

**Water Improvement Project
Fort Ross State Historic Park
Mitigation Monitoring and Reporting Plan
February December 2004**

Mitigation Measure	Timing of Action	Responsible for Implementing Mitigations	Responsible for Mitigation Oversight	Verification and Implementation	
				Date Completed	Status / Comments
Air Quality					
All active construction areas will be watered at least twice daily during dry, dusty conditions. Any activities that cause visible dust plumes that cannot be controlled by watering will be suspended.	Construction Phase	Contractor	Project Manger, Construction Supervisor and/or Park Staff		
All trucks hauling soil, sand, or other loose materials will be covered or required to maintain at least two feet of freeboard.	Construction Phase	Contractor	Project Manger, Construction Supervisor and/or Park Staff		
All equipment engines will be maintained in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all State and federal requirements.	Construction Phase	Contractor	Project Manger, Construction Supervisor and/or Park Staff		
Excavation and grading activities will be suspended when sustained winds exceed 25 mph; instantaneous gusts exceed 35 mph. All access points to existing paved roads will be swept with water sweepers at completion of daily activities if visible soil material is deposited onto the adjoining roads.	Construction Phase	Contractor	Project Manger, Construction Supervisor and/or Park Staff		
Disturbed areas will be re-vegetated as quickly as feasible following completion of construction.		Contractor	Project Manger, Construction Supervisor and/or Park Staff		
Earth or other material that has been transported by trucking or earth moving equipment, erosion by water, or other means onto paved streets will be promptly removed.	Construction Phase	Contractor	Project Manger, Construction Supervisor and/or Park Staff		
Biological Resources					
Steelhead, Coho Salmon, Foothill Yellow-Legged Frog, and Northern Red-Legged Frog					
California Department of Fish and Game and National Marine Fisheries (NMFS) will be consulted to ensure that BMPs are sufficient to protect sensitive fish and frog species.	Prior to Construction	DPR	DPR Resource Ecologist		
Creek crossings during spring steelhead river entry and spawning (January to June) will be restricted in accordance with measures recommended by NOAA Fisheries (National Marine Fisheries Service - NMFS) and DFG. If seasonal avoidance is not possible, Additional protective measures could include, either: 1) a temporary creek crossing, such as large metal plates, will be installed at the upstream crossing to keep vehicles from driving across the creek bed, or 2) a biological monitor will be present during the times that project-related vehicles will be crossing Fort Ross Creek to watch for fish and frogs crossing in the creek crossing area. If a fish or frog is seen in the crossing area, vehicles will be prohibited from crossing the creek until the animal moves at least 50 feet up or down stream from the road crossing.	Construction Phase	DPR and Contractor	Project Manger, Resource Ecologist, Construction Supervisor and/or Park Staff		
<u>At the downstream crossing no motorized equipment would be allowed within the stream channel (defined as bed and bank). Workers could walk across the stream channel and if necessary, roll a wheelbarrow across the channel. A board would be placed over any areas with water, and workers would use the board to cross those areas.</u>	<u>Construction Phase</u>	<u>DPR and Contractor</u>	<u>Project Manger, Resource Ecologist, Construction Supervisor and/or Park Staff</u>		
<u>At both stream crossings no materials or equipment would be staged in the stream channel. All materials and equipment would be staged at least ten feet from the top of the stream bank.</u>	<u>Construction Phase</u>	<u>DPR and Contractor</u>	<u>Project Manger, Resource Ecologist, Construction Supervisor and/or Park Staff</u>		
A DPR-approved resource ecologist will conduct a training session for all project personnel prior to the start of construction. Instruction will cover identification of sensitive species and their habitat, and specific measures required to protect and avoid sensitive wildlife. Training will address general conservation measures, proper disposal and covering of trash and construction debris, and response to fluid spills. The training will be completed prior to authorizing personnel to work in the project area.	Construction Phase	DPR	DPR Resource Ecologist		
All open trenches will be covered or escape boards placed within the trenches at the end of each workday. A DPR-qualified resource ecologist will monitor trenches when filled in.	Construction Phase	Contractor and DPR	Project Manger, Resource Ecologist, Construction Supervisor and/or Park Staff		

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Construction activities will not occur during the breeding season for the northern spotted owl (February 1st – August 31st). The specific dates of the breeding season can be adjusted through consultations with USFWS based on the characteristics of the local population.		Contractor and DPR	Project Manger, Resource Ecologist, Construction Supervisor and/or Park Staff		
CNPS List 1B Plant Species					
Surveys will be conducted during the appropriate blooming months (or when species can be unmistakably identified) for all CNPS List 1B and List 2 plant species that can potentially occur within the project area.	Prior to Construction	DPR	DPR Resource Ecologist		
All occurrences of CNPS List 1B and List 2 species found within the project area will be mapped on project maps, flagged on the ground, and avoided if possible.	Prior to Construction	Contractor and DPR	DPR Resource Ecologist		
If significant unavoidable impacts will occur to CNPS List 1B or List 2 species as a result of project implementation, DPR will mitigate losses of habitat or individuals at a ratio of 3:1 through habitat enhancement for these species within the Fort Ross State Historic Park (or as negotiated with the California Department of Fish and Game).	Construction Phase	DPR	DPR Resource Ecologist		
Sensitive Natural Communities					
Within the structural root zone of any native tree with a dbh (diameter at breast height) of 24 inches or greater, no roots with a diameter of 1 inch or greater will be cut by trenching activities. In these areas, it will be permissible to tunnel under the structural root zone at a depth equal to or greater than 3 feet. It will also be permissible to remove soil by hand from roots that are larger than 1 inch in diameter.	Construction Phase	Contractor	Project Manger, Resource Ecologist, Construction Supervisor and/or Park Staff		
Cultural Resources					
The project's APE will be surface surveyed with periodic surface scrapes in areas where ground visibility is poor. The survey will occur prior to the start of construction and ground disturbance. If previously unrecorded sites are located during the survey, the project will be modified, in consultation with the DPR cultural specialist to avoid impacts to the site(s) or reduce potential impacts to a less than significant level.	Working Drawing Phase	Cultural Resources Project Manger	Cultural Resources Project Manger		
Prior to any below ground trenching, an Archaeologist that meets the Secretary of Interior's minimum qualification standards in historic archaeology will dig shovel test units along the proposed (new) tank siting and linear transects of the water line. If any cultural materials are discovered, the location of the tank site and pipe connections will be adjusted to avoid disturbing the sites. If there is no way to avoid impacting the site, then the site will be fully recorded and tested for significance prior to the excavation. Archaeological monitoring will occur during all ground disturbing activities.	Working Drawing Phase	Cultural Resources Project Manger	Cultural Resources Project Manger		
Treatment of human remains or burial sites (mitigation Cult-3): In the event that human remains are discovered, work will cease immediately in the area of the find and a DPR-qualified archaeologist will be notified, human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil.	Construction Phase	Archaeological Monitor	Project Manager, Cultural Resource Specialist and/or Park Staff		
Geology and Soils					
Seismic Building Requirements					
The proposed water tank must conform to earthquake design requirements. Tank and foundation design will follow the applicable regulations and design practices of the American Water Works Association Design Standards.	Working drawings & Construction	DPR Contractor or qualified DPR Engineer	DPR Construction Manager and/or Inspector		
Any new equipment installed as part of the water system treatment upgrades will be secured to the walls and/or floor in the existing water treatment building to prevent damage in the event of a large earthquake.	Working drawings and Construction	DPR Contractor or qualified DPR Engineer	DPR Construction Manager and/or Inspector		

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State Park staff will inspect the water supply system for damage as soon as feasible after a large earthquake.	post construction	DPR Staff or qualified DPR Engineer	DPR Staff or qualified DPR Engineer		
Erosion Control					
BMPs will be used in all areas to control soil and surface water runoff during excavation, grading, and trenching. Grading and excavation activities will not be planned during the rainy season (October 31 to May 1), but if storms are anticipated during construction or if construction must occur during winter months, "winterizing" will occur, including the covering (tarping) of any stockpiled soils and the use of temporary erosion control methods to protect disturbed soil. Temporary erosion control measures (BMPs) will be used during all soil disturbing activities and until all disturbed soil has been stabilized (re-compacted, re-vegetated, etc.) These BMPs will include, but not be limited to, the use of silt fences, straw bales, or straw or rice coir rolls, to prevent soil loss and siltation into nearby water bodies. <u>Temporary stream crossings or other measures will be utilized to protect Fort Ross Creek from siltation and potential impacts to aquatic organisms. Refer to Mitigation Measure Bio-1.</u>	Construction	DPR Contractor or qualified DPR Engineer	DPR Construction Manager and/or Inspector		
Permanent BMPs for erosion control will consist of properly compacting disturbed areas and re-vegetation of appropriate disturbed soil areas with native species using seed collected locally. Final design plans will incorporate BMP measures to be incorporated into the project.	Construction	DPR Contractor or qualified DPR Engineer	DPR Construction Manager and/or Inspector		
The project will meet or exceed all applicable local building and engineering regulations/ordinances required by Sonoma County.	Working drawings & Construction	DPR Contractor or qualified DPR Engineer	DPR Construction Manager and/or Inspector		
Engineering Design for Expansive Soils					
Engineering designs will be incorporated to provide a water tank foundation that is compatible with expansive or corrosive soils.	Working drawings & Construction	DPR Contractor or qualified DPR Engineer	DPR Construction Manager and/or Inspector		
Hazards and Hazardous Materials					
Spill Prevention					
All equipment will be inspected for leaks immediately prior to the start of construction, and regularly inspected thereafter until equipment is removed from park premises.	Construction	DPR Contractor	DPR Construction Manager and/or Inspector		
The contractor(s) and/or DPR will prepare an emergency Spill Prevention and Response Plan prior to the start of construction and maintain a spill kit on-site throughout the life of the project. This plan will include a map that delineates construction staging areas, where refueling, lubrication, and maintenance of equipment may occur. In the event of any spill or release of any chemical in any physical form at the project site or within the boundaries of Fort Ross SHP during construction, the contractor will immediately notify the appropriate DPR staff (e.g., project manager, supervisor, or State Representative).	Working drawings & Construction	DPR Contractor or qualified DPR Staff	DPR Construction Manager and/or Inspector		
Equipment will be cleaned and repaired (other than emergency repairs) outside the park boundaries. All contaminated water, sludge, spill residue, or other hazardous compounds will be disposed of outside park boundaries, at a lawfully permitted or authorized destination.	Construction	DPR Contractor and/or DPR Construction Supervisor	DPR Construction Manager and/or Inspector		

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A fire safety plan will be developed by the contractor and approved by DPR prior to the start of construction.	Working Drawings	DPR Contractor	DPR Construction Manager and/or Inspector		
Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers will be required for all heavy equipment.	Construction	DPR Contractor	DPR Construction Manager and/or Inspector		
Construction crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, heavy equipment will be parked over mineral soil, asphalt, or concrete to reduce the chance of fire.	Construction	DPR Contractor	DPR Construction Manager and/or Inspector		
Park staff will be required to have a State Park radio on site, which allows direct contact to California Department of Forestry and Fire Protection (CDF) and centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire.	Construction	DPR Staff	DPR Construction Manager and/or Inspector		
Fire suppression equipment will also be available and located on park grounds.	Construction	DPR Staff	DPR Construction Manager and/or Inspector		
Hydrology and Water Quality					
Water Quality					
Implementation of Mitigation Measure Geo 2 would provide BMPs to control erosion and runoff during the project construction and post-construction.	Working drawings and Construction	DPR Contractor	DPR Construction Manager and/or Inspector		
Any measures required by the Department of Fish and Game as part of the Streambed Alteration Agreement (1601 permit) for the planned rehabilitation construction of the above ground water line (two locations) across Fort Ross Creek will be implemented.	Construction	DPR Contractor	DPR Construction Manager and/or Inspector		
The project will comply with all applicable water quality standards as specified in the NCRWQCB Basin Plan.	Construction	DPR Contractor	DPR Construction Manager and/or Inspector		
Implementation of Mitigation Measure Hazmat 1 will mitigate for impacts to water quality from possible pollutants (fuels and other vehicle fluids) released from vehicles and heavy equipment during construction.	Construction	DPR Contractor	DPR Construction Manager and/or Inspector		
Water					
State Parks will continue to consult with CDFG and follow the conditions of the stream alteration agreement for water extracted from Fort Ross Creek.	Post-Construction	DPR District Staff	DPR District Staff		
The amount of water pumped will be determined by the water levels in the well and the amount of drawdown to prevent over pumping.	Post-Construction	DPR District Staff	DPR District Staff		
Noise					
Construction activities will generally be limited to the daylight hours, Monday - Friday. If work during weekends or holidays is required, no work will occur on those days before 7:30 am or after 8 p.m.	Construction Phase	Contractor	Project Manger, Construction Supervisor and/or Park Staff		
Internal combustion engines used for any purpose at the job site will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for construction will utilize the best available noise control techniques (e.g., engine enclosures, acoustically-attenuating shields or shrouds, intake silencers, ducts, etc.) whenever feasible and necessary.	Construction Phase	Contractor	Project Manger, Construction Supervisor and/or Park Staff		
Stationary noise sources and staging areas will be located as far from sensitive receptors as possible. If they must be located near sensitive receptors, stationary noise sources will be muffled to the extent feasible and/or, where practicable, enclosed within temporary sheds.	Construction Phase	Contractor	Project Manger, Construction Supervisor and/or Park Staff		