

FINDING OF NO SIGNIFICANT IMPACT
REDWOOD CREEK TRAIL REALIGNMENT AND DIAS RIDGE TRAIL EXTENSION PROJECT
National Park Service
Golden Gate National Recreation Area
October 2018

Introduction

This Finding of No Significant Impact (FONSI) has been prepared in accordance with the 1969 National Environmental Policy Act (NEPA). The FONSI is for the Redwood Creek Trail Realignment and Dias Ridge Trail Extension Project. The FONSI with the Environmental Assessment (EA) and errata with responses to comments, comprise the full and complete NEPA record of the analysis of environmental impacts and the National Park Service (NPS) decision-making process for selecting the Preferred Action Alternative for implementation. The project is located in the Redwood Creek watershed, in the vicinity of Muir Beach in Marin County. It is within both the Golden Gate National Recreation Area (GGNRA) and Mount Tamalpais State Park (See Figures 1 and 2). The NPS and California State Parks (CDPR) partnered to plan and conduct the environmental analysis for the Redwood Creek Trail Realignment and Dias Ridge Trail Extension Project. A joint Environmental Assessment/Initial Study (EA/IS) was prepared in accordance with the NEPA and the California Environmental Quality Act (CEQA).

This document summarizes the alternatives considered in the EA/IS. It includes the rationale for selecting Alternative B for implementation. The FONSI lists the actions the NPS will follow when implementing the project and explains the reasoning behind the determination that the Selected Alternative will result in no significant impacts to the environment, as defined by the NEPA regulations (42 CFR 1500-1508), Director's Order #12 - Conservation Planning, Environmental Impact Analysis, And Decision-Making, and the NPS NEPA Handbook (2015). The FONSI, EA/IS, and Errata with Responses to Comments will guide actions for implementation of the project.

As shown in Figure 2, the project will realign a portion of Redwood Creek Trail, install bridges over the creek and drainages to the creek, and restore degraded portions of the trail to bring it to current CDPR standards. All but a short section of the Redwood Creek Trail is on state land. The project will reduce sedimentation into the Redwood Creek by removing fords through the creek, abandoning a segment of the existing trail and replacing it with a new segment outside of the creek's floodplain, replacing or rehabilitating the trail segments not meeting current standards, and restoring areas of the landscape disturbed by the project. The improved trail alignment will support existing authorized trail-uses. Redwood Creek Trail is designated for pedestrian and equestrian use only. This designation will continue to apply under the proposed project, with bikes prohibited on Redwood Creek Trail.

The Dias Ridge Trail Extension will develop a new trail segment along Highway 1 to connect the southern ends of the Redwood Creek Trail and Dias Ridge Trail. The Dias Ridge Trail Extension will be on federal land. The Dias Ridge Trail is designated as a multi-use trail (for pedestrian, equestrian, and bike users) and the Dias Ridge Trail Extension will also be designated for multi-use.

Purpose, Need and Objectives

The purpose of the proposed action is three-fold:

- To create a safer and more sustainable trail for visitors;
- To reduce adverse effects of the Redwood Creek Trail on Redwood Creek and on the multiple drainages to the creek crossed by the trail; and
- To connect the Redwood Creek Trail and Dias Ridge Trail by an extension of the Dias Ridge Trail.

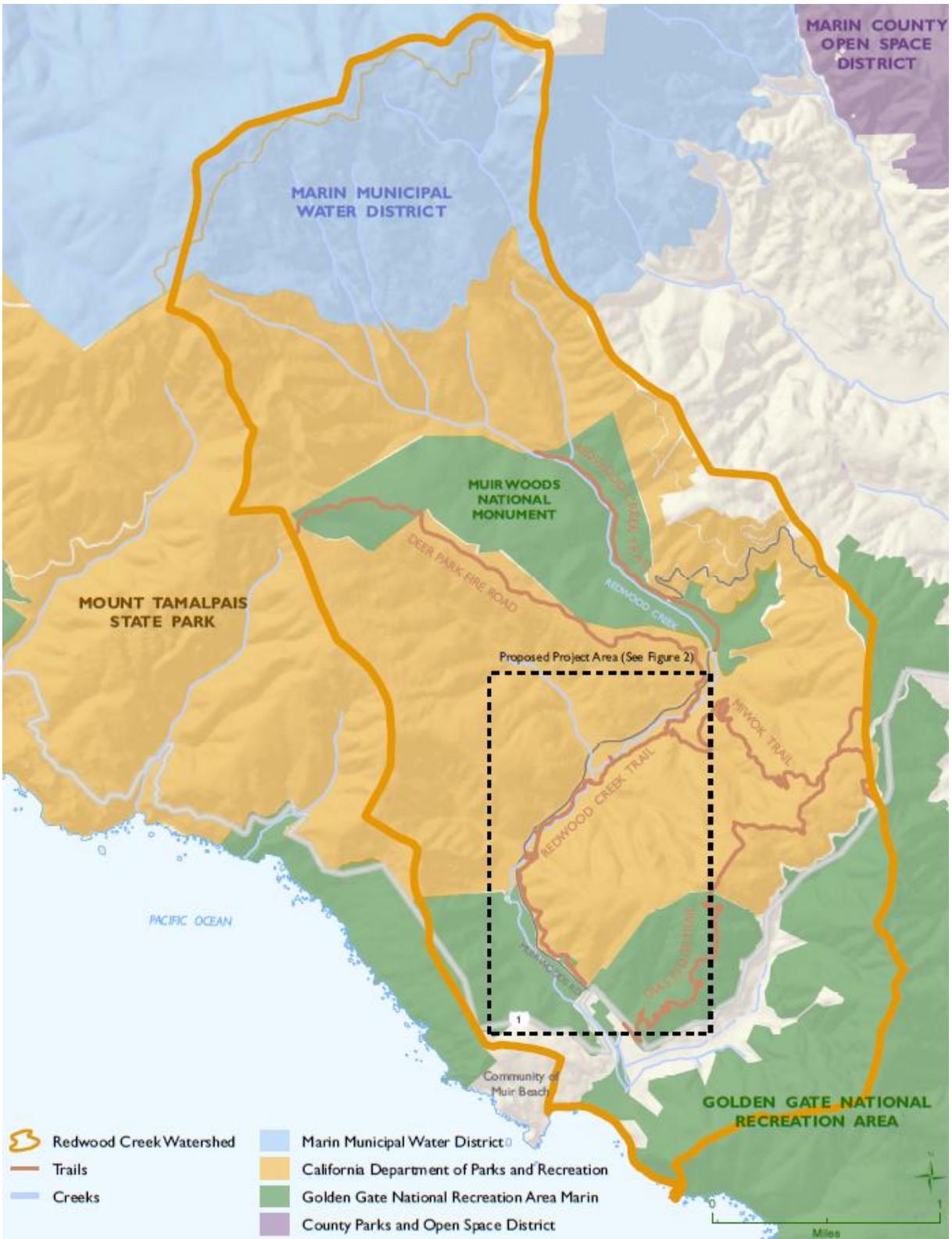


Figure 1. Project Area

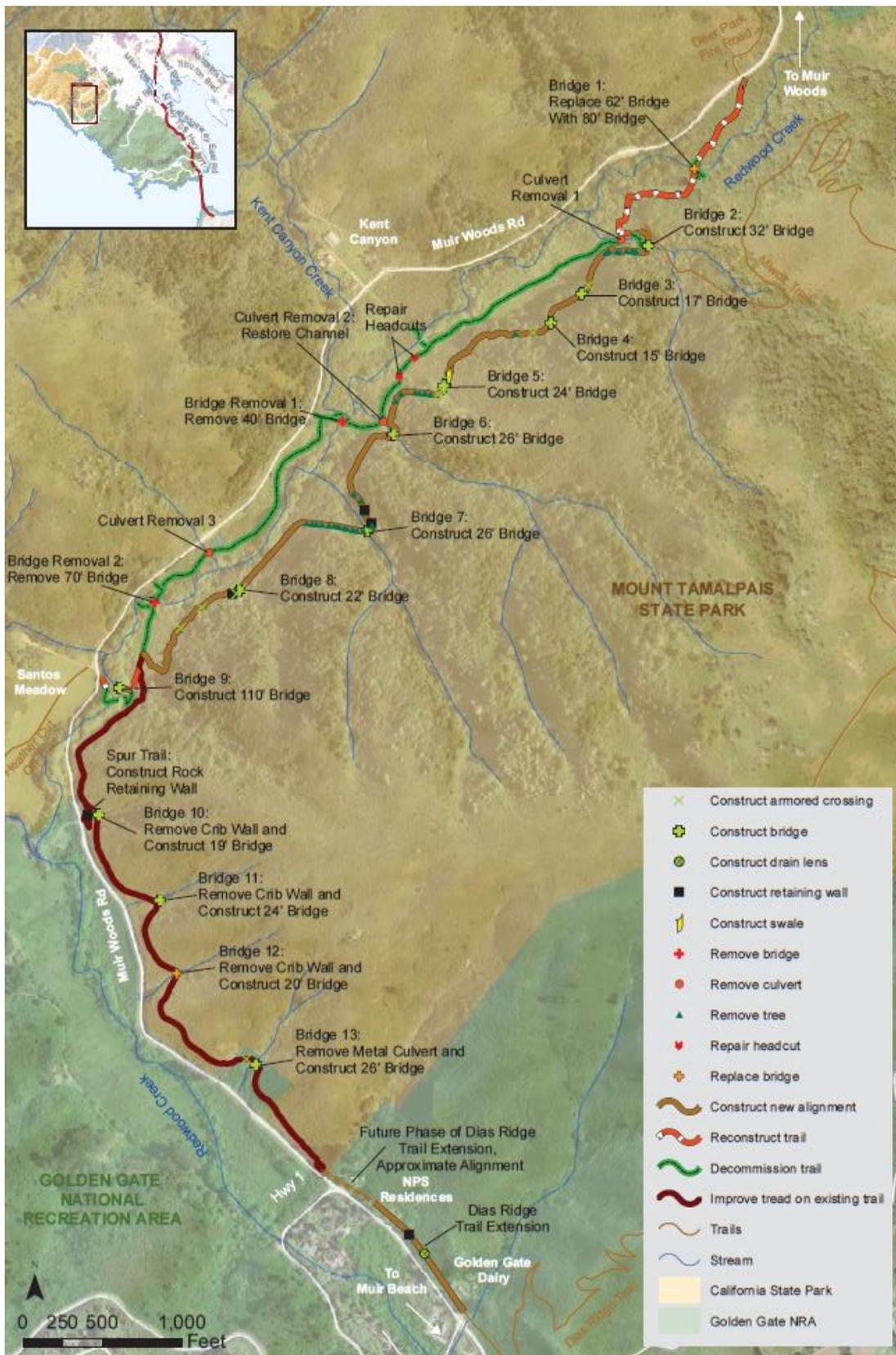


Figure 2. Project Features and Locations

The project furthers in part the Redwood Creek Watershed Vision for the Future and goals identified in the General Management Plan (GMP) for the Golden Gate National Recreation Area. The proposed Project will provide a trail interconnection, improve trail conditions and safety for visitors, reduce sediment loads and improve water quality in Redwood Creek, and reduce maintenance needs.

On Redwood Creek Trail, 3 bridges, 4 culverts, and 3 crib walls will be removed and 13 new bridges will be installed. These improvements will create a safer, more sustainable trail with reduced maintenance needs while also benefiting water quality in Redwood Creek, promoting natural drainage, reducing fine sediment delivery to the creek, facilitating coarse sediment delivery, and protecting habitat for listed aquatic species. In addition, past actions have disrupted the connectivity of the creek and its floodplain; moving the trail out of the floodplain will allow for future projects to reconnect Redwood Creek to its floodplain. This will further improve hydrologic and geomorphic functions in the watershed.

The Dias Ridge Trail Extension will address a 1,300-foot gap between the southern ends of the Redwood Creek and Dias Ridge trails at Highway 1. There is little to no separation between motorists and any pedestrians, equestrians, or bikers using the highway shoulder. The Dias Ridge Trail Extension will be parallel to, but separate from, the east side of Highway 1. When complete, the extension will connect the Dias Ridge Trail at Golden Gate Dairy to the Redwood Creek Trail at Muir Woods Road, eliminating the need for visitors to use the highway shoulder.

Alternatives

NPS analyzed two alternatives, Alternative A - No Action/Current Management and Alternative B – Proposed Action/Preferred Alternative.

No Action Alternative

Under the No Action Alternative, the current trail conditions and management practices will continue and no new actions will be implemented. Identified adverse impacts will continue, including existing trail use issues and environmental conditions and trends. The objectives of creating a more sustainable trail alignment, reducing impacts to Redwood Creek and the habitat it provides for listed species, and of enhancing visitor safety by extending the Dias Ridge Trail to the Redwood Creek Trail will not be met. Substandard and deteriorated conditions will continue, and deterioration will increase over time, requiring additional resources to maintain current conditions. The No Action Alternative will not provide a means for improving conditions for visitors using the Redwood Creek Trail, reduce direct and indirect adverse impacts to listed species resident in Redwood Creek, or alleviate the safety risks associated with use of the Highway 1 shoulder.

Selected Alternative

The Selected Alternative is Alternative B – Proposed Action/Preferred Alternative. It was not necessary to make any changes or modifications to the Selected Alternative based on public comments and agency review. The Selected Alternative is the same as described and analyzed in the EA. Under Alternative B, the NPS will remove an existing metal culvert and install a 26-foot bridge (Bridge 13) across a drainage tributary to Redwood Creek. This will be on NPS lands and will be coordinated with Mt. Tamalpais State Park, which will be undertaking work on the portion of the Redwood Creek Trail under its jurisdiction. NPS will construct a new trail extension between the Dias Ridge Trail and the Redwood Creek Trail trailhead on Muir Woods Road near the road's intersection with Highway 1.

The Project includes Best Management Practices (BMPs) and Mitigation Measures (Attachment A) that will be employed during construction. It will also comply with all required permits and approvals. Specific measures were identified to eliminate or minimize the degree of adverse effects that could otherwise result from project implementation.

Construction activities along the Redwood Creek Trail will include:

- Reconstructing approximately 0.28 miles of the existing Redwood Creek Trail from Deer Park Fire Road south to the Miwok Trail and replacing the existing bridge across Redwood Creek;
- Developing a 1.1 mile segment of new trail outside of the Redwood Creek floodplain between the Miwok Trail and Santos Meadow, while decommissioning and abandoning a corresponding 0.9 mile of existing trail currently located in the floodplain;
- Removing culverts and bridges in the abandoned trail section and restoring the land;
- Eliminating fords and replacing them with bridges;
- Removing various existing culverts and crib walls on channels draining to the creek and replacing them with bridges; and
- Repairing and rehabilitating the trail tread south of Santos Meadow to Muir Woods Road, beginning from the end of the new trail segment.

Overall, 3 bridges, 4 culverts, and 3 crib walls will be removed and 13 new bridges will be installed on the Redwood Creek Trail. The trail width will be 4 feet, except for some sections that will be 5-foot wide to allow passing and at turns or grade changes with line-of-sight concerns. The Santos Meadow Bridge will be 6 feet wide.

The Dias Ridge Trail Extension addresses a 1,300-foot gap between the southern ends of the Redwood Creek and Dias Ridge trails at Highway 1. Currently, pedestrians, equestrians, and bicyclists use the highway shoulder. To address this safety problem, the extension of the Dias Ridge Trail will be developed parallel to the east side of Highway 1, but separate from the highway. The extension will eliminate the need for visitors to use the highway shoulder between the Dias Ridge Trail and the Redwood Creek Trail. The Dias Ridge Trail Extension will enhance safety, complete a loop composed of sections of the Redwood Creek, Miwok, and Dias Ridge trails, and provide safe access to nearby destinations and other trails. On the Dias Ridge Trail Extension, 13 at-risk trees in the historic wind row along the east side of Highway 1 at the Golden Gate Dairy will be removed. Five trees will be retained and 8 Monterey Cypress trees will be planted. A Bishop pine north of the historic wind row may be removed, if required for trail development. North of Golden Gate Dairy is an area of loose and saturated alluvial soil that may require installation of rock drainage lenses below the trail tread surface to aid drainage and maintain a drier trail surface. The Dias Ridge Trail Extension will be 6 to 8 feet wide, with the variation in width based on safety and line-of-sight concerns.

Other Alternatives Considered and Dismissed from Further Analysis

The NPS considered, but dismissed the following alternatives. No additional alternatives to the Redwood Creek Trail Realignment or the Dias Ridge Trail Extension were suggested during scoping.

Alternative to Maintain the Northern Section of Redwood Creek Trail in Current Location

Consideration was given to retaining the northern portion of Redwood Creek Trail in its current location, while improving trail features and creek and drainage crossings. However, this would not achieve the project objectives of creating a sustainable trail alignment, moving the trail out of the floodplain to allow for future floodplain restoration, or reducing impacts on the aquatic habitat for listed species to the same degree as a realignment of the trail section out of the floodplain.

Alternative Trail Extension Alignments for the Dias Ridge Trail

Alternatives were considered for the Dias Ridge Trail Extension between the existing Dias Ridge Trail and the Redwood Creek Trail along Highway 1. These included:

- A trail alignment that would run behind (east of) the NPS residences and the life estate tenancy property located on the east side of Highway 1, and

- Expansion of the Highway 1 shoulder to allow for a multi-use trail immediately adjacent to the highway.

The first of these alternatives would create a steeper, less direct, and longer trail than a trail in front of the residences. It would also require retaining walls be installed due to the hillside slope. The longer length of this alternative and its construction requirements would cause more damage to existing native vegetation than the proposed Project. Moreover, compliance with the Architectural Barriers Act Accessibility Standard would be difficult to achieve. If the alternative behind the residences was built, many trail users would likely continue to traverse along the highway shoulder, as is current practice, rather than use this alternative route.

The second alternative, to expand the highway shoulder to accommodate a trail, would require removal of trees within an historic wind row and leave trail users vulnerable to passing vehicles. Users of this shoulder-expansion alternative would still be adjacent to the highway rather than separated from the roadway by topography and landscaping. As this trail is a popular equestrian trail, being adjacent to the highway traffic and potentially unsafe to visitors, this alternative does not meet the purpose and need of this project. This expansion would likely require additional walls due to the adjacent slope. This alternative would be within Caltrans right of way and would require some realignment of the road. NPS has no control over the road and would need Caltrans' agreement for any encroachment.

For these reasons, both alternatives to the Dias Ridge Trail Extension as proposed were dismissed from further consideration.

Public Involvement

The NPS and CDPR conducted public meetings and scoping activities starting with external scoping in March 2015. The NPS and CDPR have attended and presented at three public meetings:

- March 18, 2015 – Mill Valley Community Center
- March 21, 2015 – Trails Walk beginning at Golden Gate Dairy
- December 3, 2015 – Mill Valley Community Center

As a part of the scoping and EA/IS public review processes, the NPS received and considered comments from the public and stakeholders. The written comments were submitted during the open comment period for the EA/IS between November 24, 2015 and January 15, 2016. Comments prior to publication of the EA/IS were addressed in the EA/IS. Comments received on the EA/IS during the comment period were addressed in an Errata and Response to Comments attachment to the EA/IS. The most common themes of these comments included:

- Bicycle Impacts and Bicycle Use Enforcement
- Bike Calming Design Features on Dias Ridge Trail Extension
- Design Feature to Reduce Illegal Bicycle Use on Redwood Creek Trail and Miwok Trail
- Design Recommendations for Environmental Protection
- Trail Design for Equestrian Use and Safety
- Concerns for Bridge Design
- Concerns Regarding Trail Width
- Concerns Regarding Increased Traffic and parking Pressure
- Accessibility Accommodations
- Electric Vehicles on Trails

- Concerns Regarding Impact to Trees or Loss of Tree Access
- Compliance Questions
- Public Participation

Agency Consultation

During project planning, the NPS and CDPR consulted with the Regional Water Quality Control Board (RWQCB), the California Department of Fish and Wildlife (CDFW), and the U.S. Army Corps of Engineers (USACE). An agency site visit occurred in 2014, and conceptual designs for crib wall and culvert removals and bridge installation were reviewed by the agencies. In addition, NPS and CDPR will be applying to the USACE for a permit under Section 404 of the Clean Water Act (CWA) and to the State Water Resources Control Board for a Water Quality Certification under CWA Section 401. Consultation with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) regarding special-status species will occur during the permitting process with USACE. An existing Programmatic Biological Opinion related to California red-legged frogs exists between the USACE and USFWS, which covers actions under Nationwide Permit #27 (Wetland and Riparian Restoration and Creation Activities). Formal consultation through the USACE permitting process will verify the applicability of the Programmatic Biological Opinion and conservation measures for this project. The Biological Opinion states that measures to reduce and/or avoid adverse effects to the California red-legged frog described in the programmatic biological opinion will be fully implemented by the Corps through the applicant. Site visits with USFWS and NMFS occurred in spring, 2016. NPS and CDPR will submit a BA to USFWS and to NMFS for Section 7 Consultation. No construction will be implemented until all consultations/permitting with the agencies above is completed. Any agency requirements/conditions/conservation measures will be added to Attachment A - Construction Impact Reduction Measures.

In compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations at 36 CFR Part 800, NPS consulted with the California State Historic Preservation Officer (SHPO) regarding the Dias Trail Extension project. Based on information provided to the SHPO, NPS proposed a Finding of No Adverse Effects (FNAE). In a letter received by the NPS, December 13, 2016, the SHPO indicated it had no objections with the FNAE.

Garcia and Associates (GANDA), consultant for NPS and CDPR, conducted a cultural resources investigation and prepared a Final Cultural Resources Inventory and Evaluation Report for the project, November 2015. As part of the investigation, GANDA contacted the California Native American Heritage Commission (NAHC) and conducted a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University, Rohnert Park, CA. Both the records search of the Sacred Lands and NWIC failed to result in the identification of any cultural resources located within the Area of Potential Effects (APE). GANDA initiated consultation with the Federated Indians of Graton Rancheria (FIGR), September 2014, requesting any additional information regarding archeological or ethnographic resources within or near the APE. Although FIGR expressed no concerns with the project, FIGR requested that consultation continue as the project goes to construction.

Subsequent to publication of the EA/IS, NPS submitted a Negative Determination with the California Coastal Commission regarding the portion of the project that falls within the Coastal Zone Boundary. The Coastal Commission concurred with this Determination on October 31, 2016.

Why the Selected Alternative Will Not Have Significant Impacts

The NPS used the following NEPA criteria and factors defined in 40 CFR §1508.27 to evaluate whether the Selected Alternative will 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 considered individually or as a whole, the impacts of the Selected Alternative do not reach the level of significance requiring an environmental impact statement (EIS). Adverse impacts associated with implementation of the Selected Alternative will be temporary during construction. Mitigation Measures and Best Management Practices are incorporated into the proposed project to ensure any adverse impacts will be less than significant.

Under the Selected Alternative, cumulative impacts to the affected environmental resources are as follows:

Vegetation – Cumulative impacts to vegetation and plant communities are likely to be adverse, but less than significant and short-term, when combined with other past, present, and future projects. However, the impact of vegetation removal for the new Redwood Creek Trail segment and the Dias Ridge Trail Extension will be offset by the restoration and revegetation of the abandoned Redwood Creek Trail segment and the planting of the buffer between the Dias Ridge Trail Extension and Highway 1, including tree planting.

Wildlife - The proposed trail removal and realignment under the Selected Alternative will contribute a negligible increment to the total past, present and reasonably foreseeable future actions affecting wildlife in the Project area, but overall will contribute an overall beneficial impact to wildlife as a result of habitat enhancements for listed aquatic species.

Cultural Resources - Overall impacts to cultural resources within the project area will be negligible, short-term during construction activities when combined with other past, present, and future projects including other trail construction or maintenance, as well as fire management activities.

Air Quality – Cumulative impacts of construction on air quality in the project area combined with any other projects occurring at the same time and area will be negligible.

Noise/Soundscape – With the implementation of noise reduction measures during construction, cumulative noise impacts of the Selected Alternative with any other projects occurring at the same time or in the future will be negligible and short-term.

Park Operations – Overall, there will be negligible, short term impacts due to temporary and intermittent delays accessing the trail during construction in combination with any other trail maintenance projects occurring in the same vicinity. Following construction, there will be beneficial impacts to park operations due to a reduction in maintenance needs as a result of upgraded and improved trail conditions.

Geology Resources and Soils – The proposed trail removal, realignment, and extension will contribute to a negligible increment to the total past, present, and reasonably foreseeable future actions affecting the geology and soils in the Project area. Following project completion there will be long-term beneficial impacts to the geology and soils of the Redwood Creek watershed by reducing erosion.

Water Resources - Implementation of the Proposed Project Alternative will result in long-term, beneficial impacts to water quality within the Redwood Creek watershed. Cumulative impacts of the proposed trail removal, realignment, and extension will have negligible, short-term adverse impacts combined past, present and reasonably foreseeable future actions affecting water resources in the project area.

Visitor Experience - With the completion of trail improvements and the trail extension, there will be improved opportunities for public recreation in the adjoining parks, with overall cumulative short-term adverse effects and beneficial long-term effects.

Traffic and Transportation - The Selected Alternative will have a negligible effect on cumulative impacts on traffic and transportation when combined with other past, present, and future projects. The increase in traffic due to construction activities will be short-term and seasonal, and because of

the rural nature of the area, this project is unlikely to overlap with any other projects. No increase in visitor traffic is anticipated.

Visual Resources - Construction activities associated with the Selected Alternative will have short-term negligible effects on visual resources within the project area. While visual impacts will be present in the immediate vicinity of the trail improvements and extension during construction, there will be no long-term, cumulative adverse impacts following construction.

Degree of effect on Public Health or Safety

The Selected Alternative will have beneficial effects on Public Health and Safety. On the Redwood Creek Trail, improvements to the trail tread will reduce irregularities in the trail surface, reducing the chance of injury; trail improvements will increase line-of-sight distances at corners and curves; new bridge installations and other improvements will reduce erosion and muddy conditions during winter; and the installation of the Dias Ridge Trail Extension will reduce the length of road shoulder that trail users will have to use between Dias Ridge Trail and Redwood Creek Trail.

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 or wild and scenic rivers, but Redwood Creek is considered an ecologically critical area. 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 will have negligible short-term impacts on historic and cultural resources during construction, and long-term beneficial effects on Redwood Creek.

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

No controversy on the quality of the human environment from the proposed project was noted during scoping and from comments received during public review of the EA/IS, and no controversy is expected with the implementation of project actions.

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 Redwood Creek Trail Realignment and Dias Ridge Trail Extension 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 establish a precedent for future actions with significant effects in the project area, including NPS and CDPR parklands in the same vicinity, and does not represent a decision in principle about future considerations. Any planned future NPS trail actions will proceed independently of this project and receive a separate environmental analysis.

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 NPS evaluated the effect of the selected action on historic structures and landscapes and found that in accordance with 36 CFR Part 800.11 (d), certain historic properties will be affected by the proposed undertaking. Through the implementation of Impact Reduction Measures (in EA/IS Section 3.5) as part of the project, impacts to cultural resources from construction activities will be avoided or minimized. The measures require the presence of a qualified archaeologist and the

recovery and documentation of features. The NPS conducted consultation with the State Historic Preservation Officer who concurred there will be no adverse effect.

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

The NPS has determined that the selected action is likely to have no adverse effect on Coho salmon and steelhead or with critical habitat in Redwood Creek for these species. The realignment of a segment of Redwood Creek Trail is expected to have a beneficial effect on both riparian and instream species by decommissioning a segment of trail in the creek floodplain and installing a replacement trail segment outside of the flood plain. Replacing fords across the creek and crib-wall supported crossings of drainages to the creek with bridges will reduce sediment impacts on the creek and overall have a beneficial effect.

Whether the action threatens a violation of federal, state, or local environmental protection law

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

Conclusion

Implementation of the Selected Alternative for the Redwood Creek Trail Realignment and Dias Ridge Trail Extension Project will not have significant impacts on the human environment. The determination is sustained by the analysis in the EA, agency consultations, and the inclusion and consideration of public review to reduce or avoid impacts. Adverse environmental impacts that could occur are generally negligible in intensity and duration, and will be less than significant. Beneficial impacts range from negligible to moderate. 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, will have significant effects on the human environment. Requirements of NEPA have been satisfied and preparation of an Environmental Impact Statement is not required. When this FONSI is executed, GGNRA will implement the Selected Alternative as soon as practical.

Recommended:

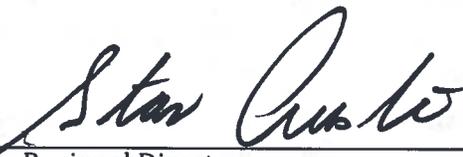


Laura E. Joss, General Superintendent
Golden Gate National Recreation Area
National Park Service

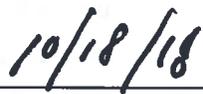


Date

Approved:



Stan Austin, Regional Director
Pacific West Region
National Park Service



Date

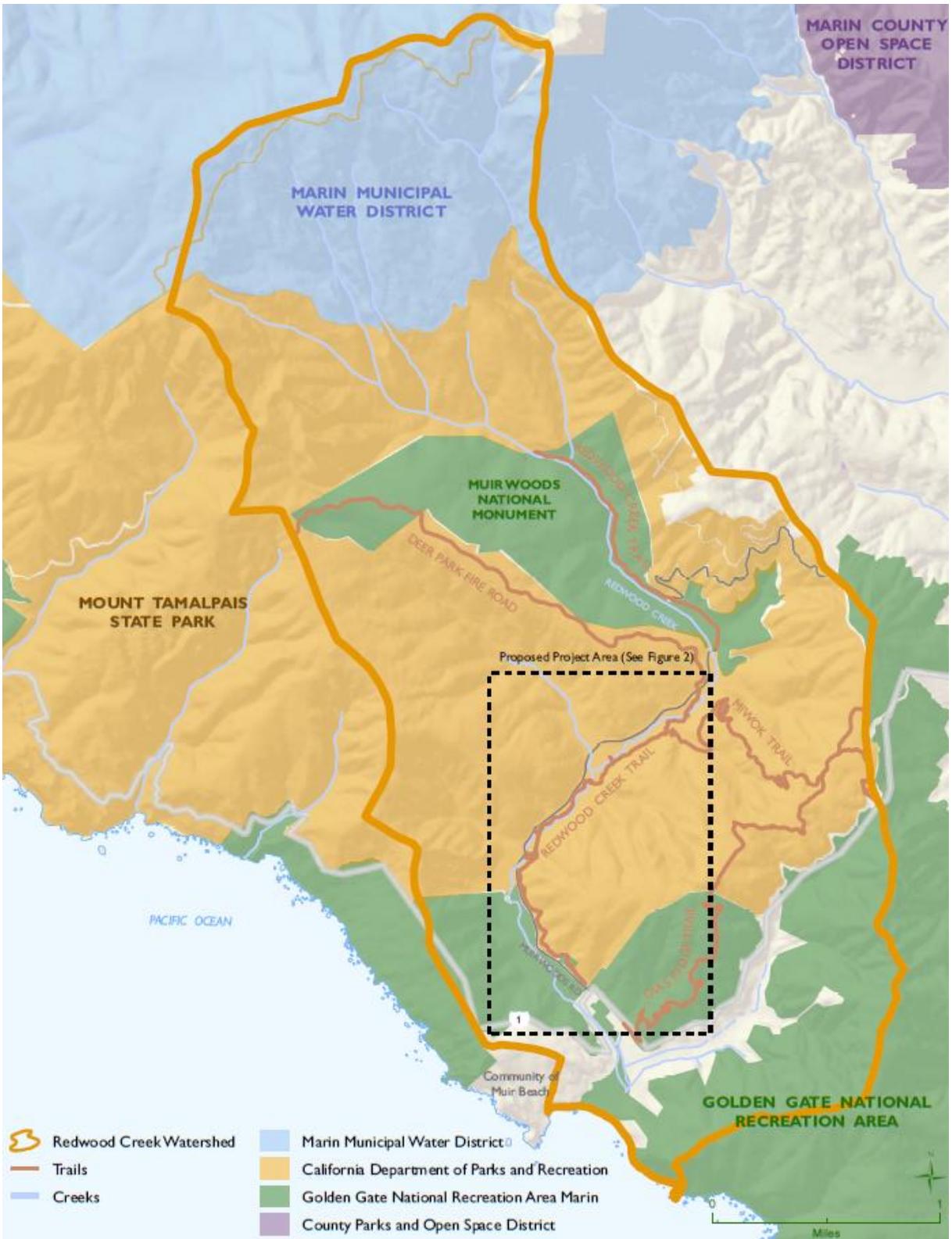


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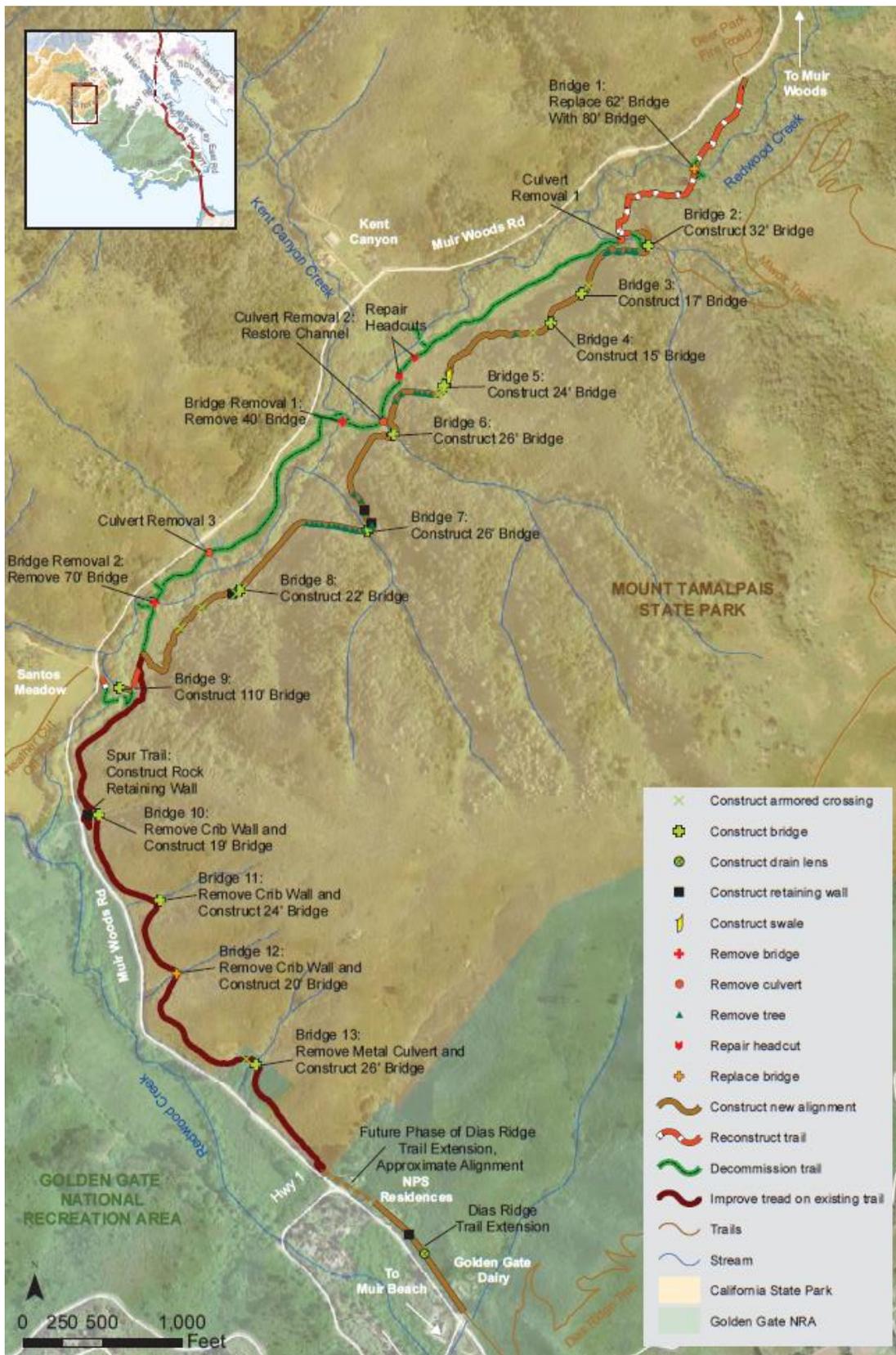


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On Redwood Creek Trail, 3 bridges, 4 culverts, and 3 crib walls will be removed and 13 new bridges will be installed. These improvements will create a safer, more sustainable trail with reduced maintenance needs while also benefiting water quality in Redwood Creek, promoting natural drainage, reducing fine sediment delivery to the creek, facilitating coarse sediment delivery, and protecting habitat for listed aquatic species. In addition, past actions have disrupted the connectivity of the creek and its floodplain; moving the trail out of the floodplain will allow for future projects to reconnect Redwood Creek to its floodplain. This will further improve hydrologic and geomorphic functions in the watershed.

The Dias Ridge Trail Extension will address a 1,300-foot gap between the southern ends of the Redwood Creek and Dias Ridge trails at Highway 1. There is little to no separation between motorists and any pedestrians, equestrians, or bikers using the highway shoulder. The Dias Ridge Trail Extension will be parallel to, but separate from, the east side of Highway 1. When complete, the extension will connect the Dias Ridge Trail at Golden Gate Dairy to the Redwood Creek Trail at Muir Woods Road, eliminating the need for visitors to use the highway shoulder.

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Selected Alternative

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- Developing a 1.1 mile segment of new trail outside of the Redwood Creek floodplain between the Miwok Trail and Santos Meadow, while decommissioning and abandoning a corresponding 0.9 mile of existing trail currently located in the floodplain;
- Removing culverts and bridges in the abandoned trail section and restoring the land;
- Eliminating fords and replacing them with bridges;
- Removing various existing culverts and crib walls on channels draining to the creek and replacing them with bridges; and
- Repairing and rehabilitating the trail tread south of Santos Meadow to Muir Woods Road, beginning from the end of the new trail segment.

Overall, 3 bridges, 4 culverts, and 3 crib walls will be removed and 13 new bridges will be installed on the Redwood Creek Trail. The trail width will be 4 feet, except for some sections that will be 5-foot wide to allow passing and at turns or grade changes with line-of-sight concerns. The Santos Meadow Bridge will be 6 feet wide.

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Other Alternatives Considered and Dismissed from Further Analysis

The NPS considered, but dismissed the following alternatives. No additional alternatives to the Redwood Creek Trail Realignment or the Dias Ridge Trail Extension were suggested during scoping.

Alternative to Maintain the Northern Section of Redwood Creek Trail in Current Location

Consideration was given to retaining the northern portion of Redwood Creek Trail in its current location, while improving trail features and creek and drainage crossings. However, this would not achieve the project objectives of creating a sustainable trail alignment, moving the trail out of the floodplain to allow for future floodplain restoration, or reducing impacts on the aquatic habitat for listed species to the same degree as a realignment of the trail section out of the floodplain.

Alternative Trail Extension Alignments for the Dias Ridge Trail

Alternatives were considered for the Dias Ridge Trail Extension between the existing Dias Ridge Trail and the Redwood Creek Trail along Highway 1. These included:

- A trail alignment that would run behind (east of) the NPS residences and the life estate tenancy property located on the east side of Highway 1, and

- Expansion of the Highway 1 shoulder to allow for a multi-use trail immediately adjacent to the highway.

The first of these alternatives would create a steeper, less direct, and longer trail than a trail in front of the residences. It would also require retaining walls be installed due to the hillside slope. The longer length of this alternative and its construction requirements would cause more damage to existing native vegetation than the proposed Project. Moreover, compliance with the Architectural Barriers Act Accessibility Standard would be difficult to achieve. If the alternative behind the residences was built, many trail users would likely continue to traverse along the highway shoulder, as is current practice, rather than use this alternative route.

The second alternative, to expand the highway shoulder to accommodate a trail, would require removal of trees within an historic wind row and leave trail users vulnerable to passing vehicles. Users of this shoulder-expansion alternative would still be adjacent to the highway rather than separated from the roadway by topography and landscaping. As this trail is a popular equestrian trail, being adjacent to the highway traffic and potentially unsafe to visitors, this alternative does not meet the purpose and need of this project. This expansion would likely require additional walls due to the adjacent slope. This alternative would be within Caltrans right of way and would require some realignment of the road. NPS has no control over the road and would need Caltrans' agreement for any encroachment.

For these reasons, both alternatives to the Dias Ridge Trail Extension as proposed were dismissed from further consideration.

Public Involvement

The NPS and CDPR conducted public meetings and scoping activities starting with external scoping in March 2015. The NPS and CDPR have attended and presented at three public meetings:

- March 18, 2015 – Mill Valley Community Center
- March 21, 2015 – Trails Walk beginning at Golden Gate Dairy
- December 3, 2015 – Mill Valley Community Center

As a part of the scoping and EA/IS public review processes, the NPS received and considered comments from the public and stakeholders. The written comments were submitted during the open comment period for the EA/IS between November 24, 2015 and January 15, 2016. Comments prior to publication of the EA/IS were addressed in the EA/IS. Comments received on the EA/IS during the comment period were addressed in an Errata and Response to Comments attachment to the EA/IS. The most common themes of these comments included:

- Bicycle Impacts and Bicycle Use Enforcement
- Bike Calming Design Features on Dias Ridge Trail Extension
- Design Feature to Reduce Illegal Bicycle Use on Redwood Creek Trail and Miwok Trail
- Design Recommendations for Environmental Protection
- Trail Design for Equestrian Use and Safety
- Concerns for Bridge Design
- Concerns Regarding Trail Width
- Concerns Regarding Increased Traffic and parking Pressure
- Accessibility Accommodations
- Electric Vehicles on Trails

- Concerns Regarding Impact to Trees or Loss of Tree Access
- Compliance Questions
- Public Participation

Agency Consultation

During project planning, the NPS and CDPR consulted with the Regional Water Quality Control Board (RWQCB), the California Department of Fish and Wildlife (CDFW), and the U.S. Army Corps of Engineers (USACE). An agency site visit occurred in 2014, and conceptual designs for crib wall and culvert removals and bridge installation were reviewed by the agencies. In addition, NPS and CDPR will be applying to the USACE for a permit under Section 404 of the Clean Water Act (CWA) and to the State Water Resources Control Board for a Water Quality Certification under CWA Section 401. Consultation with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) regarding special-status species will occur during the permitting process with USACE. An existing Programmatic Biological Opinion related to California red-legged frogs exists between the USACE and USFWS, which covers actions under Nationwide Permit #27 (Wetland and Riparian Restoration and Creation Activities). Formal consultation through the USACE permitting process will verify the applicability of the Programmatic Biological Opinion and conservation measures for this project. The Biological Opinion states that measures to reduce and/or avoid adverse effects to the California red-legged frog described in the programmatic biological opinion will be fully implemented by the Corps through the applicant. Site visits with USFWS and NMFS occurred in spring, 2016. NPS and CDPR will submit a BA to USFWS and to NMFS for Section 7 Consultation. No construction will be implemented until all consultations/permitting with the agencies above is completed. Any agency requirements/conditions/conservation measures will be added to Attachment A - Construction Impact Reduction Measures.

In compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations at 36 CFR Part 800, NPS consulted with the California State Historic Preservation Officer (SHPO) regarding the Dias Trail Extension project. Based on information provided to the SHPO, NPS proposed a Finding of No Adverse Effects (FNAE). In a letter received by the NPS, December 13, 2016, the SHPO indicated it had no objections with the FNAE.

Garcia and Associates (GANDA), consultant for NPS and CDPR, conducted a cultural resources investigation and prepared a Final Cultural Resources Inventory and Evaluation Report for the project, November 2015. As part of the investigation, GANDA contacted the California Native American Heritage Commission (NAHC) and conducted a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University, Rohnert Park, CA. Both the records search of the Sacred Lands and NWIC failed to result in the identification of any cultural resources located within the Area of Potential Effects (APE). GANDA initiated consultation with the Federated Indians of Graton Rancheria (FIGR), September 2014, requesting any additional information regarding archeological or ethnographic resources within or near the APE. Although FIGR expressed no concerns with the project, FIGR requested that consultation continue as the project goes to construction.

Subsequent to publication of the EA/IS, NPS submitted a Negative Determination with the California Coastal Commission regarding the portion of the project that falls within the Coastal Zone Boundary. The Coastal Commission concurred with this Determination on October 31, 2016.

Why the Selected Alternative Will Not Have Significant Impacts

The NPS used the following NEPA criteria and factors defined in 40 CFR §1508.27 to evaluate whether the Selected Alternative will 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 considered individually or as a whole, the impacts of the Selected Alternative do not reach the level of significance requiring an environmental impact statement (EIS). Adverse impacts associated with implementation of the Selected Alternative will be temporary during construction. Mitigation Measures and Best Management Practices are incorporated into the proposed project to ensure any adverse impacts will be less than significant.

Under the Selected Alternative, cumulative impacts to the affected environmental resources are as follows:

Vegetation – Cumulative impacts to vegetation and plant communities are likely to be adverse, but less than significant and short-term, when combined with other past, present, and future projects. However, the impact of vegetation removal for the new Redwood Creek Trail segment and the Dias Ridge Trail Extension will be offset by the restoration and revegetation of the abandoned Redwood Creek Trail segment and the planting of the buffer between the Dias Ridge Trail Extension and Highway 1, including tree planting.

Wildlife - The proposed trail removal and realignment under the Selected Alternative will contribute a negligible increment to the total past, present and reasonably foreseeable future actions affecting wildlife in the Project area, but overall will contribute an overall beneficial impact to wildlife as a result of habitat enhancements for listed aquatic species.

Cultural Resources - Overall impacts to cultural resources within the project area will be negligible, short-term during construction activities when combined with other past, present, and future projects including other trail construction or maintenance, as well as fire management activities.

Air Quality – Cumulative impacts of construction on air quality in the project area combined with any other projects occurring at the same time and area will be negligible.

Noise/Soundscape – With the implementation of noise reduction measures during construction, cumulative noise impacts of the Selected Alternative with any other projects occurring at the same time or in the future will be negligible and short-term.

Park Operations – Overall, there will be negligible, short term impacts due to temporary and intermittent delays accessing the trail during construction in combination with any other trail maintenance projects occurring in the same vicinity. Following construction, there will be beneficial impacts to park operations due to a reduction in maintenance needs as a result of upgraded and improved trail conditions.

Geology Resources and Soils – The proposed trail removal, realignment, and extension will contribute to a negligible increment to the total past, present, and reasonably foreseeable future actions affecting the geology and soils in the Project area. Following project completion there will be long-term beneficial impacts to the geology and soils of the Redwood Creek watershed by reducing erosion.

Water Resources - Implementation of the Proposed Project Alternative will result in long-term, beneficial impacts to water quality within the Redwood Creek watershed. Cumulative impacts of the proposed trail removal, realignment, and extension will have negligible, short-term adverse impacts combined past, present and reasonably foreseeable future actions affecting water resources in the project area.

Visitor Experience - With the completion of trail improvements and the trail extension, there will be improved opportunities for public recreation in the adjoining parks, with overall cumulative short-term adverse effects and beneficial long-term effects.

Traffic and Transportation - The Selected Alternative will have a negligible effect on cumulative impacts on traffic and transportation when combined with other past, present, and future projects. The increase in traffic due to construction activities will be short-term and seasonal, and because of

the rural nature of the area, this project is unlikely to overlap with any other projects. No increase in visitor traffic is anticipated.

Visual Resources - Construction activities associated with the Selected Alternative will have short-term negligible effects on visual resources within the project area. While visual impacts will be present in the immediate vicinity of the trail improvements and extension during construction, there will be no long-term, cumulative adverse impacts following construction.

Degree of effect on Public Health or Safety

The Selected Alternative will have beneficial effects on Public Health and Safety. On the Redwood Creek Trail, improvements to the trail tread will reduce irregularities in the trail surface, reducing the chance of injury; trail improvements will increase line-of-sight distances at corners and curves; new bridge installations and other improvements will reduce erosion and muddy conditions during winter; and the installation of the Dias Ridge Trail Extension will reduce the length of road shoulder that trail users will have to use between Dias Ridge Trail and Redwood Creek Trail.

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 or wild and scenic rivers, but Redwood Creek is considered an ecologically critical area. 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 will have negligible short-term impacts on historic and cultural resources during construction, and long-term beneficial effects on Redwood Creek.

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

No controversy on the quality of the human environment from the proposed project was noted during scoping and from comments received during public review of the EA/IS, and no controversy is expected with the implementation of project actions.

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 Redwood Creek Trail Realignment and Dias Ridge Trail Extension 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 establish a precedent for future actions with significant effects in the project area, including NPS and CDPR parklands in the same vicinity, and does not represent a decision in principle about future considerations. Any planned future NPS trail actions will proceed independently of this project and receive a separate environmental analysis.

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 NPS evaluated the effect of the selected action on historic structures and landscapes and found that in accordance with 36 CFR Part 800.11 (d), certain historic properties will be affected by the proposed undertaking. Through the implementation of Impact Reduction Measures (in EA/IS Section 3.5) as part of the project, impacts to cultural resources from construction activities will be avoided or minimized. The measures require the presence of a qualified archaeologist and the

ATTACHMENT A

Construction Impact Reduction Measures

For the small section of the Redwood Creek Trail on GGNRA land, the following Best Management Practices (BMPs) and Mitigation Measures (MMs) will be implemented by a CDPR Environmental Scientist, a GGNRA Natural Resource Specialist, and the Golden Gate National Parks Conservancy (GGNC) Project Manager during construction and are integrated in the project design. For the Dias Ridge Trail Extension the relevant BMPs and MMs will be implemented by a GGNRA Natural Resource Specialist and the GGNPC Project Manager. The Project will also comply with all required permits and approvals. The following measures were identified to eliminate or minimize the degree of adverse effects that could otherwise result from project implementation. These measures will be implemented during construction, as appropriate for the specific activities being conducted.

Vegetation

- All tools and equipment used on the Project will be required to be thoroughly cleaned of soil and plant material prior to entering the project area. If equipment temporarily leaves the project area, it will be cleaned prior to re-entering the project area.
- Soil disturbance during grading activities will be minimized to the extent possible to reduce habitat loss, potential for introduction or spread of invasive non-native plant species, to protect topsoil resources, and to reduce potential habitat for non-native invasive plant species.
- Vegetation disturbance will be limited and restricted to project areas. Riparian vegetation within and adjacent to project areas will be protected to the greatest extent possible and serve as a sediment buffer.
- Native plants will be salvaged during trail cutting and excavation as needed for revegetation. Additional plants will be grown in native plant nurseries. Revegetation with native species will occur on all disturbed areas adjacent to channels.
- Riparian trees will be protected to the greatest extent possible. Where removal of riparian trees cannot be avoided, species which resprout will be cut as high on the bole as possible to retain the structure of the tree, allow for sucker development, and retain roots for bank stability.
- After tree felling, roots will be left in place to prevent erosion where possible.
- All cut native vegetation will be retained on site and used to cover disturbed areas or block off decommissioned trails. At Culvert 2 Removal, the project hydrologist will direct placement of some wood debris within the channel.
- Vegetation will be cut or removed outside of bird nesting and bat maternity season or following bird nest and bat roosting surveys that demonstrate no nesting birds or roosting bats will be disturbed.
- Rock used for armoring, retaining walls, or other features will be imported from quarries that certify their material as weed seed free.

Erosion and Sediment Controls

The project will include BMP strategies to minimize erosion and sediment discharges to Redwood Creek and its tributaries. Erosion and sediment control practices will include:

- Construction of the Redwood Creek Trail Realignment and all work adjacent to Redwood Creek or its tributaries will occur between June 1 and October 31. No soil disturbance within 100 ft. of Redwood Creek will occur after October 31 and all disturbed soils will be stabilized by October 31. The Dias Ridge Trail Extension will not be limited to a June-October timeframe and will be completed in one construction period.
- Disturbance will be limited to project areas and pre-defined staging areas. All project limits will be clearly marked prior to the beginning of ground disturbing activities. No disturbance will occur beyond these limits. If incidental off trail temporary storage is needed, it will be limited to disturbed areas, will be confined to a clear location, will be monitored for wildlife prior to use, and be underlain with geo-textile fabric.
- Workers will receive an erosion, sediment control and pollution prevention training and will be instructed to avoid conducting activities beyond the construction zone (including storage of tools, materials, soil, etc.).
- Prior to construction, erosion and sediment control measures such as silt fences, gravel bag dikes and fiber rolls (wattles) will be installed as needed to eliminate the potential for sediment discharge in storm water into Redwood Creek and into any intermittently active drainages that empty into Redwood Creek. This will include installing a sediment barrier (wattles and/or silt fence) between the work area and Redwood Creek (or any active drainage) and covering disturbed soil with mulch and/or geo-fabrics. Sediment will be removed from sediment control devices, such as silt fences, when sediment has reached 1/3 height of the exposed portion of the device and the sediment added to soil stockpiles. Erosion and sediment control materials will be completely biodegradable. Erosion control measures will not contain plastic netting or monofilament that could trap small animals. Only rice straw-filled fiber rolls and certified weed-seed free rice straw mulch will be permitted, to prevent inadvertent introduction of wheat and barley species.
- Staging and stockpiling areas will be in previously disturbed sites to minimize the amount of ground disturbance. These areas will be located away from sensitive habitat areas. Stockpiles will be outside of drainages, contained with appropriate sediment controls, and covered with geo-fabrics or plastic sheeting. All sediment control devices will be maintained regularly for the entire lifetime of the stockpile. All staging and stockpiling areas will be returned to pre-construction conditions following construction completion.
- Sites where activities result in exposed soil will be stabilized to prevent erosion as soon as feasible after project activities are complete.
- Following construction disturbed or bare soil adjacent to channels or drainages will have sediment controls installed along contours and will be covered with rolled erosion control material such as coir blankets. Passive (placing cut native vegetation) and active (planting) revegetation will be practiced.
- After completing construction, exposed soil outside the trail footprint will be covered with local leaf litter and native vegetation cut within project area as soon as possible. This mulch will provide a source of seeds to reestablish native vegetation and reduce the risk of non-native seeds germinating. Ideally, the litter and duff should be collected from surrounding areas, but not denude the collection area. At least 50 percent of the material will be left in place and vegetation will not be disturbed. In the absence of native vegetation, certified weed free rice straw may be used.
- Soils excavated during ground-disturbing activities will be reused to the extent that these locally-derived materials are found to be clean and weed-free. Any such reuse is subject to applicable NPS and CDPR policies and guidance.

Water Resource Protection and Pollution Prevention

The project will include BMP strategies to prevent pollution from sediment, petroleum products, hydraulic fluid and other fluids related to equipment and power tool use. Proper storage, use, and disposal of chemicals, fuels, and other toxic materials will be required. Soil, silt, bark, rubbish, raw cement, concrete (including washings), oil or other petroleum products, or other substances that could affect water quality and be harmful to aquatic biota will be prevented from entering the soil and/or waters of the State/US. Fueling and maintenance of tools will not occur adjacent to sensitive resources (e.g., the creek).

- A Pollution Prevention Plan will be developed which will include BMPs and inspection procedures.
- All equipment and power tools will be:
 - Inspected for fuel or other leaks before being brought on site. Tools showing signs of leaking will not be brought on site. Tools will be inspected for oil and gas leaks regularly and will be repaired or removed immediately if leaks are found,
 - stored in staging areas with perimeter controls (wattles or sandbags) to contain potential spills, and will be staged over impermeable materials to ensure that no spilled material can enter the soil, and
 - Refueled only in upland areas to prevent fuel spills near sensitive habitats. Fueling will occur over a non-permeable surface, such as a drip pan or tarp, and with a perimeter protection, such as an absorbent wattle, on the downhill side of the fueling area.
- For all vehicles and equipment operated in or near the creek:
 - All vehicles and equipment will be kept clean. Excessive build-up of oil or grease will be avoided.
 - All equipment used in the creek channel will be inspected for leaks each day prior to initiation of work. Action will be taken to prevent or repair leaks, if necessary.
 - No fueling or maintenance actions will occur in the creek. Vehicle and equipment maintenance activities will be conducted off-site or in a designated, protected area away from the channel where vehicle fluids and spills can be handled with reduced risk to water quality and the creek bed. Equipment will not be staged in the creek channel overnight.
- Any chemicals stored on site (for fueling or equipment maintenance) will be stored in a locked container with secondary containment in case of leaks.
 - If maintenance must occur on-site, it will occur in designated areas located at least 100 ft. from drainages and channels, and protected with perimeter controls and non-permeable surfaces placed under the equipment. Secondary containment, such as a drain pan or drop cloth, to catch spills or leaks will be used when removing or changing fluids. Fluids will be stored in appropriate containers with covers, and properly recycled or disposed of off-site.
 - Emergency spill containment and clean-up materials will be kept on the project site.
- During environmental awareness training, all workers will receive training on the importance of pollution prevention, preventing spills and appropriate spill clean-up actions.
- Only clean rock/ aggregate from near the project area or imported specifically for this trail project will be used for trail stabilization or trail tread. No concrete rubble or other construction waste will be used.
- All trash and construction debris will be removed daily from the project site and disposed of appropriately offsite.

- During bridge decking and railing installation a sheet of Visqueen ® or similar material will be attached under the bridge to catch wood dust, metal dust, loose hardware, etc., to avoid pollutants entering channels. These materials will be bagged and removed from the site.

Wildlife

The measures described below may be augmented or modified based on consultation for Section 7 of the Endangered Species Act with the United States Fish and Wildlife Service and National Marine Fisheries Service, or in the requirements of the Lake and Streambed Alteration Agreement with the California Department of Fish and Wildlife.

- Prior to engaging in construction activities, all personnel will participate in an environmental awareness training session conducted by a qualified biologist. The biological monitor will train all workers on sensitive species potentially in the area, and conservation measures in place for the project. Training sessions will identify NPS and CDPR staff resource contacts and provide information on special-status species or other sensitive resources in the work area; markings for the limit line of disturbance; thresholds that will trigger a change in implementation techniques or require a halt in project implementation; prohibitions on feeding resident wildlife; and proper disposal of food waste and garbage to discourage feeding by wildlife. Personnel will also receive training on pollution prevention, prevention of spills, and spill clean-up actions. Upon completion of training, employees or contracting crews will be required to sign a form stating that they attended the training and understand all the conservation and protection measures.
- Prior to construction, a qualified biological monitor will survey work areas for wildlife, including aquatic amphibians and reptiles. In addition, a qualified biological monitor will be present onsite or available on-call during work activities to relocate wildlife to an offsite location. The biological monitor will:
 - have experience in the identification and behavior of special-status wildlife species that could be affected by the proposed action, habitat assessment experience, knowledge of the natural resources within the action area, and experience with trail projects,
 - be responsible for ensuring that best management practices are being properly implemented, resource avoidance measures and housekeeping practices are upheld, and work is conducted in accordance with all required permits, policies, regulations, and plans,
 - Have the authority to stop work if necessary to protect biological resources. If the monitor requests that work be stopped due to take of any listed species, the US Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife will be notified within one working day via email or telephone, and
 - Be the contact source for any employee or contractor who might inadvertently kill or injure a federally or state listed species or who finds a dead, injured or entrapped individual. The representative will be identified during the crew training program. The representative's name and telephone number will be provided to the Service prior to the initiation of ground disturbance activities.
- At the end of each workday, an escape ramp will be placed at each end of any construction-related open trenches or holes to allow trapped animals to climb out. The ramp may be constructed of soil, wood or another suitable material placed at an angle no greater than 30 degrees.
- To reduce daytime noise and potential disturbance to wildlife species due to construction, crews will muffle or control noise from power tools through implementation of the following measures:
 - Equipment and power tools will use the best available noise control techniques (e.g., improved mufflers, use of intake silencers, etc.).

- Northern spotted owl surveys will be conducted to determine where northern spotted owl nests are located. Noise-inducing work with ¼ mile of northern spotted owl nests will occur outside of northern spotted owl (February 1- July 31) core breeding season.

Nesting Bird and Raptor Protection:

- To the greatest extent possible, activities will be planned and conducted outside the bird-nesting season (January 1 to July 31 for raptors, and March 1 to July 31 for landbirds).
- Northern spotted owls are known to occur in Muir Woods National Monument and Mount Tamalpais State Park and may be present in the project vicinity, particularly the northern end. Prior to construction a survey will be conducted to determine if nesting owls are present in the area and will be at risk of being disturbed by planned construction activities. (See noise reduction requirements above.)
- In the area of the realigned trail segment, vegetation will be maintained at a height of less than 12 inches throughout the landbird nesting season to discourage the nesting of such bird species where the trail is to be installed. Any vegetation (i.e., trees, shrub, grasses) taller than 12 inches that is not removed within the timing window specified for vegetation cutting and removal will be subject to the additional measure, below.
 - If work is conducted within the nesting season, prior to the onset of construction involving the cutting of vegetation or ground disturbing activities using heavy machinery, a qualified wildlife biologist will be retained to conduct pre-construction surveys for raptors and nesting birds within suitable nesting habitat in a 300-foot radius of the construction area. If no active nests are detected during surveys, activities may proceed. If active nests are detected within the construction area, a biologist will establish a suitable nest buffer in coordination with NPS and CDPR where no work can occur until the young have successfully fledged or the nests have been otherwise abandoned.

Aquatic Species and Amphibians:

- Construction will not occur in or near the creek during migration and spawning seasons of protected species, including Coho salmon and steelhead. No in-water construction activities or creek dewatering will occur prior to July.
- Prior to working in wetted channels, channels will be dewatered. Prior to dewatering, native fish, tadpoles, and other vertebrates will be excluded or removed and relocated outside of the project area by a qualified biologist. Fish will be netted or chased from each individual area where in-channel work will occur. Electrofishing will be used to capture any remaining individuals. Captured fish will be placed in aerated holding containers and transferred to pool habitats outside of the project area. A qualified biologist shall monitor the construction site during placement and removal of channel diversions and coffer dams to ensure any effects to ESA-listed salmonids are minimized. All materials placed for creation of coffer dams will be removed upon completion of activities.
- In California red-legged frog habitat (as determined by qualified biologists), a biological monitor will search all work localities for the presence of California red-legged frogs prior to and during ground-disturbing activities. The search area will encompass a 50-foot radius around the work sites. All rodent burrows, leaf litter deeper than 2 inches, or other obvious refugia will be surveyed for the presence of the species. To prevent direct injury to California red-legged frogs, removal of vegetation within suitable frog habitat will be accomplished by a progressive cutting of vegetation from the overstory level to ground level to allow frogs to move out of the work area. Should any frogs be observed, activities will cease until the animal moves out of the work area or is removed and relocated by a permitted biologist. Captured frogs will be relocated to suitable

habitat outside of the construction zone, either upstream or downstream of the construction zone.

Protected Bat Populations:

- The project activity with a potential to impact breeding bats will be tree removal; therefore trees will be removed between September 1 and January 31, outside of bat maternity season. If trees cannot be removed during this time period, then a bat habitat assessment will be conducted by a qualified biologist for those trees; and tree removal will proceed based on recommendations from the biologist.

Woodrat Nests:

- Any woodrat nests encountered during construction activities will be avoided, if possible, by establishing a minimum protection buffer of 50 feet around each nest. If nests are identified in areas where heavy equipment operation or excavation is integral to the project design, then the nests will be dismantled prior to grading or vegetation removal activities in a careful, gradual process that will allow any woodrats in the nest to escape into adjacent undisturbed habitat. Surveys will be conducted to determine the likelihood that nests are inhabited, such as a cleared entrance, for example, or recently placed twigs on the nest. A clearly unoccupied nest in an area integral for construction will be dismantled during the routine construction period; however, if the nest appears to be occupied, it will not be dismantled until the non-breeding season of October-November. If young are encountered during nest dismantling, the dismantling activity should be stopped and the material replaced back on the nest and the nest should be left alone and rechecked in 2-3 weeks to see if the young are out of the nest or capable of being out on their own (as determined by a qualified biologist); once the young can fend for themselves, the nest dismantling will continue. Due to the possibility of exposure to hanta virus known to be carried by woodrats, any dismantling or observations of the woodrat nests will be conducted only in a manner that fully protects the health of crews, equipment operators, or surveyors.

Phytophthora Protections

All project activities that could spread Phytophthora species (plant-damaging oomycetes or water molds) to new locations will be subject to BMPs developed by the California Oak Mortality Task Force and available online at http://www.suddenoakdeath.org/html/best_management_practices.html.

Phytophthora BMPs include but are not limited to:

- Informing personnel that they are working in a Phytophthora-infested area, unauthorized movement of soil material is prohibited, and the intent of these prevention measures is to prevent spread of Phytophthora.
- Removing or washing-off accumulations of plant debris, soil, and mud from shoes, boots, vehicles, and heavy equipment, etc. before leaving project area, and cleaning with denatured alcohol or similar materials as needed.

Cultural Resources

A cultural resource monitoring plan will be prepared to ensure that ground-disturbing activities within the project area result in no adverse effects to buried resources. The monitoring program will include oversight of project schedules and excavation areas to ensure that important opportunities for archaeological discovery are realized, and that potentially buried archaeological deposits are recognized in the course of active excavation and restoration.

Inadvertent Discoveries:

- If buried cultural resources are inadvertently discovered during ground-disturbing activities,

work shall stop in that area and within a 100-foot radius of the find until a qualified archaeologist can assess the significance of the find. Alternatively, an archaeologist and Native American monitor may monitor ground disturbances in vicinity of the site to ensure that such discoveries are protected until they can be properly recorded and assessed, and management decisions can be made about their treatment. Avoidance in place or no adverse effect from project actions are the preferred approaches to all discoveries that are potentially eligible for listing on the National Register of Historic Places (NRHP). Inadvertent discoveries will be treated in accordance with 36 CFR 800.13 (Protection of Historic Properties: Post-review discoveries). The archaeological resource will be assessed for its eligibility for listing on the NRHP in consultation with the State Historic Preservation Office (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 will be made. If the site will be adversely affected, a treatment plan will also be prepared as needed during the assessment of the site's significance. Assessment of inadvertent discoveries may require archaeological excavations or archival research to determine resource significance. Treatment plans will fully evaluate avoidance, project redesign, and data recovery alternatives before outlining actions proposed to resolve adverse effects.

Discovery of Human Remains:

- If human skeletal remains are encountered, all work shall stop in the vicinity of the discovery, and the find will be secured and protected in place. The Marin County coroner and Park Archaeologist will 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 will be treated in accordance with the Native American Graves Protection and Repatriation Regulations at 43 CFR 10.4 (Inadvertent discoveries). The coroner will also contact the Native American Heritage Commission (NAHC; pursuant to Section 7050.5[c] of the California Health and Safety Code) and the County Coordinator of Indian Affairs.

Visitor Experience, Park Operations, and Safety:

- Trail construction zones will be identified and signs or fencing will be placed to prevent visitors from entering the construction area or using closed sections of trail.
- Visitor information regarding Project activities (e.g., construction-related activity that could affect visitors—noise, trail closures or detours, etc.) will be provided via the park website, signage, field staff, or a park newsletter to enhance the public's understanding of the issues and to help them better plan their visits.
- For each phase of work, the NPS and CDPR will develop a construction management plan to sequence construction activities to minimize disruption to existing facilities and services. The plan will include information on days/hours of operation, trail closures, times in which particularly loud or noisy operations could occur, safety protocols, etc.
- During construction, contractors and CCC crews will ensure that all active construction, staging, and stockpile areas are fenced so as to exclude the public. Signs will be conspicuously posted to inform the public about the need for caution and to safely route visitors around construction areas.
- Residents or businesses located in proximity to project elements (e.g., residences on Highway 1) will be provided with at least 30 days advance notification of any planned construction activity in the vicinity. A contact telephone number for a construction representative will be conspicuously posted on construction site fences and will be included in the written notification of the construction schedule sent to nearby residents and posted on the website.

Noise/Soundscape:

- All equipment will be operated and maintained to minimize noise generation.
- Contractors will ensure that power equipment (vehicles, heavy equipment, and hand equipment such as chainsaws) is equipped with original manufacturer's sound-control devices, or alternate sound control that is no less effective than that provided as original equipment. Equipment will be operated and maintained to meet applicable standards for construction noise generation. No equipment will be operated with an unmuffled exhaust.
- Contractors will limit the idling of motors except as necessary for safe operations.
- Project-related activities could occur seven days per week and will generally be limited to the hours of 7:00 a.m. to 6:00 p.m. On the Dias Ridge Trail Extension, project activities requiring heavy equipment use will be limited to weekdays from 8:00 a.m. to 6:00 p.m. Work within ¼-mile of a northern spotted owl nest will be consistent with the noise restrictions identified in the Wildlife section above.
- 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 CDPR-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.

recovery and documentation of features. The NPS conducted consultation with the State Historic Preservation Officer who concurred there will be no adverse effect.

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

The NPS has determined that the selected action is likely to have no adverse effect on Coho salmon and steelhead or with critical habitat in Redwood Creek for these species. The realignment of a segment of Redwood Creek Trail is expected to have a beneficial effect on both riparian and instream species by decommissioning a segment of trail in the creek floodplain and installing a replacement trail segment outside of the flood plain. Replacing fords across the creek and crib-wall supported crossings of drainages to the creek with bridges will reduce sediment impacts on the creek and overall have a beneficial effect.

Whether the action threatens a violation of federal, state, or local environmental protection law

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

Conclusion

Implementation of the Selected Alternative for the Redwood Creek Trail Realignment and Dias Ridge Trail Extension Project will not have significant impacts on the human environment. The determination is sustained by the analysis in the EA, agency consultations, and the inclusion and consideration of public review to reduce or avoid impacts. Adverse environmental impacts that could occur are generally negligible in intensity and duration, and will be less than significant. Beneficial impacts range from negligible to moderate. 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, will have significant effects on the human environment. Requirements of NEPA have been satisfied and preparation of an Environmental Impact Statement is not required. When this FONSI is executed, GGNRA will implement the Selected Alternative as soon as practical.

Recommended:

[signed by Laura E. Joss on October 3, 2018]

Laura E. Joss, General Superintendent
Golden Gate National Recreation Area
National Park Service

Date

Approved:

[signed by Stan Austin on October 18, 2018]

Stan Austin, Regional Director
Pacific West Region
National Park Service

Date

ATTACHMENT A

Construction Impact Reduction Measures

For the small section of the Redwood Creek Trail on GGNRA land, the following Best Management Practices (BMPs) and Mitigation Measures (MMs) will be implemented by a CDPR Environmental Scientist, a GGNRA Natural Resource Specialist, and the Golden Gate National Parks Conservancy (GGNC) Project Manager during construction and are integrated in the project design. For the Dias Ridge Trail Extension the relevant BMPs and MMs will be implemented by a GGNRA Natural Resource Specialist and the GGNPC Project Manager. The Project will also comply with all required permits and approvals. The following measures were identified to eliminate or minimize the degree of adverse effects that could otherwise result from project implementation. These measures will be implemented during construction, as appropriate for the specific activities being conducted.

Vegetation

- All tools and equipment used on the Project will be required to be thoroughly cleaned of soil and plant material prior to entering the project area. If equipment temporarily leaves the project area, it will be cleaned prior to re-entering the project area.
- Soil disturbance during grading activities will be minimized to the extent possible to reduce habitat loss, potential for introduction or spread of invasive non-native plant species, to protect topsoil resources, and to reduce potential habitat for non-native invasive plant species.
- Vegetation disturbance will be limited and restricted to project areas. Riparian vegetation within and adjacent to project areas will be protected to the greatest extent possible and serve as a sediment buffer.
- Native plants will be salvaged during trail cutting and excavation as needed for revegetation. Additional plants will be grown in native plant nurseries. Revegetation with native species will occur on all disturbed areas adjacent to channels.
- Riparian trees will be protected to the greatest extent possible. Where removal of riparian trees cannot be avoided, species which resprout will be cut as high on the bole as possible to retain the structure of the tree, allow for sucker development, and retain roots for bank stability.
- After tree felling, roots will be left in place to prevent erosion where possible.
- All cut native vegetation will be retained on site and used to cover disturbed areas or block off decommissioned trails. At Culvert 2 Removal, the project hydrologist will direct placement of some wood debris within the channel.
- Vegetation will be cut or removed outside of bird nesting and bat maternity season or following bird nest and bat roosting surveys that demonstrate no nesting birds or roosting bats will be disturbed.
- Rock used for armoring, retaining walls, or other features will be imported from quarries that certify their material as weed seed free.

Erosion and Sediment Controls

The project will include BMP strategies to minimize erosion and sediment discharges to Redwood Creek and its tributaries. Erosion and sediment control practices will include:

- Construction of the Redwood Creek Trail Realignment and all work adjacent to Redwood Creek or its tributaries will occur between June 1 and October 31. No soil disturbance within 100 ft. of Redwood Creek will occur after October 31 and all disturbed soils will be stabilized by October 31. The Dias Ridge Trail Extension will not be limited to a June-October timeframe and will be completed in one construction period.
- Disturbance will be limited to project areas and pre-defined staging areas. All project limits will be clearly marked prior to the beginning of ground disturbing activities. No disturbance will occur beyond these limits. If incidental off trail temporary storage is needed, it will be limited to disturbed areas, will be confined to a clear location, will be monitored for wildlife prior to use, and be underlain with geo-textile fabric.
- Workers will receive an erosion, sediment control and pollution prevention training and will be instructed to avoid conducting activities beyond the construction zone (including storage of tools, materials, soil, etc.).
- Prior to construction, erosion and sediment control measures such as silt fences, gravel bag dikes and fiber rolls (wattles) will be installed as needed to eliminate the potential for sediment discharge in storm water into Redwood Creek and into any intermittently active drainages that empty into Redwood Creek. This will include installing a sediment barrier (wattles and/or silt fence) between the work area and Redwood Creek (or any active drainage) and covering disturbed soil with mulch and/or geo-fabrics. Sediment will be removed from sediment control devices, such as silt fences, when sediment has reached 1/3 height of the exposed portion of the device and the sediment added to soil stockpiles. Erosion and sediment control materials will be completely biodegradable. Erosion control measures will not contain plastic netting or monofilament that could trap small animals. Only rice straw-filled fiber rolls and certified weed-seed free rice straw mulch will be permitted, to prevent inadvertent introduction of wheat and barley species.
- Staging and stockpiling areas will be in previously disturbed sites to minimize the amount of ground disturbance. These areas will be located away from sensitive habitat areas. Stockpiles will be outside of drainages, contained with appropriate sediment controls, and covered with geo-fabrics or plastic sheeting. All sediment control devices will be maintained regularly for the entire lifetime of the stockpile. All staging and stockpiling areas will be returned to pre-construction conditions following construction completion.
- Sites where activities result in exposed soil will be stabilized to prevent erosion as soon as feasible after project activities are complete.
- Following construction disturbed or bare soil adjacent to channels or drainages will have sediment controls installed along contours and will be covered with rolled erosion control material such as coir blankets. Passive (placing cut native vegetation) and active (planting) revegetation will be practiced.
- After completing construction, exposed soil outside the trail footprint will be covered with local leaf litter and native vegetation cut within project area as soon as possible. This mulch will provide a source of seeds to reestablish native vegetation and reduce the risk of non-native seeds germinating. Ideally, the litter and duff should be collected from surrounding areas, but not denude the collection area. At least 50 percent of the material will be left in place and vegetation will not be disturbed. In the absence of native vegetation, certified weed free rice straw may be used.
- Soils excavated during ground-disturbing activities will be reused to the extent that these locally-derived materials are found to be clean and weed-free. Any such reuse is subject to applicable NPS and CDPR policies and guidance.

Water Resource Protection and Pollution Prevention

The project will include BMP strategies to prevent pollution from sediment, petroleum products, hydraulic fluid and other fluids related to equipment and power tool use. Proper storage, use, and disposal of chemicals, fuels, and other toxic materials will be required. Soil, silt, bark, rubbish, raw cement, concrete (including washings), oil or other petroleum products, or other substances that could affect water quality and be harmful to aquatic biota will be prevented from entering the soil and/or waters of the State/US. Fueling and maintenance of tools will not occur adjacent to sensitive resources (e.g., the creek).

- A Pollution Prevention Plan will be developed which will include BMPs and inspection procedures.
- All equipment and power tools will be:
 - Inspected for fuel or other leaks before being brought on site. Tools showing signs of leaking will not be brought on site. Tools will be inspected for oil and gas leaks regularly and will be repaired or removed immediately if leaks are found,
 - stored in staging areas with perimeter controls (wattles or sandbags) to contain potential spills, and will be staged over impermeable materials to ensure that no spilled material can enter the soil, and
 - Refueled only in upland areas to prevent fuel spills near sensitive habitats. Fueling will occur over a non-permeable surface, such as a drip pan or tarp, and with a perimeter protection, such as an absorbent wattle, on the downhill side of the fueling area.
- For all vehicles and equipment operated in or near the creek:
 - All vehicles and equipment will be kept clean. Excessive build-up of oil or grease will be avoided.
 - All equipment used in the creek channel will be inspected for leaks each day prior to initiation of work. Action will be taken to prevent or repair leaks, if necessary.
 - No fueling or maintenance actions will occur in the creek. Vehicle and equipment maintenance activities will be conducted off-site or in a designated, protected area away from the channel where vehicle fluids and spills can be handled with reduced risk to water quality and the creek bed. Equipment will not be staged in the creek channel overnight.
- Any chemicals stored on site (for fueling or equipment maintenance) will be stored in a locked container with secondary containment in case of leaks.
 - If maintenance must occur on-site, it will occur in designated areas located at least 100 ft. from drainages and channels, and protected with perimeter controls and non-permeable surfaces placed under the equipment. Secondary containment, such as a drain pan or drop cloth, to catch spills or leaks will be used when removing or changing fluids. Fluids will be stored in appropriate containers with covers, and properly recycled or disposed of off-site.
 - Emergency spill containment and clean-up materials will be kept on the project site.
- During environmental awareness training, all workers will receive training on the importance of pollution prevention, preventing spills and appropriate spill clean-up actions.
- Only clean rock/ aggregate from near the project area or imported specifically for this trail project will be used for trail stabilization or trail tread. No concrete rubble or other construction waste will be used.
- All trash and construction debris will be removed daily from the project site and disposed of appropriately offsite.

- During bridge decking and railing installation a sheet of Visqueen ® or similar material will be attached under the bridge to catch wood dust, metal dust, loose hardware, etc., to avoid pollutants entering channels. These materials will be bagged and removed from the site.

Wildlife

The measures described below may be augmented or modified based on consultation for Section 7 of the Endangered Species Act with the United States Fish and Wildlife Service and National Marine Fisheries Service, or in the requirements of the Lake and Streambed Alteration Agreement with the California Department of Fish and Wildlife.

- Prior to engaging in construction activities, all personnel will participate in an environmental awareness training session conducted by a qualified biologist. The biological monitor will train all workers on sensitive species potentially in the area, and conservation measures in place for the project. Training sessions will identify NPS and CDPR staff resource contacts and provide information on special-status species or other sensitive resources in the work area; markings for the limit line of disturbance; thresholds that will trigger a change in implementation techniques or require a halt in project implementation; prohibitions on feeding resident wildlife; and proper disposal of food waste and garbage to discourage feeding by wildlife. Personnel will also receive training on pollution prevention, prevention of spills, and spill clean-up actions. Upon completion of training, employees or contracting crews will be required to sign a form stating that they attended the training and understand all the conservation and protection measures.
- Prior to construction, a qualified biological monitor will survey work areas for wildlife, including aquatic amphibians and reptiles. In addition, a qualified biological monitor will be present onsite or available on-call during work activities to relocate wildlife to an offsite location. The biological monitor will:
 - have experience in the identification and behavior of special-status wildlife species that could be affected by the proposed action, habitat assessment experience, knowledge of the natural resources within the action area, and experience with trail projects,
 - be responsible for ensuring that best management practices are being properly implemented, resource avoidance measures and housekeeping practices are upheld, and work is conducted in accordance with all required permits, policies, regulations, and plans,
 - Have the authority to stop work if necessary to protect biological resources. If the monitor requests that work be stopped due to take of any listed species, the US Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife will be notified within one working day via email or telephone, and
 - Be the contact source for any employee or contractor who might inadvertently kill or injure a federally or state listed species or who finds a dead, injured or entrapped individual. The representative will be identified during the crew training program. The representative's name and telephone number will be provided to the Service prior to the initiation of ground disturbance activities.
- At the end of each workday, an escape ramp will be placed at each end of any construction-related open trenches or holes to allow trapped animals to climb out. The ramp may be constructed of soil, wood or another suitable material placed at an angle no greater than 30 degrees.
- To reduce daytime noise and potential disturbance to wildlife species due to construction, crews will muffle or control noise from power tools through implementation of the following measures:
 - Equipment and power tools will use the best available noise control techniques (e.g., improved mufflers, use of intake silencers, etc.).

- Northern spotted owl surveys will be conducted to determine where northern spotted owl nests are located. Noise-inducing work with $\frac{1}{4}$ mile of northern spotted owl nests will occur outside of northern spotted owl (February 1- July 31) core breeding season.

Nesting Bird and Raptor Protection:

- To the greatest extent possible, activities will be planned and conducted outside the bird-nesting season (January 1 to July 31 for raptors, and March 1 to July 31 for landbirds).
- Northern spotted owls are known to occur in Muir Woods National Monument and Mount Tamalpais State Park and may be present in the project vicinity, particularly the northern end. Prior to construction a survey will be conducted to determine if nesting owls are present in the area and will be at risk of being disturbed by planned construction activities. (See noise reduction requirements above.)
- In the area of the realigned trail segment, vegetation will be maintained at a height of less than 12 inches throughout the landbird nesting season to discourage the nesting of such bird species where the trail is to be installed. Any vegetation (i.e., trees, shrub, grasses) taller than 12 inches that is not removed within the timing window specified for vegetation cutting and removal will be subject to the additional measure, below.
 - If work is conducted within the nesting season, prior to the onset of construction involving the cutting of vegetation or ground disturbing activities using heavy machinery, a qualified wildlife biologist will be retained to conduct pre-construction surveys for raptors and nesting birds within suitable nesting habitat in a 300-foot radius of the construction area. If no active nests are detected during surveys, activities may proceed. If active nests are detected within the construction area, a biologist will establish a suitable nest buffer in coordination with NPS and CDPR where no work can occur until the young have successfully fledged or the nests have been otherwise abandoned.

Aquatic Species and Amphibians:

- Construction will not occur in or near the creek during migration and spawning seasons of protected species, including Coho salmon and steelhead. No in-water construction activities or creek dewatering will occur prior to July.
- Prior to working in wetted channels, channels will be dewatered. Prior to dewatering, native fish, tadpoles, and other vertebrates will be excluded or removed and relocated outside of the project area by a qualified biologist. Fish will be netted or chased from each individual area where in-channel work will occur. Electrofishing will be used to capture any remaining individuals. Captured fish will be placed in aerated holding containers and transferred to pool habitats outside of the project area. A qualified biologist shall monitor the construction site during placement and removal of channel diversions and coffer dams to ensure any effects to ESA-listed salmonids are minimized. All materials placed for creation of coffer dams will be removed upon completion of activities.
- In California red-legged frog habitat (as determined by qualified biologists), a biological monitor will search all work localities for the presence of California red-legged frogs prior to and during ground-disturbing activities. The search area will encompass a 50-foot radius around the work sites. All rodent burrows, leaf litter deeper than 2 inches, or other obvious refugia will be surveyed for the presence of the species. To prevent direct injury to California red-legged frogs, removal of vegetation within suitable frog habitat will be accomplished by a progressive cutting of vegetation from the overstory level to ground level to allow frogs to move out of the work area. Should any frogs be observed, activities will cease until the animal moves out of the work area or is removed and relocated by a permitted biologist. Captured frogs will be relocated to suitable

habitat outside of the construction zone, either upstream or downstream of the construction zone.

Protected Bat Populations:

- The project activity with a potential to impact breeding bats will be tree removal; therefore trees will be removed between September 1 and January 31, outside of bat maternity season. If trees cannot be removed during this time period, then a bat habitat assessment will be conducted by a qualified biologist for those trees; and tree removal will proceed based on recommendations from the biologist.

Woodrat Nests:

- Any woodrat nests encountered during construction activities will be avoided, if possible, by establishing a minimum protection buffer of 50 feet around each nest. If nests are identified in areas where heavy equipment operation or excavation is integral to the project design, then the nests will be dismantled prior to grading or vegetation removal activities in a careful, gradual process that will allow any woodrats in the nest to escape into adjacent undisturbed habitat. Surveys will be conducted to determine the likelihood that nests are inhabited, such as a cleared entrance, for example, or recently placed twigs on the nest. A clearly unoccupied nest in an area integral for construction will be dismantled during the routine construction period; however, if the nest appears to be occupied, it will not be dismantled until the non-breeding season of October-November. If young are encountered during nest dismantling, the dismantling activity should be stopped and the material replaced back on the nest and the nest should be left alone and rechecked in 2-3 weeks to see if the young are out of the nest or capable of being out on their own (as determined by a qualified biologist); once the young can fend for themselves, the nest dismantling will continue. Due to the possibility of exposure to hanta virus known to be carried by woodrats, any dismantling or observations of the woodrat nests will be conducted only in a manner that fully protects the health of crews, equipment operators, or surveyors.

Phytophthora Protections

All project activities that could spread Phytophthora species (plant-damaging oomycetes or water molds) to new locations will be subject to BMPs developed by the California Oak Mortality Task Force and available online at http://www.suddenoakdeath.org/html/best_management_practices.html.

Phytophthora BMPs include but are not limited to:

- Informing personnel that they are working in a Phytophthora-infested area, unauthorized movement of soil material is prohibited, and the intent of these prevention measures is to prevent spread of Phytophthora.
- Removing or washing-off accumulations of plant debris, soil, and mud from shoes, boots, vehicles, and heavy equipment, etc. before leaving project area, and cleaning with denatured alcohol or similar materials as needed.

Cultural Resources

A cultural resource monitoring plan will be prepared to ensure that ground-disturbing activities within the project area result in no adverse effects to buried resources. The monitoring program will include oversight of project schedules and excavation areas to ensure that important opportunities for archaeological discovery are realized, and that potentially buried archaeological deposits are recognized in the course of active excavation and restoration.

Inadvertent Discoveries:

- If buried cultural resources are inadvertently discovered during ground-disturbing activities,

work shall stop in that area and within a 100-foot radius of the find until a qualified archaeologist can assess the significance of the find. Alternatively, an archaeologist and Native American monitor may monitor ground disturbances in vicinity of the site to ensure that such discoveries are protected until they can be properly recorded and assessed, and management decisions can be made about their treatment. Avoidance in place or no adverse effect from project actions are the preferred approaches to all discoveries that are potentially eligible for listing on the National Register of Historic Places (NRHP). Inadvertent discoveries will be treated in accordance with 36 CFR 800.13 (Protection of Historic Properties: Post-review discoveries). The archaeological resource will be assessed for its eligibility for listing on the NRHP in consultation with the State Historic Preservation Office (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 will be made. If the site will be adversely affected, a treatment plan will also be prepared as needed during the assessment of the site's significance. Assessment of inadvertent discoveries may require archaeological excavations or archival research to determine resource significance. Treatment plans will fully evaluate avoidance, project redesign, and data recovery alternatives before outlining actions proposed to resolve adverse effects.

Discovery of Human Remains:

- If human skeletal remains are encountered, all work shall stop in the vicinity of the discovery, and the find will be secured and protected in place. The Marin County coroner and Park Archaeologist will 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 will be treated in accordance with the Native American Graves Protection and Repatriation Regulations at 43 CFR 10.4 (Inadvertent discoveries). The coroner will also contact the Native American Heritage Commission (NAHC; pursuant to Section 7050.5[c] of the California Health and Safety Code) and the County Coordinator of Indian Affairs.

Visitor Experience, Park Operations, and Safety:

- Trail construction zones will be identified and signs or fencing will be placed to prevent visitors from entering the construction area or using closed sections of trail.
- Visitor information regarding Project activities (e.g., construction-related activity that could affect visitors—noise, trail closures or detours, etc.) will be provided via the park website, signage, field staff, or a park newsletter to enhance the public's understanding of the issues and to help them better plan their visits.
- For each phase of work, the NPS and CDPR will develop a construction management plan to sequence construction activities to minimize disruption to existing facilities and services. The plan will include information on days/hours of operation, trail closures, times in which particularly loud or noisy operations could occur, safety protocols, etc.
- During construction, contractors and CCC crews will ensure that all active construction, staging, and stockpile areas are fenced so as to exclude the public. Signs will be conspicuously posted to inform the public about the need for caution and to safely route visitors around construction areas.
- Residents or businesses located in proximity to project elements (e.g., residences on Highway 1) will be provided with at least 30 days advance notification of any planned construction activity in the vicinity. A contact telephone number for a construction representative will be conspicuously posted on construction site fences and will be included in the written notification of the construction schedule sent to nearby residents and posted on the website.

Noise/Soundscape:

- All equipment will be operated and maintained to minimize noise generation.
- Contractors will ensure that power equipment (vehicles, heavy equipment, and hand equipment such as chainsaws) is equipped with original manufacturer's sound-control devices, or alternate sound control that is no less effective than that provided as original equipment. Equipment will be operated and maintained to meet applicable standards for construction noise generation. No equipment will be operated with an unmuffled exhaust.
- Contractors will limit the idling of motors except as necessary for safe operations.
- Project-related activities could occur seven days per week and will generally be limited to the hours of 7:00 a.m. to 6:00 p.m. On the Dias Ridge Trail Extension, project activities requiring heavy equipment use will be limited to weekdays from 8:00 a.m. to 6:00 p.m. Work within ¼-mile of a northern spotted owl nest will be consistent with the noise restrictions identified in the Wildlife section above.
- 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 CDPR-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.