde, J. and G. Rohde. 1992. *Humboldt Redwoods State Park: The Complete Guide*. Miles & Miles Publishers, Eureka CA.

Roland, C. 1983. Inventory of Features: Redwoods State Parks. California Department of Parks and Recreation, Sacramento, CA.

Sampson, M. 1983. An Archaeological Study along the South fork of the Eel River, Humboldt County, California. Cultural Resource Management Unit CDPR, California Department of Parks and Recreation, Sacramento, CA.

Swezy, S.L. and R.F. Heizer. 1997. Ritual management of salmonid fish resources in California. *Journal of California Anthropology* 4:7-29.

Geology and Soils

California Department of Conservation (CDC). 2008. Preliminary Open File Report 96-08. California Fault Parameters. Division of Mines and Geology. http://www.consrv.ca.gov/cgs/rghm/psha/ofr9608/Pages/b_faults5.aspx (accessed May 9, 2008).

California Department of Parks and Recreation (DPR). 2001. Humboldt Redwoods State Park General Plan (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

California Division of Mines and Geology (CDMG). 1995. Special Publication 115. Department of Conservation, Division of Mines and Geology, Sacramento, CA.

California Geological Survey (CGS). 2007. Alquist-Priolo Earthquake Fault Zones. California Department of Conservation. http://www.consrv.ca.gov/cgs/rghm/ap/map_index/Pages/index.aspx (accessed May 9, 2008).

_____. 2008. Probabilistic Seismic Hazards Mapping Ground Motion Page (selected site). http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamap.asp?Longitude=-123.835&Latitude=40.24 (accessed May 9, 2008).

Humboldt County. n.d. Natural Resource and Hazards Report: Background Report for the Humboldt County General Plan Update (Chapter 10 - Geologic, Seismic, and Soil Hazards) http://co.humboldt.ca.us/planning/gp/meetings/natl_res/nr_report.asp#download. (accessed May 9, 2008).

Jennings, C.W. and G.J. Saucedo. 1999. Simplified Fault Activity Map of California (California Geological Survey Map Sheet 54). Revised 2002 by Tousson Toppozada and David Branum.

National Parks Service (NPS). 2008. Redwood National and State Parks, Natural Features and Ecosystems, Geologic Setting. http://www.nps.gov/redw/naturescience/naturalfeaturesandecosystems.htm#CP_JUMP_64243 (accessed May 9, 2008).

Natural Resources Conservation Service (NRCS). 2008. Advance Copy of Draft Soil Map and Soil Type Descriptions for the Williams Grove Area in Humboldt County.

U.S. Geological Survey (USGS). 1969. Weott Quadrangle, California – Humboldt County 7.5 Minute Series Topographic Map.

_____. 2008a. Physiographic Provinces of California. http://education.usgs.gov/california/provinces.htm#coast (accessed May 9, 2008).

_____. 2008b. The National Map Viewer (selected site). http://nmviewogc.cr.usgs.gov/viewer.htm (accessed May 9, 2008).

U.S. Geological Survey and California Geological Survey (USGS and CGS). 2006. Quaternary Fault and Fold Database for the United States. http://earthquake.usgs.gov/regional/qfaults/ (accessed April 1, 2008).

Vaughn, P. 2009a. Engineering Geologist (DPR: North Coast Redwoods District). Personnal Communication with Heidi West and Laurie Archambault. April 28, 2009.

Vaughn, P. 2009b. Geological Review for Slope Stability of Proposed Water Tank Replacement, Williams Grove Day Use Area, Humboldt Redwoods State Park, Humboldt County, California. California Department of Parks and Recreation: North Coast Redwoods District, Weott, California.

Hazards and Hazardous Materials

California Department of Forestry and Fire Protection (CalFire). 2007. California Fire Hazard Severity Zone Map Update Project: Humboldt County. http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps.php (accessed July 8, 2008).

California Department of Toxic Substances Control (DTSC). 2007. Envirostor Database search for Humboldt County. http://www.envirostor.dtsc.ca.gov/public/ (accessed July 9, 2008).

Humboldt County. 2008. Sheriff's Department, Office of Emergency Services, Emergency Operations Plan, Humboldt Operations Unit. http://co.humboldt.ca.us/sheriff/OES/EOP/default.htm (accessed July 8).

Humboldt County Office of Education. 2008. Humboldt County Schools and Districts: Southern Humboldt County School District. http://www.humboldt.k12.ca.us/schdist/index.php (accessed June 9, 2008).

Fire Departments Net. 2008. Humboldt County Fire Departments. http://california.firedepartments.net/county/CA/HumboldtCounty.html (accessed June

10, 2008).

Global Aviation Navigator, Inc. (GAN). 2008. Airport Resource Center. http://www.globalair.com/airport/airportsearch.aspx (accessed June 9, 2008).

Hydrology and Water Quality

California Department of Parks and Recreation (DPR). n.d. Humboldt Redwoods State Park Unit History (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

_____. 2002. Final Environmental Impact Report including Comments and Responses for the Humboldt Redwoods State Park General Plan (Volume 2). California Department of Parks and Recreation, Sacramento, CA.

Correia, Douglas. 2008. State Park Maintenance Chief III (DPR: Humboldt Redwoods State Park). Personnal Communication with Diona Roja. August 21, 2008.

Federal Emergency Management Agency (FEMA). 1982. Floodplain Map Store. www.msc.fema.gov (accessed November 29, 2008).

U. S. Environmental Protection Agency (USEPA). 1999. South Fork Eel River Total Maximum Daily Loads for Sediment and Temperature.: http://www.epa.gov/region09/water/tmdl/eel/eel.pdf (accessed November 29, 2008.

U.S. Geological Survey. 1988-89. National Water Summary 1988-89: Hydrologic Events and Floods and Droughts *from* U.S. Geological Survey Water-Supply Paper 2375, 591 p.

Land Use and Planning

California Department of Parks and Recreation (DPR). 2001. Humboldt Redwoods State Park General Plan (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

Humboldt County. 2000. Humboldt County General Plan (Volume II): Communities of Avenue of the Giants Community Plan, Including the Communities of: Stafford, Pepperwood, Shively, Holmes, Larabee, Redcrest, Weott, Myers Flat, Miranda and Phillipsville (Adopted April 11, 2000). http://co.humboldt.ca.us/planning/Genplan/avenues/index.htm (accessed December 4, 2008).

_____. 2009a. General Plan Update (Planning Commission Hearing Draft): Chapter 4 Land Use Element. http://co.humboldt.ca.us/gpu/ documentsPlan.aspx (June 2, 2009).

_____. 2009b. County Assessor's Parcel Number Database. http://co.humboldt.ca.us/planning/maps/datainventory/metadata/apnhum38sp.htm (accessed July 23, 2009).

_____. 2009c. General Plan Update (Planning Commission Hearing Draft): Appendix C: Communty Area Plans Extract. http://co.humboldt.ca.us/gpu/ documentsPlan.aspx (June 2, 2009).

_____. 2009d. Humboldt County General Plan Update: Planning Commission Map Book (Myers Flat). http://co.humboldt.ca.us/gpu/documentsMaps.aspx (accessed June 2, 2009).

Mineral Resources

Humboldt County. 2007. General Plan Update (Preliminary Hearing Draft. March 15, 2007 Workshop). http://co.humboldt.ca.us/planning/gp/gpdemo/GPU-TOC-Demo3.htm#ch16 (accessed July 11, 2008).

Noise

Bearden, David M. 2000. Noise Abatement and Control: An Overview of Federal Standards and Regulations. http://ncseonline.org/NLE/CRSreports/Risk/rsk-52.cfm?&CFID=7463199&CFTOKEN=71822941 (accessed November 4, 2008).

California Department of Parks and Recreation (DPR). 2007. Statistical Report: 2006/07 Fiscal Year. Planning Division: California Department of Parks and Recreation, Sacramento, CA.

Correia, Douglas. 2008. Park Maintenance Chief III (DPR: North Coast Redwoods District). Personal Communication with Heidi West. December 2, 2008.

Hometown Locator. 2008. Humboldt County, California Airports. http://california.hometownlocator.com/features/cultural,class,airport,scfips,06023.cfm (accessed November 26, 2008).

Humboldt County. 2008. General Plan Update (Planning Commission Hearing Draft): Chapter 13 Noise Element. http://co.humboldt.ca.us/gpu/docs/HearingDraft/Part4Chapter13PlanningCommissionHearingDraftOne11-20-08.pdf (accessed November 26, 2008).

Mappery. 2008. Humboldt Redwoods State Park. http://mappery.com/map-name/Humboldt-Redwoods-State-Park (accessed November 26, 2008).

Mapquest. 2008. http://www.mapquest.com/maps/ main.adp?countrycode=ca&cid=mqca (accessed November 26, 2008).

Population and Housing

California Department of Finance (DOF). 2008. E-4 Population Estimates for Cities, Counties and the State, 2001-2008, with 2000 Benchmark. http://www.dof.ca.gov/research/demographic/reports/estimates/e-4_2001-07/ (accessed July 16, 2008).

California Department of Parks and Recreation (DPR). 2001. *Humboldt Redwoods State Park General Plan* (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

City-Data.com 2008. Garberville, California. http://www.city-data.com/city/Garberville-California.html (accessed July 17, 2008).

Housing Leaders. 2004. Weott Neighborhood Housing Data. http://www.housingleaders.com/census/California/Weott.html (accessed July 17, 2008).

Humboldt County. 2004. Humboldt County General Plan Housing Element (Approved December 16, 2003. Amended November 30, 2004) http://co.humboldt.ca.us/planning/gp/HE_default.asp (accessed July 16, 2008).

_____. 2005. About Humboldt County. http://co.humboldt.ca.us/portal/about.asp (accessed July 17, 2008).

Humboldt County Association of Governments (HCAOG). 2002. *Regional Housing Needs Plan for Humboldt County.* http://www.hcaog.net/ (accessed August 11, 2008).

Humboldt Local Agency Formation Commission (LAFCO). 1999. *Myers Flat Fire Prevention District, Sphere of Influence Report.* http://co.humboldt.ca.us/planning/lafco/Spheres/myersflt/cover.htm (accessed July 17, 2008).

Housing Leaders. 2008. Garberville Neighborhood Housing Data. http://www.housingleaders.com/census/California/Garberville.html (accessed July 17, 2008).

Public Services

California Department of Fire and Forestry Protection (CalFire). 2007. Nevada County Fire Hazard Severity Zone Map (State and Local Responsibility Areas). http://www.fire.ca.gov/fire_prevention/fhsz_maps/ fhsz_maps_nevada.php (accessed September 9, 2008).

_____. 2005. *Humboldt – Del Norte Unit: 2005 Fire Management Plan.* http://co.humboldt.ca.us/planning//fire_safe_council/local_fsc/CDF%20Fire%20Plan%2005.pdf (accessed December 4, 2008).

California Highway Patrol (CHP). 2009. CHP Northern Division. http://www.chp.ca.gov/depts_divs_offs/101.html (accessed May 27, 2009).

Google Maps. 2008. Search for fire, police, and school services closest to Humboldt Redwoods State Park. http://maps.google.com/ (accessed July 16, 2008).

Humboldt County. 2003. Sheriff's Office, County of Humboldt, CA: Garberville Station. http://co.humboldt.ca.us/sheriff/contentTemplate.asp?page=stations/garberville.htm (accessed May 27, 2009).

_____. 2008. Humboldt County General Plan as Amended by Resolution 98-116b (Adopted February 9, 1998). http://co.humboldt.ca.us/planning/Genplan/Framewk/index.htm (accessed December 4, 2008).

Recreation

101 Things to Do. 2008. 101 Things to Do Regional Visitor Publications (Online Edition:

Humboldt Count). http://101things.com/NewMagSite/Humboldt (accessed August 20, 2008).

California Department of Parks and Recreation (DPR). 2001. *Humboldt Redwoods State Park General Plan* (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

_____. 2008a. California State Parks Website. http://www.parks.ca.gov/parkindex (accessed July 24, 2008).

Friends of the Eel River. 2008. Homepage. http://www.eelriver.org (accessed August 18, 2008).

Humboldt County ~~Parks~~. 2008. About Humboldt County Parks. http://co.humboldt.ca.us/portal/living/county_parks (accessed August 13, 2008).

Humboldt County Community Development Services Department. 2008. Humboldt County General Plan Update: Natural Resources and Hazards Report. http://co.humboldt.ca.us/planning/gp/meetings/natl_res/08chapte.pdf (accessed August 19, 2008).

Humboldt Redwoods Interpretive Association. 2008. Humboldt Redwoods State Park. http://www.humboldtredwoods.org (accessed August 18, 2008).

Interagency Wild & Scenic Rivers Coordinating Council. 2008. National Wild and Scenic Rivers System. http://www.rivers.gov/wsr-eel.html (accessed August 18, 2008).

U.S.Forest Service (USFS). 2008. Tahoe National Forest. http://www.fs.fed.us/ r5/tahoe/ (accessed May 28, 2008).

Transportation / Traffic

California Department of Parks and Recreation (DPR). 2001. *Humboldt Redwoods State Park General Plan* (Volume 1). California Department of Parks and Recreation, Sacramento, CA.

California Department of Transportation (Caltrans). 2008a. California Department of Transportation (homepage).. http://www.dot.ca.gov (accessed December 2, 2008).

_____. 2008b. 2006 Traffic Volumes on California State Highways. http://traffic-counts.dot.ca.gov/2006TrafficVolumes.pdf (accessed December 2, 2008).

_____. 2008c. California 905: Appendix H. http://www.dot.ca.gov/dist11/news/route905/appendix/appendixH.pdf (accessed September 25, 2008).

Green Wheels HSU. 2008. Green Wheels Humboldt State University Club. http://www.green-wheels.org/node/447 (accessed December 4, 2008).

Greyhound Lines, Inc. 2008. Greyhound: Tickets. http://www.greyhound.com/home/ (accessed September 24, 2008).

Humboldt County~~Public Works Department~~. 2008. Division of Public Works: Aviation/Airports. http://co.humboldt.ca.us/aviation/content.asp?page=airport_and_airline_information.htm (accessed September 23, 2008).

Humboldt County Association of Governments (HCAOG). 2008. *2008 Humboldt County Regional Transportation Plan. Prepared by* Planwest Partners, Inc. http://www.green-wheels.org/node/409 (accessed September 11, 2008).

Humboldt County Community Development Services Department (HCCDSD). 2008. Humboldt 2025 General Plan Update: Moving Goods and People, A Discussion Paper for Community Workshops. *Prepared by* Dyett & Bhatia Urban and Regional Planners, October 2002. http://co.humboldt.ca.us/planning/gp/meetings/moving_gp/moving.pdf (accessed September 10, 2008).

Utilities and Services

Correia, Douglas. 2008. Park Maintenance Chief III (DPR: North Coast Redwoods District). Personal Communication with Steve Hilton. December 2, 2008.

Chapter 4

Remy, M.H., T.A. Thomas, J.G. Moose, and W.F. Manley. 2007. *Guide to CEQA (2006 [11th] Edition).* Solano Press Books, Point Arena, CA.

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APPENDIX A

MAPS

APPENDIX B

SPECIAL STATUS PLANTS

APPENDIX C

ACRONYMS