

FINDING OF NO SIGNIFICANT IMPACT

MUIR WOODS NATIONAL MONUMENT WATER/WASTEWATER SERVICE REHABILITATION PROJECT

National Park Service, U.S. Department of the Interior
Golden Gate National Recreation Area

May 2017

INTRODUCTION

This Finding of No Significant Impact (FONSI) has been prepared in accordance with the National Environmental Protection Act (NEPA), for the Muir Woods National Monument Water/Wastewater Service Rehabilitation Project (Project), Marin County, California. The Project location extends from the San Francisco Tourist Club (Tourist Club) in Mill Valley, Mount Tamalpais State Park, and Muir Woods National Monument (Monument), Marin County.

The FONSI combined with the Muir Woods National Monument Water/Wastewater Service Rehabilitation Project Final Environmental Assessment (Final EA) comprise the full and complete NEPA record of the analysis of environmental impacts and NPS decision-making process for selecting the Preferred Action Alternative for implementation. This FONSI also explains why the Preferred Action Alternative would result in no significant impacts to the environment as defined by the NEPA regulations (40 CFR parts 1500-1508) and NPS NEPA guidance in the 2015 Director's Order-12 (DO-12). Also, in keeping with 2006 Management Policies, the Determination of No Impairment (DNI) for the selected alternative was also prepared.

As stated in the Final EA, the project would rehabilitate and upgrade the Monument's current water and wastewater service infrastructure, and rehabilitate the telecommunications system.

PURPOSE, NEED, AND OBJECTIVES

The purpose of the project is to provide reliable water and wastewater services at Muir Woods to meet current codes for water and waste water collection services; to address fire flow demands, potable water quality issues, visitor and employee health and safety, and locating wastewater infrastructure out of the Redwood Creek corridor; and install telecommunications conduit parallel to the trenching for the new water and sewer lines. However, the actual telecommunications system upgrade and connections to buildings within the Monument would take place sometime in the future as a separate project.

This project is needed because the existing infrastructure is past its service life and is exhibiting signs of corrosion and structural deterioration; the water tank no longer meets code requirement for three day storage capacity for domestic potable water use and National Fire Protection Agency (NFPA) code requirements for fire storage; and both systems are requiring a high level of maintenance.

The portion of the existing wastewater collection system south of the visitor center is in close proximity to Redwood Creek, making it susceptible to erosion or scour from flood flows. Relocation of the sewer line would ensure it is a safe distance from Redwood Creek, and would safeguard public health and protect water quality important to sensitive natural resources, including Coho salmon, and steelhead trout.

Several sections of the sewer main are currently exposed having no cover over the piping. Nearly the entire gravity sewer main, situated adjacent to the lower parking area, is located within the channel migration and erosion hazard zone.

A successful project will achieve the following objectives:

Water Service (Water Line)	Wastewater (Sewer Line)
<p>Provide reliable, code compliant water system with most resilient fire protection and highest potable water quality.</p> <p>Rehabilitate and/or replace waterlines without the storage tank infrastructure to provide adequate fire flow demands.</p> <p>Reduce the amount of operation and maintenance by removing storage tank, which would eliminate the need for hand dosing disinfection requirements and time to perform flushing of water to maintain quality.</p> <p>Remove the need to flush significant quantities of water to maintain water quality.</p>	<p>Relocate sewer line infrastructure to provide sewer separation located at an environmentally safe distance from Redwood Creek to help safeguard public health and protect sensitive natural resources including Coho salmon, and steelhead trout.</p> <p>Maintain current sewer alignment within the developed area, including the visitor center and boardwalk, and avoid adding an additional lift station.</p> <p>Maintain current sewer alignment outside the developed area, but within proximity of areas scheduled for upcoming infrastructure with sewer facilities improvements.</p>

SELECTED ALTERNATIVE

The Selected Alternative is Alternative 2, the Preferred Action Alternative. The full and complete description of the selected alternative is the same as the Preferred Alternative in the Final EA and has not been modified based on public comment or agency consultation. A summary of this selected alternative is as follows:

Water Service (Water Line Replacement. See Figures 4, 5, pgs. 22, 23 in Final EA)

- Upgrade a deteriorating 2” water line with a new 8” water line that would connect to the Marin Municipal Water District (MMWD) system at the Tourist Club to supply separate domestic and fire water needs to the Monument.
- The new subsurface waterline would run downhill from the Tourist Club through Mount Tamalpais State Park along a more direct and shorter route than the existing line.
- Remove the existing 40,000 gallon water tank that has exceeded its life-cycle and no longer meets current domestic and fire code requirements.
- Replace the water tank with a 6” Pressure Reducing Valve (PRV) station (during construction, the water tank would remain in service to reduce system outages/shut downs) to reduce pressure from approximately 176 psi to 20 psi.
- Construct a 2” domestic service connection with NPS water meter at the paved access road below the former tank site. The domestic water main would be separated from the fire main at this point, with the existing 6” water main becoming a dedicated fire main.
- Install a disinfection pump in an existing shed near the historic Superintendent’s Residence.
- Establish a new easement for a new water line corridor coordinated with and Mount Tamalpais State Park and the Tourist Club.

Wastewater Service (Sewer Line Replacement. See Figure 6, pg. 27 in Final EA)

- Relocate aging sewer line infrastructure to protect Redwood Creek aquatic and riparian resources.
- Rehabilitate or replace manholes.
- Install new sewer main.
- Perform spot repairs to address pipe sags.
- Abandonment of existing sewer lines adjacent to creek.
- Install new sewer main located in same road corridor as water main. Provide new lateral connection to Lower Comfort Station.
- Installation of new sewer lines and manholes in the Monument's Annex Parking Lot to connect to the existing sewer infrastructure south of the Lot.
- Installation of new sewer lines adjacent to existing sewer line in the trail corridor between Muir Woods Road and the Main Parking Lot.

Telecommunications System Rehabilitation

During trenching and asphalt repairs for the water and wastewater rehabilitation activities, the project scope would include installation of new telecommunication conduits to the Maintenance Area, pull boxes, and cable parallel to the new sewer line; parallel to the new potable water line from the Superintendent's Residence to the Maintenance Area; no conduit would be installed through the Annex Lot to the lift station area nor along the boardwalk; and the installed conduit would terminate in a box at the exterior of each building due to receive telecommunications in a future project.

RANGE OF ALTERNATIVES CONSIDERED

The NPS analyzed two alternatives in detail.

- Alternative 1: No Action
- Alternative 2: Water and Wastewater Rehabilitation and Replacement (Preferred)

Alternative 1. No Action Alternative

The existing conditions and management of the water and wastewater service include the current underground water and wastewater pipe and alignment, related infrastructure, and existing storage, collection, and distribution systems. Under Alternative 1, the only source of potable and fire water to the Monument would continue to flow through the 60+ year old steel 1.5-inch diameter pipe. No new infrastructure would be installed nor would any existing infrastructure be removed. The existing fire storage code-deficient steel water tank would remain in service. However, it would eventually need to be decommissioned as the effects of hand dosing with chlorine is causing the steel to rust and deteriorate, and resulting in the loss of fire protection in the Monument as the 1.5" steel line cannot provide fire flows on its own.

Alternative 2. Preferred Water Service Alternative

Eliminate an old and poorly functioning system, reduce operation and maintenance costs, reduce disinfection requirements, and eliminate the need to flush significant quantities of water to maintain water quality, the existing water tank would be removed; a new 6" domestic service line would be installed in a new alignment from the MMWD at the Tourist Club; and replace the existing 2" line on private and state park lands (within a new easement) to connect to an existing 6" water main downhill in the Monument. A dedicated fire water line would be separated from the domestic water main at the administrative road below the tank site. An existing shed below the historic Superintendent's Residence, adjacent to other Maintenance storage buildings, would be rehabilitated to use as a disinfection pump house.

Alternative 2. Preferred Wastewater Service Alternative

Eliminate old and poorly functioning components, part of the current sewer line infrastructure would be replaced and relocated farther from Redwood Creek to help safeguard public health and protect sensitive natural resources including Coho salmon and steelhead trout. Other sections would be rehabilitated or replaced. The actions include, but are not limited to pipe bursting existing 6" lines to install new 8" lines; replace or rehabilitate manholes, abandon in place existing gravity sewer main downstream of visitor's center to entry plaza comfort station; install a new lateral connection to Lower Comfort Station; install a new sewer main to connect to Lift Station #1; and install a new lateral connection to existing NPS Maintenance buildings and residence.

Alternative 2. Telecommunications Conduit

During trenching and asphalt repairs for the new water and wastewater systems, the project scope would also include installing telecommunication conduits, pull boxes, and cable.

Alternatives Considered and Rejected from Detailed Analysis

The Final EA considered several other alternatives for water and wastewater rehabilitation, but were not carried through for full analysis:

Water Engineering Option 1

Remove and replace the existing 40,000 gallon water tank with a 60,000 gallon tank.

Option 1 would require geotechnical improvements at the existing tank pad to address slope stability; a new tank would require a disinfection and recirculation system, including a water level measurement system; construct an 8" fire main from the new tank outlet; construct 2" domestic main from new tank outlet for all domestic water services; extend the fire main approximately 500 feet from the existing end fire hydrant to maintenance building; separate all domestic water services from the 6" fire main and maintain minimum horizontal separation requirements between new domestic main and sewer mains; there is no electrical service at the tank site and no safe access for chemical delivery; and for improved life safety, the NPS Fire Marshal and Marin County Fire officials prefer a municipal supply fire service without depending on a limited storage tank. It was determined that these and additional construction elements would significantly increase the project cost compared to the preferred alternative and was, therefore, dismissed from further consideration.

Water Engineering Option 3

Rehabilitate the existing water tank for non-potable fire storage and retain single water service connection from the MMWD to meet both domestic potable and fire flow water needs.

Option 3 is a hybrid of Options 1 and 2. It retains the existing 40,000 gallon water tank to meet non-potable fire storage volume requirements, currently estimated at 30,000 gallons. Option 3 separates the domestic system from the fire system immediately upstream of the 40,000 gallon tank, so that potable domestic water would not flow through the tank. This would help address existing water quality concerns and would not require a separate fire service connection from MMWD or construction of a large diameter water main from the MMWD service meter down to the tank site.

Water Engineering Option 3 would include, but would not be limited to, the following elements:

- Construct new 2" domestic main down hillside in easement to existing tank site to replace existing 2" galvanized steel main.
- Rehabilitate existing 40,000 gallon steel water storage tank and altitude valve. Rehabilitation would include corrosion repair, recoating tank interior and exterior, and cathodic protection, which may require electrical power service to the tank site.

- Construct tank water level measurement system.
- Repair or replace the pressure reducing valve and pressure relief valve at tank site to reduce pressures from approximately 180-190 psi and replace related piping and valves.
- Construct a 2" domestic main from tank bypass to all domestic water services. Separate all domestic water services from the 6" fire main since it would now be as a non-potable, dedicated fire main. Maintain minimum horizontal separation requirements between new domestic main and sewer mains.
- Extend a 6" fire main approximately 500 feet from the existing end of the fire hydrant to maintenance building using 8" HDPE.

Water Engineering Option 3 was dismissed from further consideration because the NPS Fire Marshal and Marin County Fire officials prefer a municipal supply fire service for improved life safety without depending on a limited storage tank.

Wastewater Engineering Option Zone 1B

Re-route section of sewer main identified in the Redwood Creek high risk zone. New sewer main would be located in the same road corridor as water main. New lateral connections would be provided to each facility, including a lift station near the upper comfort station where a connection cannot be achieved through gravity flow. Option Zone 1B includes, but is not limited to, the following elements:

- Install lift station near upper comfort station with short force main.
- Install approximately 7 manholes.
- Install approximately 472 linear feet of 8" PVC gravity sewer main.
- Maximum bury depths of approximately 10 feet in the main road above the NPS Administrative / Concessions building.
- Abandonment in place of existing gravity sewer main except portions used for lift station overflow.

Wastewater Engineering Option Zone 1B was dismissed from further consideration for the following reasons:

- Although Option Zone 1B lies outside the Redwood Creek migration zone, it would substantially increase the cost of improvements compared with Option Zone 1A (Preferred Wastewater Zone Option selected for Alternative 2) because there is more trenching, deeper manholes, and additional capital expense and life cycle costs associated with operating and maintaining a lift station. It would also increase the risk of Sewer System Overflow (SSO) from lift station failures.

Wastewater Engineering Option Zone 3A

A new sewer main would be installed through the lower parking lot to reduce excavation depths then routed back to Muir Woods Road corridor to Lift Station #1. This option would provide a new lateral connection to existing NPS Maintenance building and residence. It includes, but is not limited to, the following elements:

- Install approximately 9 manholes.
- Install approximately 1,106 linear feet of 8" PVC gravity sewer main.
- Maximum bury depths of approximately 15 feet in Muir Woods Road downstream of the lower parking lot.
- Abandonment in place of existing gravity sewer main.

Wastewater Engineering Option Zone 3A was dismissed for the following reasons:

- Although this option lies outside of a wetlands area, it does not support the Monument’s transportation program.
- It would not accommodate plans for a future comfort station located in the nursery parking lot area.
- It would significantly disrupt traffic during construction
- Would include 15 foot deep manholes that are difficult and costly to construct and maintain.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The National Park Service has determined that the environmentally preferred alternative for this project is Alternative 2, the Selected Action Alternative. The environmentally preferred alternative is the alternative that will promote the national environmental policy expressed in NEPA (sec. 101 (b)). This includes alternatives that:

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

The proposed project’s purpose and need (as described in Chapter 1, Purpose of and Need for Action, of the Final EA) closely reflect these criteria. The purpose and need for this project emphasize natural and cultural resource protection, as well as enhancing visitor experience and improving the safety of park users. The Selected Alternative 2 best meets the Purpose and Need and hence the criteria listed above. Furthermore, the Selected Alternative 2:

- Provides a reliable and code compliant water system, best fire protection, and highest potable water quality.
- Rehabilitates or replaces waterlines without storage tank and supporting infrastructure to provide adequate fire flow demands.
- Reduces the amount of operation and maintenance by removing the storage tank, eliminates the need for hand dosing disinfection, and time for flushing significant quantities of water to meet public health standards.
- Relocates segments of the sewer line infrastructure at an environmentally safer distance from Redwood Creek to help safeguard public health and protect sensitive natural resources, including Coho salmon and steelhead trout, that could be adversely affected by SSO with the current wastewater system
- Maintains a sewer alignment within the Monument’s developed visitor services area, supporting maintenance infrastructure, and at the same time eliminating the need for an additional lift station.
- Maintains a sewer alignment within proximity of areas scheduled for upcoming infrastructure improvements.

Alternative 1 is not environmentally preferred because the existing conditions and management of the water and wastewater services include the current underground water and wastewater pipe and alignment, related infrastructure, and existing storage, collection, and distribution systems. With no action, corrosion and structural deterioration of existing components of both systems would continue and require more maintenance time and costs. Code requirements for potable water and fire storage would not be addressed by continuing to use the existing water tank. The galvanized steel water lines are past their life-cycle and do not provide an adequate delivery system for fire flows without a dedicated fire storage tank. A rupture in the water supply lines could cause significant property and natural resources damage.

Eighty percent (80%) of the wastewater collection system that runs parallel to Redwood Creek is in a critical risk area for future exposure and damage. Several sections of the gravity sewer main are within feet of the current Redwood Creek bank and there are several locations where the sewer main is exposed. Nearly the entire gravity sewer main located upstream of Manhole #13 is located within the channel migration and erosion hazard zone. Any break or rupture of the sewer lines would jeopardize public health, water quality, and sensitive natural resources, including Coho salmon, and steelhead trout.

PUBLIC INVOLVEMENT

Public Scoping

Public scoping for this environmental assessment began with a public notice issued on February 24, 2017. The document was posted on the NPS Planning, Environment, and Public Comment (PEPC) website. A press release and scoping notice was also sent out during the same time period to more than 1,560 individuals, park neighbors, interested public, stakeholders, and state and federal agencies with regulatory or review authority of potentially affected resources regarding the proposed project. The scoping notice described the purpose and need for the project, the location, and the proposed work. The notice requested the interested public to consider the following in their comments:

- Alternative approaches and ideas for accomplishing project goals;
- The range of issues that need to be considered;
- Other potential projects that might affect or be affected by this project;
- Effects that should be considered and why; and
- Information on resources within or adjacent to this area that your agency has jurisdiction

The NPS received comments from three local residents and three Bay Area organizations. The scoping comment period closed on March 17, 2014.

The public scoping comments were generally supportive of the proposed project since it would rehabilitate the aging and deteriorating water and wastewater systems, improve public health and safety, and protect sensitive natural resources, including Coho salmon and steelhead trout. However, there were questions and concerns that focused on why the proposed new waterline would be routed from the Tourist Club and through Mt. Tamalpais State Park in undisturbed ground rather than parallel to the existing line in already disturbed ground; maps included in the scoping notice were difficult to understand; potential impacts to visitors during construction; increased wastewater flows; and potential impacts on the MMWD water capacity and to adjacent and nearby park residents by potentially increasing water used by the Monument.

Draft EA Public Review and Comment

Information gained in this effort assisted the NPS in preparing a Draft EA that addressed these concerns by clarifying the scope and description of the proposed project, clarifying potential environmental impacts, assessing cumulative impacts associated with other on-going and upcoming projects within the Monument; and adding maps describing the existing conditions, locations, and proposed rehabilitation

and relocation of individual segments of the water and wastewater service lines and infrastructure.

The Draft EA was released for a 28-day public review period from April 7, 2017 to May 5, 2017. The document was posted on the NPS Planning, Environment, and Public Comment (PEPC) website. A press release and notice was also sent out to the same individuals, park neighbors, interested public, stakeholders, and state and federal agencies included in the scoping notice. Hard copies were also distributed at local libraries.

The NPS received comments from two organizations and one individual. The NPS determined there were a total of six substantive comments. The public comments can be summarized in three broad categories: 1) Questions regarding location and placement of the rehabilitated water / sewer lines; 2) Questions regarding wetlands and floodplains; and 3) Out-of-scope EA comments. A summary of NPS's responses are provided below. A full discussion of the comments and NPS's response to comments can be found in the Final EA (Chapter V – Consultation).

Location and Placement of Water / Sewer Lines: One commenter questioned why the NPS selected the preferred route for the new waterline from the Tourist Club rather than installing it adjacent to the existing line. The assumption made by the commenter was that the new route would be in undisturbed ground, was more vegetated than the existing route, and would overall have more environmental impacts compared to the existing route. The NPS selected the preferred route because installation of a new pipeline adjacent to the existing 60-year line presents a high risk of damaging or rupturing the existing line, which needs to be fully operational for continued water service during construction activities; there would be less ground disturbance because the new route is shorter than the existing route; the older route is overgrown with vegetation since it was installed 60 years ago; the project team, including NPS and State Park biologists agreed fewer trees and vegetation would be impacted with the preferred route; and the total length of new pipeline crossing State Park lands would be less than the existing line and require less pipeline infrastructure for a shorter line.

Another commenter questioned why the new sewer line would not be relocated on the north side of Muir Woods Road and farther from Redwood Creek. The NPS determined moving the rehabilitated sewer line on the other side of road, which was in steeper terrain, would necessitate deeper and unsafe trenching in order to construct a gravity flow system, which is a project objective. Eliminating a gravity flow system would require construction of more lift stations and cost more in operations and maintenance.

Wetlands and Floodplains: Another commenter questioned if there were wetlands in the former nursery site that could be impacted by construction activities to rehabilitate the water and wastewater systems, with the NPS response being there are no jurisdictional wetlands in or adjacent to the former nursery site. On the subject of floodplains, there was a comment suggesting a Statement of Finding (SOF) be prepared for construction activities within the 100-year Redwood Creek floodplain. NPS response was the development proposed in this Final EA that is within the 100-yr floodplain was included in the Statement of Findings (SOF) prepared and approved as part of the 2015 GGNRA General Management Plan FEIS/ROD, and therefore one was prepared for the project.

Out of Scope –One comment suggested an area in Redwood Creek below the parking lot bathrooms should be prioritized for fish habitat restoration. NPS responded that this suggestion will be forwarded to NPS biologists for considerations of future project(s) for habitat restoration. Another comment recommended a composting toilet be proposed rather than a flush toilet. The NPS response was that this Final EA is not proposing any improvements to the lift station or bathrooms and directed the commenter to the Monument's Sustainable Access Project EA.

REGULATORY COMPLIANCE

Endangered Species Act of 1973, as amended (16 USC §1531 et seq.). NPS has determined that the proposed project is not likely to adversely affect (NLAA) any listed species. In a letter dated May 3, 2017, NPS requested concurrence from the U.S. Fish and Wildlife Service (USFWS). USFWS confirmed

verbally on May 22, 2017 that it concurs with the NPS determination and written concurrence will follow as their staff prioritizes this project with their other workload. It is noted, USFWS written concurrence may concur with or without additional conditions. If additional conditions are added by USFWS in their written concurrence, the project will incorporate these conditions as part of project implementation.

Director's Order 77-2: Floodplain Management. A Programmatic Statement of Findings (SOF) was prepared and approved in the 2015 GGNRA General Management Plan FEIS/ROD. The SOF included review of the locations of structures, operations, and major visitor centers at nine site locations within a regulatory 100-year floodplain, including Muir Woods National Monument. In January 2017, at the request of GGNRA, the NPS Water Resources Division at the Denver Service Center reviewed and determined the Selected Alternative for rehabilitating the Monument's water and wastewater system was consistent with the 2015 Programmatic SOF and did not require a separate SOF.

National Historic Preservation Act (NHPA), Section 106. Section 106 of the NHPA (1966) requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for listing on the National Register of Historic Places. All actions affecting the parks' cultural resources must comply with this legislation. The NPS cultural resources staff reviewed this project for purposes of Section 106 under the park's 1992 Programmatic Agreement by the State Historic Preservation Office (SHPO) and Advisory Council on Historic Preservation (ACHP) and determined that the proposed project would have no adverse effects on historic properties in Muir Woods National Monument, May 23, 2017.

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE QUALITY OF THE HUMAN ENVIRONMENT

The NPS used the following NEPA criteria and factors defined in 40 CFR §1508.27 to evaluate whether the Selected Alternative would have a significant impact on the environment.

Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts that require analysis in an EIS.

Whether taken individually or as a whole, the impacts of the Selected Alternative do not reach the level of significant adverse effects that would require preparation of an EIS. Most adverse impacts associated with implementation of the Selected Alternative would be short-term and temporary during construction activities. Mitigations and Best Management Practices are incorporated into the proposed project to ensure any adverse impacts would be less than significant.

When the impacts of the Selected Alternative are combined with the effects of cumulative actions in the project area, the overall impacts to cultural resources within the Monument would be minimal, short-term during trenching and other construction activities, and have long-term direct beneficial impacts associated with the removal of the water tank and rehabilitation of a small historic shed that would be used for a new chlorinator station. Impacts on soils would be direct, short and long-term, and adverse from removal, back filling, compaction, and soil structure modification. Direct, long-term, beneficial impacts from the Selected Alternative include decreased turbidity and sedimentation in Redwood Creek, and native plant revegetation following construction. Short-term temporary adverse impacts on the surrounding natural soundscape are expected during construction activities. The effects of these activities are negligible because a relatively small area of wildlife habitat would be affected. Construction would avoid these areas during periods when wildlife is most sensitive. Over the long term, the majority of these projects would improve wildlife habitat.

There is the potential of short-term impacts on federally endangered Coho salmon, threatened steelhead trout and habitat from polluted runoff caused by soil erosion and instream channel work during construction activities, but collectively, these projects would have long-term beneficial cumulative effects on critical salmonid habitat; negligible impacts on the threatened northern spotted owl; and no impacts on the threatened marbled murrelet and California red legged frogs. Because the proposed project is restricted to upland areas and avoids wetlands, there are no direct impacts to wetlands.

Regarding potential impacts on water resources and hydrologic processes, collectively, these projects would have substantial long-term beneficial cumulative effects. Regarding vegetation, most of these activities would cause a minimal loss of vegetation and not affect rare plants because they have occurred or would occur on or near developed areas where vegetation has been previously disturbed and no rare plant habitat is present. Potential impacts on visitor use, experience, and safety due to temporary construction activities would have short-term adverse impacts. Upon completion of the proposed action and the other projects, the upgraded sewer and water system and the new lift station would eliminate the risk of sewage contamination or loss of drinking water due to failure of an aging system, and the improved drainage features, road, parking areas, bridges, and trails would ensure safe and enjoyable driving or walking conditions resulting in overall long-term beneficial cumulative impacts on visitor use, experience, and safety.

The Selected Alternative would result in short-term, adverse and long-term, beneficial impacts on transportation. Implementation of mitigation and safety measures in potentially problematic locations as noted in the Final EA would further minimize most of the impacts to provide overall long-term benefits. There would be limited, short-term, adverse cumulative impacts on transportation during the construction period of the cumulative projects as well as greater long-term beneficial impacts from resurfacing the pavement, replacing an old bridge, prohibiting shoulder parking, and implementing the reservation system. The impacts of the cumulative actions would be beneficial and, combined with the impacts from the proposed water and wastewater rehabilitation would continue to be beneficial, especially addressing vehicle and pedestrian safety in the parking lots. A few safety issues would remain, specifically shoulder parking; however, the contribution of the Selected Alternative to cumulative impacts would result in overall beneficial effects.

Degree of effect on public health or safety.

As noted above, there is the potential for short-term adverse impacts on public health or safety during construction activities, but long-term beneficial effects following all construction activities.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

The project does not contain prime farmland, farmland of local or statewide importance or wild and scenic rivers. As noted above, the impacts of the Selected Alternative combined with the effects of cumulative actions in the project area, the overall impacts to cultural resources within the Monument would be minimal, short-term during trenching and other construction activities, and have long-term direct beneficial impacts associated with the removal of the water tank and rehabilitation of a small historic shed. Potential impacts to Mount Tamalpais State Park from trenching and installation of a new 6" water line in undisturbed ground would be short-term, with long term beneficial effects from abandoning in place the existing 2" line because there would be less overall disturbance if the existing line was removed. The new realignment would also be shorter than the existing and less vegetation would be impacted with the new line.

Degree to which effects on the quality of the human environment are likely to be highly controversial.

The project actions have not generated public controversy and are not likely to be controversial.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.

The potential impacts are well defined and analyzed in the Muir Woods National Monument Water / Wastewater Service Rehabilitation Final EA. The degree or possibility that the effects on the human environment will be highly uncertain or will involve unique or unknown risks is remote.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The Selected Alternative will not predetermine or establish a precedent for future actions with significant effects in the project area, including Mount Tamalpais State Park, and Redwood Creek and does not represent a decision in principle about a future consideration. Future actions, such as additional improvements to the Monument's water and wastewater system would proceed independently of this project and receive a separate environmental analysis.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

The Final EA considered the cumulative impacts of the Selected Alternative with several past, present and future projects and the analysis for all impact topics indicated that the Selected Alternative could result in minimal effects, but collectively, would not have significant cumulative adverse effects.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The Final EA found that the project would not significantly and adversely affect any cultural resources. The proposed project would be designed and implemented so that the integrity of the Muir Woods National Monument Historic would have no adverse effects on historic properties in Muir Woods National Monument.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat.

There is the potential for short-term impacts on Coho salmon, steelhead trout, northern spotted owl and habitat during construction activities, but the Selected Alternative would have long-term beneficial cumulative effects on listed species and habitat. In informal consultation with the USFWS, the NPS was advised by the USFWS through verbal communications, May 22, 2017, that it will concur with NPS/GGNRA's NLAA determination. Further, the Selected Alternative would adhere to mitigation measures and any additional measures required by the USFWS in order to prevent adverse effects to these listed species and habitat.

Whether the action threatens a violation of Federal, state, or local environmental protection laws

Implementing the Selected Alternative would not violate any federal, state or local environmental protection laws. Assessment of the proposed action has been performed pursuant to NEPA, which requires consideration of environmental protection laws and regulations.

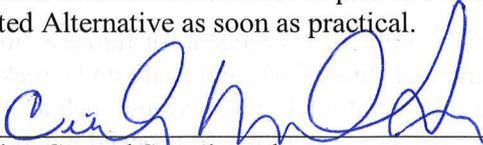
BEST MANAGEMENT PRACTICES and REGULATORY REQUIREMENTS

Best Management Practices (BMPs) and Regulatory Requirements are attached to this FONSI (Attachment A). The NPS and/or its contractors will implement and comply with all BMPs and Regulatory Requirements identified in Attachment A.

FINDING

Implementation of the Selected Alternative for the Muir Woods National Monument Water/Wastewater Service Rehabilitation Project Environmental Assessment will not have significant impacts on the human environment. This determination is affirmed by the analysis in the Final EA, agency consultations, and the inclusion and consideration of public review to reduce or avoid impacts. Adverse environmental impacts that could occur are negligible to minor in intensity, duration, and, would be less than significant. Beneficial impacts range from negligible to moderate. As described in the Final EA, there are no highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects or elements of precedence. There are no previous, current or planned actions, which in combination with the Selected

Alternative, would have significant effects on the human environment. Requirements of NEPA have been satisfied and preparation of an Environmental Impact Statement is not required. The GGNRA will implement the Selected Alternative as soon as practical.

Recommended:  23 MAY 2017
Cicely Muldoon, Acting General Superintendent Date
Golden Gate National Recreation Area, National Park Service

for: Approved:  5/26/2017
Laura E. Joss, Regional Director Date
Pacific West Region, National Park Service

ATTACHMENT A – BEST MANAGEMENT PRACTICES AND REGULATORY REQUIREMENTS

The following BMPs for the Selected Alternative were published in the Final EA and will be implemented by the NPS and its contractors.

BEST MANAGEMENT PRACTICES
General
<p>Clearly state all resource protection measures in the construction specifications, and instruct workers to avoid conducting activities outside the project area.</p> <p>Hold a preconstruction meeting to inform contractors about sensitive areas, including natural and cultural resources.</p> <p>Delineate construction zones outside of existing disturbed areas with flagging, and confine all surface disturbances to the construction zone.</p> <p>Site staging and storage areas for construction vehicles, equipment, materials, and soils in previously disturbed or paved areas approved by the National Park Service. These areas would be outside of high visitor use areas and clearly identify them in advance of construction.</p> <p>Require contractors to properly maintain construction equipment to minimize noise, and do not allow construction vehicle engines to idle for extended periods.</p> <p>Remove all tools, equipment, barricades, signs, and surplus materials from the project area upon completion of the project.</p> <p>Vehicles and equipment entering the Monument would be inspected for leaking oil and fluids. Any leaking vehicles or equipment would be required to be fixed before entering.</p> <p>If necessary, all servicing of equipment done at the job site would be conducted in a designated, protected area to reduce threats to water quality from vehicle fluid spills. Designated areas would not directly connect to the ground, surface water, or storm drain systems. The service area would be clearly designated with berms, sandbags, or other barriers. Secondary containment, such as a drain pan, to catch spills or leaks would be used when removing or changing fluids. Fluids would be stored in appropriate containers with covers and properly recycled or disposed of offsite.</p>
Air Quality
<p>To limit dust, criteria pollutants, and precursor emissions associated with project construction, the following Bay Area Air Quality Management District (BAAQMD)-recommended Basic Construction Measures shall be required:</p> <p>Water all active construction areas with exposed soil surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads that have not been stabilized with soil binder, mulch, gravel, vegetation or other cover) sufficiently to prevent dust from becoming airborne.</p> <p>All trucks transporting soil, sand, or other loose material offsite shall be covered.</p> <p>Vehicle speeds on unpaved areas shall be limited to 15 mph.</p> <p>Idling times for construction equipment (including vehicles) shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 30 seconds, except for situations</p>

allowed under California’s commercial vehicle idling regulations. Clear signage of this requirement shall be provided for construction workers at all access points to construction areas.

Cultural Resources

All ground disturbance from where the sewer line leaves Frank Valley Road and enters the Annex Lot through the areas for the new lift and comfort station (as proposed in the Sustainable Access Project) would be monitored for potential subsurface archeological deposits due to the potential for buried deposits in his area. Any change in alignment from the main parking lot to the Annex Lot entrance from the current alignment within Frank Valley Road to the south would also be monitored, if necessary.

The Archeological site, CA-MRN-722H (the Annex Lot), would be avoided by routing the sewer line through the parking lot for the Annex Lot.

If buried cultural resources are inadvertently discovered during ground-disturbing activities, work shall immediately stop in that area and within a 100-foot radius of the find until the Park Archeologist can assess the significance of the find. Inadvertent discoveries would be treated in accordance with 36 CFR 800.13 (Protection of Historic Properties: Post-review discoveries). The archaeological resource would be assessed for its eligibility for listing on the NRHP in consultation with the SHPO (and a Native American monitor from the Federated Indians of Graton Rancheria, if it is an indigenous archaeological site) and a determination of the project effects on the property would be made. Work within the area may not resume until the NPS Archeologist has determined all interested parties have been consulted and an appropriate mitigation strategy has been developed.

If human skeletal remains are encountered, all work shall stop in the vicinity of the discovery, and the find would be secured and protected in place. The Marin County coroner and Park Archaeologist would both be notified immediately. If a determination finds that the remains are Native American, and that no further coroner investigation of the cause of death is required, they would be treated in accordance with the Native American Graves Protection and Repatriation Regulations at 43 CFR 10.4 (Inadvertent discoveries). The coroner would also contact the NAHC (pursuant to Section 7050.5[c] of the California Health and Safety Code) and the County Coordinator of Indian Affairs.

Geology, Mineral Resources, and Soils

Avoid or minimize disturbance to soils as much as possible.

Evaluate existing topsoil for invasive, nonnative plant infestations.

Remove topsoil heavily infested with invasive, nonnative plants. Salvage non-infested topsoil, store according to soil conservation guidelines, and replace once construction is complete.

Implement erosion control measures that provide for soil stability and prevent movement of soils during rain events (i.e., silt fences and tarps).

Aerate any ground surface temporarily disturbed during construction and replant with native vegetation to reduce compaction and prevent erosion.

All BMPs from the SWPPP would be implemented as required by the Construction General Permit.

Soundscape

Contractors would use quiet technologies for equipment and implement measures to reduce noise to the extent feasible.

Idling times for construction equipment (including vehicles) shall be minimized either by shutting

equipment off when not in use or reducing the maximum idling time to 30 seconds as noted above under Air Quality.

Except when required for safety or to ensure the integrity of a project component, no work would be conducted on weekends or holidays. The hours specified in the Marin County Noise Ordinance would be adhered to as general guidance: general construction would be limited to the hours of 7 am to 6 pm Monday through Friday and 9 am to 5 pm Saturdays; loud noise generating equipment operation would be limited to 8 am to 5 pm Monday through Friday.

Threatened and Endangered Species

Prior to any construction-related activities, a training session will be required for all contractors, partners, and NPS staff participating in Project-related activities in the Project area. Training will be conducted by a qualified biologist to familiarize personnel about sensitive resources in the Project area. Personnel will be provided with a brief life-history and physical description of Coho salmon, steelhead, northern spotted owl, marbled murrelet, and other sensitive wildlife in the area. Training will include staff resource contact information, identification of sensitive resources, the limits of the work area, general BMPs, and appropriate actions to take upon encountering species status species or other wildlife. All attendees will sign an attendance sheet along with their printed name, company or agency, email address, and telephone number.

The contractor will be required to keep all waste and contaminants contained and remove them daily from the work site.

Within NSO habitat, no large coniferous trees that could provide nest sites will be removed.

Within MM habitat, disturbance to native trees greater than 10 inches in diameter at breast height would be avoided where feasible.

No construction activities will occur at night to minimize impacts on wildlife that are most active during these times, such as the northern spotted owl.

No large trees would be cut during the Marbled Murrelet breeding season avoiding large impacts to a nest tree or nesting habitat. Vegetation clearing for this projects would occur prior to the Marbled Murrelet breeding season.

Vegetation

All on- and off-road vehicles, boots, equipment, and tools must be power washed to remove soil and plant fragments before entering GGNRA property to avoid spreading pathogens or exotic/invasive species. Equipment also must be cleaned when moving between work zones. NPS staff will inspect equipment upon arrival in the Monument and only allow clean equipment into the project area.

All boots, equipment, and tools must be disinfected using a 10% bleach solution, 70% isopropyl alcohol, or other NPS-approved disinfectant method prior to entering the site, as well as between work areas, to prevent pathogen spread.

Vehicle and equipment washing can occur on site only as needed to prevent the spread of sediment, pathogens, or exotic/invasive species. No runoff from vehicle or equipment washing is allowed to enter water bodies, including channels and storm drains, without being subjected to adequate filtration (e.g., vegetated buffers, hay wattles or bales, and silt screens).

NPS would identify invasive plants, particularly panic veldt grass (*Ehrharta erecta*), within the work and access route areas prior to Project implementation. A qualified vegetation ecologist or botanist would plan treatments to prevent the spread of invasive species, and implementation of these treatments would be

under the supervision of a qualified vegetation ecologist or botanist. The final treatment prior to Project implementation would occur close to initiation of Project work.

Avoid working under the dripline of redwoods and coast live oak to the extent possible. Where that is unavoidable, use flexible materials to navigate the pipe above/below roots. Minimize all root cutting and do not cut any roots >1" diameter when working under the dripline of oaks and redwoods.

Because of the presence of large individuals of Buckeye (*Aesculus californicus*), the stretch of water line between the old Nursery site and the next manhole to the north will use the "pipe-burst" method rather than trenching to minimize any negative impacts on roots. The remaining stretches towards the annex lot may be trenched.

No Coast Redwood (*Sequoia sempervirens*) individuals may be removed, but small diameter Douglas fir (*Pseudotsuga menziesii*) (<6 inch DBH) may be cut within the footprint.

If possible, downed logs should be moved out of the project footprint rather than be cut.

Minimize disturbance to vegetation. Cut only the minimal amount of vegetation required to perform the task at hand. Areas disturbed by project actions would be restored with native vegetation.

Evaluate compaction both before and after work and de-compact using hand methods, if needed.

NPS would avoid impacts to special status and locally rare plants to the extent feasible. If the NPS determines that impacts could not be completely avoided, then Vegetation staff would collect seed and transplant unavoidable individuals prior to any construction.

A small patch of the rare species, California bottle brush (*Elymus californicus*) is present along and within the trail leading up to the water tank, and is likely to be impacted. Vegetation staff would collect seed and attempt to transplant imperiled individuals prior to any construction.

All areas disturbed by this project would be revegetated with native species grown in the park nurseries.

Visitor Use, Experience, Safety

Inform visitors in advance of construction activities via the monument's website, strategically located signs, at the visitor center, and by bus and shuttle drivers.

Review the tour bus permit system to develop a process that requires a permit for all tour buses wishing to visit the monument.

To the extent practical, schedule work to avoid construction activity and construction-related delays during peak visitation times.

Limit construction-related traffic delays resulting from work at pull-offs, within parking lots, and along Muir Woods Road to a maximum of 15 minutes in each direction.

Develop provisions for emergency vehicle access through construction zones.

Water Resources, Wetlands, and Hydrologic Processes

Implement best management practices for drainage and sediment control to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas. These practices may include, but are not limited to, silt fencing, filter fabric, temporary sediment ponds, check dams of pea gravel-filled burlap bags or other material, and/or immediate mulching of exposed areas to minimize sedimentation and turbidity impacts as a result of construction activities. Use no plastic materials. Leave erosion control measures in place at the completion of construction to avoid adverse impacts on water resources, after which time NPS staff would be responsible for maintenance and removal.

Wildlife and Habitat

If vegetation clearing or ground disturbing activities commence between March 1 and July 31, a qualified biologist will conduct a survey for nesting birds within 5 days prior to starting work. If a lapse in Project-related work of 2 weeks or longer occurs, another focused survey will be conducted before Project work can be initiated. Surveys will cover a minimum of a 1/4-mile radius around the construction area.

If nesting birds are found, a buffer will be established around the nest and maintained until the young have fledged. Appropriate buffer widths are 300 feet for non-listed raptors and 100 feet for non-listed passerines. A qualified biologist may identify an alternative buffer based on a site-specific evaluation. Work will not commence within the buffer until fledglings are fully mobile and no longer reliant upon the nest or parental care for survival.

Prior to Project-related activities, a qualified biologist will conduct pre-construction surveys for dusky-footed woodrat (*Neotoma fuscipes*). Identified woodrat houses will be avoided to the maximum extent practicable. If houses are unavoidable, NPS will implement informal NPS protocol of dismantling of woodrat houses.

Stormwater

Preparation of a stormwater pollution prevention plan (SWPPP) is required for this project. Erosion control and sedimentation best management practices (BMPs) would be implemented per the SWPPP.

Transportation and Parking

Post signs on Muir Woods Road warning traffic of the pedestrian crossing at the Conlon Lot both before the intersection and at the intersection (following the latest standards published in the Manual on Uniform Traffic Control Devices).

The contractor would be required to present and obtain approval for traffic and pedestrian control plans within the monument and adjacent lands as necessary.

Schedule work that affects parking to begin in mid to late august to avoid peak visitation.

Temporary striping, traffic/pedestrian control, and other features would be utilized to reduce confusion and congestion within the monument. A traffic and pedestrian control plan would be required as part of the construction contract.

Regulatory Requirements

The following are NPS measures to minimize harm to listed species. USFWS may concur with or without additional conditions/measures. If additional conditions are added by USFWS, the project will incorporate these conditions as part of project implementation.

Prior to any construction-related activities, a training session will be required for all contractors, partners, and NPS staff participating in Project-related activities in the Project area. Training will be conducted by a qualified biologist to familiarize personnel about sensitive resources in the Project area. Personnel will be provided with a brief life-history and physical description of Coho salmon, steelhead, northern spotted owl, marbled murrelet, and other sensitive wildlife in the area. Training will include staff resource contact information, identification of sensitive resources, the limits of the work area, general BMPs, and appropriate actions to take upon encountering species status species or other wildlife. All attendees will sign an attendance sheet along with their printed name, company or agency, email address, and telephone number.

The contractor will be required to keep all waste and contaminants contained and remove them daily from the work site.

All on- and off-road vehicles, equipment, and tools must be power washed to remove soil and plant fragments before entering GGNRA property to avoid spreading pathogens or exotic/invasive species. Equipment also must be cleaned when moving between work zones.

Vehicle and equipment washing can occur on site only as needed to prevent the spread of sediment, pathogens, or exotic/invasive species. No runoff from vehicle or equipment washing is allowed to enter water bodies, including channels and storm drains, without being subjected to adequate filtration (e.g., vegetated buffers, hay wattles or bales, and silt screens).

All boots, equipment, and tools must be disinfected using a 10% bleach solution, 70% isopropyl alcohol, or other NPS-approved disinfectant method prior to entering the site, as well as between work areas, to prevent pathogen spread.

Contractors would use quiet technologies for equipment and implement measures to reduce noise to the extent feasible.

No construction activities will occur at night to minimize impacts on wildlife that are most active during these times, such as the northern spotted owl.

The following measures will be implemented to minimize potential adverse effects to northern spotted owls, with the exception of the water and sewer line replacement project that needs to initiate work starting midway through the Spotted Owl breeding season:

- If construction commences between February 1 and July 31, NPS will conduct pre-construction surveys for northern spotted owls in suitable nesting habitat;
- If northern spotted owl nests are detected during pre-construction surveys, no work that raises noise levels above ambient background levels will be conducted within ¼-mile of an active nest;
- Within northern spotted owl habitat, disturbance to native trees greater than 10 inches in diameter at breast height will be avoided where feasible.

No large coniferous trees would be cut as part of these projects to protect potential Spotted Owl and Marbled Murrelet nest trees.

The following measures will be implemented to minimize potential adverse effects to marbled murrelet for all project actions, except for the water and sewer line replacement project:

- No construction activities that would increase noise levels above ambient background levels within 1/4 mile of nest sites or unsurveyed suitable habitat between April 1 and August 5 would be conducted. In addition, from August 6-September 30, NPS will not conduct work that would raise noise levels above ambient background levels within ¼ mile of a nest site or unsurveyed suitable habitat from from two hours prior to sunset to two hours after sunrise.

The following measures would be implemented to minimize potential adverse effects to non-federally listed nestings birds:

- If vegetation clearing or ground disturbing activities commence between March 1 and July 31, a qualified biologist will conduct a survey for nesting birds within 5 days prior to starting work. If a lapse in Project-related work of 2 weeks or longer occurs, another focused survey will be conducted before Project work can be initiated. Surveys will cover a minimum of a 1/4-mile radius around the construction area.
- If nesting birds are found, a buffer will be established around the nest and maintained until the young have fledged. Appropriate buffer widths are 300 feet for non-listed raptors and 100 feet for non-listed passerines. A qualified biologist may identify an alternative buffer based on a site-

specific evaluation. Work will not commence within the buffer until fledglings are fully mobile and no longer reliant upon the nest or parental care for survival.

Prior to Project-related activities, a qualified biologist will conduct pre-construction surveys for dusky-footed woodrat (*Neotoma fuscipes*). Identified woodrat houses will be avoided to the maximum extent practicable. If houses are unavoidable, NPS will implement informal NPS protocol of dismantling of woodrat houses.

Areas disturbed by project actions would be restored with native vegetation.