Note: Environmental compliance for this project includes two Notices of Exemption and supporting memos. One covers non-federal portions of this project and a second covers federal portions of this project, consistent with the provisions of SB 901. Both documents are included in this PDF.

Notice of Exemption

21-2022-118

FILED
MAY 18 2022
SHELLY SCOTT
MARIN COUNTY CLERK
By O Leball Deputy

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

County Clerk County of: Marin
Marin Civic Center
3501 Civic Center Dr., Suite 234,
San Rafael, CA 94903

From (Public Agency):
Southern Marin Fire District
28 Liberty Ship Way

Sausalito, CA 94965

Project Title: Southern Marin Zone Tamalpais Valley/Homestead Fuel Break Project

Project Applicant: Southern Marin Fire District

Project Location – Specific: The proposed fuel break would be located within the Golden Gate National Recreational Area, Homestead Valley Land Trust, and the communities of Tamalpais Valley and Homestead.

Project Location – City:
Tamalpais Homestead Valley

Project Location – County:
Marin County

Description of Nature, Purpose and Beneficiaries of Project:
The purpose of the proposed project is to establish and maintain a defensible space zone along the perimeter of the Tamalpais Valley and Homestead residential hillside communities in high fire danger zones. These communities are located along steep slopes, where any wildfire would rapidly escalate, and fire suppression activities would be challenging due to limited road access. By creating a shaded fuel break, the proposed project would extend evacuation times for the community, slow fire intensity, and provide firefighters better access to the fire's edge if a wildfire were to occur.

Name of Public Agency Approving Project: Southern Marin Fire District

Name of Person or Agency Carrying Out Project: Southern Marin Fire District

Exempt Status (check one):

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☐ Common Sense Exemption (Sec. 15061(b)(3));
- ☒ Categorical Exemption. State type and section number: 15304(i). Minor alterations to land for fuel management activities
- ☐ Statutory Exemptions. State code number:_____

Reasons why project is exempt:
The project is categorically exempt under California Environmental Quality Act (CEQA) Guidelines Section 15304, Class 4 for Minor Alterations to Land. A Class 4 exempt project consists of minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes. The proposed project would involve vegetation reduction activities within 100 feet of structures along the perimeter of the Homestead and Tamalpais Valley residential hillside communities. The scope of the proposed project is consistent

POSTED 5/18/22 TO 6/17/22

with a minor alteration to the condition of the vegetation along the Homestead and Tamalpais Valley communities shown in Figure 1.

Additionally, no healthy, mature, scenic trees would be removed; no work would take place within sensitive habitat, including wetlands or waterways; and no ground disturbance, such as excavation, would take place. There are no facts or circumstances specific to this project that would support an exception to the categorical exemption. No exceptions listed under Section 15300.2 apply.

Lead Agency Contact Person:

Jesse Figoni

Area Code/Telephone/Extension:
415.906.4471

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? Yes☐ No☐

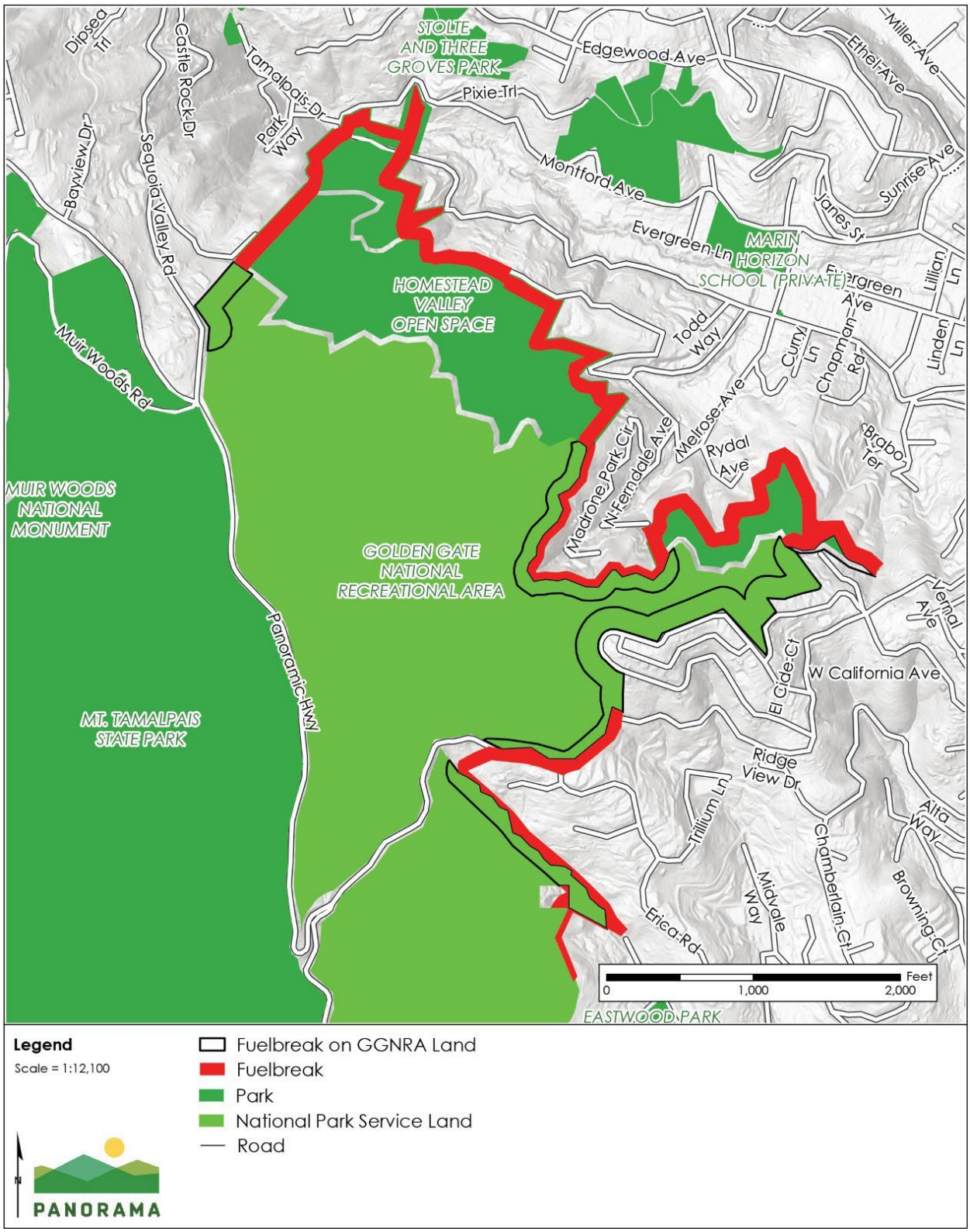
Signature: Jesse Figoni Date: 5/18/22 Title: Fire Inspector

☒ Signed by Lead Agency ☐ Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR:

Figure 1 Fuel Reduction Area



MARIN WILDFIRE PREVENTION AUTHORITY

California Environmental Quality Act Categorical Exemption Determination Memorandum

Date: April 21, 2022

Project: Southern Marin Zone Tamalpais Valley/Homestead Fuel Break Project

Categorical Exemption Summary

The Southern Marin Fire Department as the lead agency under California Environmental Quality Act (CEQA) has determined that the Southern Marin Zone Tamalpais Valley/Homestead Fuel Break Project (proposed project) is categorically exempt under CEQA Guidelines Section 15304, Class 4 for Minor Alterations to Land. A Class 4 exempt project consists of minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes. The Marin Wildfire Prevention Authority (MWPA) as the responsible agency under CEQA concurs with the Southern Marin Fire Department's determination that the proposed project is exempt under CEQA. The proposed project would involve vegetation reduction activities within 100 feet of structures along the perimeter of the Homestead and Tamalpais Valley residential hillside communities. The scope of the proposed project is consistent with a minor alteration to the condition of the vegetation along the Homestead and Tamalpais Valley communities shown in Figure 1.

The overall contiguous fuel reduction area shown in Figure 1 includes treatments on National Park Service (NPS) Golden Gate National Recreation Area (GGNRA) lands. The NPS certified the GGNRA, Muir Woods National Monument, and Fort Point National Historic Site Fire Management Plan (GGNRA FMP) Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) on February 23, 2006, which covers fuel reduction projects on GGNRA land (NPS, 2006). In accordance with Sections 2.2 and 3.6 of the 2015 NPS National Environmental Protection Act (NEPA) Handbook, it is anticipated that the proposed project satisfies the requirements for a Memorandum to File and will be reviewed by the appropriate GGNRA Interdisciplinary Team (IDT). Once determined to be consistent with a fuel reduction and thinning project on federal land for which NEPA was already conducted, a Memorandum to File will be filed with NPS and treatment activities can commence on GGNRA lands.

The following analysis demonstrates that the proposed project would not result in adverse environmental effects, supporting the Southern Marin Fire Department's and MWPA's determination that the proposed activities are categorically exempt under CEQA. The proposed project would be conducted in compliance with applicable federal, State, and local regulations and under contractual provisions prohibiting work in violation of applicable regulations and plans, including the Marin County Parks Community Service Area 14 (Homestead Valley) Land Management Plan (LMP) and relevant best management practices identified in the LMP (2014).

Information regarding the purpose and need for the proposed project, a description of proposed activities, a discussion of why the potential exceptions to a categorical exemption do not apply here, and an assessment of the potential for environmental effects are provided below.

Background

Marin County voters passed Measure C in 2020, which established a 17-member Joint Powers Authority, the MWPA, to fund and oversee proactive state-of-the-art wildfire prevention and preparedness efforts within the County. Members include several cities and towns, fire protection districts, and community service districts. The MWPA was formed to develop and implement a comprehensive wildfire prevention and emergency preparedness plan throughout almost all of Marin County. This proposed project is a Core Project that is funded by and within the purview of the MWPA. Core Projects include those projects that focus on wildfire detection, notification, and evacuation; vegetation management and fire hazard reduction; grants management; and public education.

Purpose and Need

The purpose of the proposed project is to establish and maintain a defensible space zone along the perimeter of the Tamalpais Valley and Homestead residential hillside communities in high fire danger zones. These communities are located along steep slopes, where any wildfire would rapidly escalate, and fire suppression activities would be challenging due to limited road access. By creating a shaded fuel break, the proposed project would extend evacuation times for the community, slow fire intensity, and provide firefighters better access to the fire's edge if a wildfire were to occur.

Project Description

Treatment Area

The proposed treatment activities would be completed along the Tamalpais Valley and Homestead residential hillside communities in the Southern Marin Zone as shown in Figure 1. Approximately 28 acres of fuel reduction would be treated along these communities. Treatment activities would involve vegetation removal within 100 feet from structures. The proposed project would provide defensible space for homes directly adjacent to the GGNRA lands and nearby lands owned and/or managed by the Homestead Valley Land Trust and County Service Area 14, Tamalpais Community Service District (CSD), and private landowners. Generally, treatments would target invasive, non-native species, hazardous trees, and fire-hazardous vegetation. Dominant non-native, invasive species in the project area include French and Scotch broom, English ivy, eucalyptus, and woolly cotoneaster (Baxter Botanical, 2021). Treatment would not include the removal of healthy, mature, scenic trees. Fuel reduction treatments would avoid wetted streams and wetlands within the proposed treatment area. The proposed treatment area is primarily characterized by non-native annual grassland, chaparral, redwood forest, eucalyptus forest, non-native woodlands, and oak and mixed woodlands. Treatments vary depending on the cover type, as described by general vegetation community type.

Treatment Type

Grassland and Chaparral

Treatment within non-native annual grassland and chapparal communities would be limited to handheld manual and mechanical removal of grasses, dead woody vegetation, and removal of low-lying shrubs and brush to achieve horizontal spacing and reduce overall fuel loading. Native stands of brush would be thinned to a spacing of 5 to 10 feet, depending upon the site conditions. Non-native plant species such as broom would be removed. Typically, non-native

species would be pulled by hand for removal, although larger individuals may be cut and treated with herbicide to prevent resprouting, if permitted per land managers/owners.

Oak and Mixed Woodland

Treatment within woodland communities (e.g., oak, California bay) would be limited to manual and mechanical thinning using a hand crew. Fuel reduction work within woodland treatment areas would involve pruning tree branches 8 to 10 feet above ground (not to exceed 1/3 of the tree's height), removal of dead/downed branches, and the removal of small diameter (less than 8 inches diameter at breast height [DBH]) live trees to achieve horizontal spacing. Smaller native trees, such as toyon, that are not considered fire hazardous, would not be removed. Understory ladder fuels including non-native, invasive Scotch broom and French broom, coyote brush shrubs, and shrub-like understory tree saplings would be removed or thinned, preferably by pulling. Non-native, invasive species may be treated with herbicide, if permitted per land managers/owners. Hazardous trees (e.g., dead or dying trees), dead standing trees, and non-native trees would be removed where deemed appropriate in coordination with an arborist or qualified fire professional. In general, one snag would be retained per acre for habitat if the retained snag would not be a hazard. A hazard tree generally poses a risk of failure or fracture with the potential to cause injury to people or damage to property.

Eucalyptus

Treatment within eucalyptus would be conducted by a hand crew using manual and mechanical tools. Treatment would include removing eucalyptus duff and litter beneath the trees. Branches of mature, healthy trees would be thinned 8 to 10 feet above ground (not to exceed 1/3 of the tree's height) to reduce ladder fuels. Removal of small diameter (less than 10 inches DBH) trees would be removed to achieve horizontal spacing and the stumps treated to prevent resprouting, if permitted per land managers/owners. Hazardous trees (e.g., dead or dying trees), dead standing trees, and non-native trees would be removed where deemed appropriate in coordination with an arborist or qualified fire professional.

Redwood Forest

Treatment within redwood communities would be conducted by a hand crew using manual and mechanical tools. Dead and downed branches would be removed. Smaller native trees, such as toyon or bay, that are growing in redwood communities would typically be retained unless the densities pose a fire hazard risk, but would be pruned. Native redwood and other trees would be pruned to 8 to 10 feet above ground (not to exceed 1/3 of the tree's height). Dead standing trees and hazard trees would be removed where deemed appropriate by an arborist or qualified fire professional, retaining one snag an acre for habitat, if not a hazard.

Treatment Method

Project treatments would include handheld manual and mechanical fuel reduction using chainsaws, weed whackers, loppers, pole pruners, and other similar handheld tools. The treatment activities would be conducted by hand crews to create vertical and horizontal clearance. Heavy equipment usage would not occur due to steep slopes and limited access to the work area. A trailer-mounted chipper would be operated from nearby roads and fire roads.

Non-native, invasive shrubs, notably broom, eucalyptus, and acacia species, may be treated with herbicides after cutting, if permitted per the land managers/owners. In accordance with the LMP, the vegetation would be cut with tools and then herbicide painted on immediately after treatment using spot treatments such as the painted cut-stump or other painted

application methods, as approved by County Integrated Pest Management (IPM) and overseen by a Pest Control Advisor (PCA). These methods have been found to have the best success rate for control of certain species, including broom (Oneto, Kyser, & JM., 2010). Should chemical treatments be applied as part of follow-up treatment, herbicide application would be implemented according to all applicable regulations, including the LMP. Herbicides would not be applied within 24 hours of a known rain event and signs would be posted at the project site within or adjacent to public recreation areas, residential areas, schools, or any other public areas at least 1 day prior to application and would remain posted on-site at least 1 day following application

Disposal

Project debris would be disposed of through pile burning, chipping and broadcasting, or chipping and hauling, depending on the location and condition of the work area.

Cut material may be pile burned depending upon the conditions of the work area. Suitable treatment areas are typically flat or have gentle slopes and have open areas away from tree canopies and power lines. Areas selected for pile burning would be away from waterways. Piles would generally be 4 feet in diameter and 4 feet in height, but pile dimensions may vary. Multiple piles may be burned on a single day. Pile burning would be conducted in compliance with Bay Area Air Quality Management District (BAAQMD) Regulation 5 for open burning and burn day restrictions.

Material may also be chipped. The vegetative material would be fed through the chipper and broadcast at treatment areas or hauled away for disposal. Chipped material spread on site would be chipped to under 3 inches in size and would be applied 2 to 4 inches in depth at most to minimize wildfire risk. Disposed debris would be hauled to Marin Resource Recovery Center. Approximately, 2 to 10 tons (estimated 1.4 to 7 cubic yards) of material could be disposed of each workday.

Workers

A single contractor crew would consist of 4 to 8 workers at a single location. Up to four crews may be working at the same time across the fuel reduction zone.

Site Access

Treatment areas would be accessed via existing roads, fire roads, and trails to the maximum extent feasible. Private residences may be used as access points with the landowner's permission. Vehicles and equipment would be staged at the contractor's yard daily.

Schedule and Duration

All work would be performed on weekdays between 8:00 am and 5:00 pm. Initial treatments are anticipated to start in mid-2022. Following project implementation, the condition of the fuel reduction zone would be monitored and reassessed by fire department staff every year to evaluate if maintenance is needed. Maintenance would occur every 3 to 5 years in chaparral, woodlands, and forest communities and annually in grasslands. Areas of broom removal would initially be monitored one year after work and then every 2 or 3 years subsequently. In accordance with the LMP, French broom is anticipated to be treated using hand pulling for the first 1 to 3 years, and once containment is achieved, the primary treatment method would be mowing followed by cut and paint herbicide application until 80 percent control is achieved, then the treatment method would be changed back to hand pulling. Subsequent treatments

are anticipated to be the same as the proposed activities but are subject to change depending on the condition of the fuel reduction zone and response to initial treatment.

Project Design and Implementation Features

The MWPA has developed specific design and implementation features adapted from several source documents referenced in footnotes after each name that will be incorporated as applicable into the project design and implementation for each of its projects. The following specific design and implementation measures are part of the proposed project:

CUL-1 Training[1]

For all activities with the potential for ground disturbance (excluding prescribed herbivory, vegetation and tree trimming, and hand pulling smaller vegetation) all contractors and crew will receive training prepared by and/or conducted by a qualified archaeologist (who meets the U.S. Secretary of Interior's professional standards set forth in 48 CFR Parts 44738-44739 and Appendix A to 36 CFR 61) prior to beginning work. The Tribal Heritage Preservation Officer(s) (THPO) from a local tribe (Federated Indians of Graton Rancheria [Graton Rancheria]) will be notified of the opportunity to attend and/or train crews. The training will address the potential for encountering subsurface cultural resources, recognizing basic signs of a potential resource, understanding required procedures if a potential resource is identified including reporting the resource to a qualified archaeologist and/or THPO, as appropriate, and understanding all procedures required under Health and Safety Code § 7050.5 and PRC §§ 5097.94, 5097.98, and 5097.99 for the discovery of human remains.

CUL-2 Unanticipated Discovery[1]

In the event that a previously unidentified cultural resource is discovered during implementation of an activity all work within a minimum of 150 feet of the discovery will be halted. The resource will be located, identified, and recorded in the MWPA cultural resources GIS database.

The boundaries around the buffered resource will be temporarily marked, such as with fencing or flagging. A qualified archaeologist will inspect the discovery and determine whether further investigation is required. Data regarding archaeological resources will be kept confidential per law. As appropriate, the qualified archaeologist will inform Graton Rancheria's THPO of the discovery. If the discovery can be avoided and no further impacts will occur, the resource will be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort will be required. If the project proponent wishes to continue work in the area, only work performed using hand tools or powered hand tools is allowed, work cannot include ground disturbance and the work area can only be accessed on foot as determined acceptable by the qualified cultural resource specialist/archaeologist.

Alternatively, the qualified archaeologist and/or THPO or tribal monitor will evaluate the resource and determine whether it is:

- Eligible for the CRHR (and a historical resource for purposes of CEQA),

[1] Adapted from measures in the Marin Municipal Water District, Final Program Environmental Impact Report for the Biodiversity, Fire, and Fuels Integrated Plan (BFFIP EIR), October 2019.

- A unique archaeological resource as defined by CEQA, and/or
- A potential tribal cultural resource (all archaeological resources could be a tribal cultural resource).

If the resource is determined to be neither a unique archaeological, an historical resource, nor a potential tribal cultural resource, work may commence in the area.

If the resource meets the criteria for either a historical resource, unique archaeological resource, and/or tribal cultural resource, work will remain halted in the buffered area around the resource. No work will occur within the buffered area except those methods previously discussed as determined acceptable by the qualified archaeologist and/or THPO or tribal monitor. After work is completed, all cultural resource delineators (e.g., flags or fencing) will be removed in order to avoid potential vandalism, unauthorized excavation(s), etc.

CUL-3 Cultural Resource Investigation[2]

Prior to implementation of vegetation management activities that have potential for intensive ground disturbance below the ground surface, significant heat from a burn, or use of heavy equipment off established roads and trails, a qualified archaeologist will conduct a records search and/or site-specific survey of the project areas where such disturbances could occur. Outreach with Graton Rancheria will be conducted as early as feasible to obtain information regarding culturally sensitive areas and/or the location of tribal cultural resources within the project areas. Any information provided by Graton Rancheria and/or tribal monitor(s) is confidential and exempt from public disclosure in accordance with statutory and regulatory requirements (Gov. Code § 6254(r), 6254.10; PRC § 5097.98(c); Cal. Code Regs. § 15120(d)). Records searches and field survey results will be shared with Graton Rancheria, as appropriate. Resources found during the records search, tribal outreach, and/or survey will be flagged for avoidance with an appropriate buffer identified by the qualified archaeologist, or the qualified archaeologist may identify modifications to the prescriptions using only hand tools or powered hand tools and access by foot with no ground disturbance, provided it would avoid all impacts to the resources. Any resource found during the site survey will be documented on California State Department of Parks and Recreation cultural resource record forms and a survey report will be completed for every cultural resource survey completed. The specific requirements will comply with the applicable state or local agency procedures.

CUL-4 Native American Project Notification
For core projects subject to a CEQA determination or compliance and requiring MWPA Board of Directors' approval, Graton Rancheria will be notified and project maps and/or spatial data provided for projects that will potentially entail ground disturbance. Any input from Graton Rancheria regarding specific known resources that could be affected will be considered during project implementation through the methods of avoidance as described in CUL-3.

CUL-5 Cultural Resources Monitoring
Based on the results of CUL-3 and -4, cultural resources monitoring may be conducted in order to avoid impacts to known resources. In addition to flagging the resource for avoidance (as described in CUL-2 or CUL-3) if monitoring is conducted, a qualified archaeologist will be present during ground disturbance work to ensure the known or previously unidentified

[2] Adapted from measures in the Midpeninsula Regional Open Space District, Wildland Fire Resiliency Program Final Environmental Impact Report (WFRP EIR), May 2021.

resources are avoided and protected during project implementation, and if the resource is identified to be pre-contact archaeological and/or a tribal cultural resource, a tribal monitor will be invited to attend during the ground disturbance work.

ET-1 Environmental Training for Biological Resources[3,4]

All crew members and contractors will receive training from a qualified registered professional forester (RPF) or biologist prior to beginning a treatment project where sensitive biological resources could occur in the work areas. The training will describe the appropriate work practices necessary to effectively implement the appropriate project design and implementation features and to comply with the applicable environmental laws and regulations. The training will include the identification, relevant life history information, and avoidance of potentially present special-status species with potential to occur; identification and avoidance of sensitive natural communities and habitats with the potential to occur in the treatment area; best management practices; and reporting requirements. As appropriate, the training will include protocols for work, such as specific trimming methods, where applicable. The training will instruct workers when it is appropriate to stop work and allow wildlife encountered during treatment activities to leave the area unharmed and when it is necessary to report encounters to a qualified RPF or biologist. The qualified RPF or biologist will immediately contact the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS), as appropriate, if any wildlife protected by the CE Species Act (CESA) or Federal Endangered Species Act (ESA) is encountered and cannot leave the site on its own (without being handled).

ES-1 Environmental Surveys for Rare Plants

Within areas where rare and special-status plants have a moderate to high potential to occur, based on desktop data of habitat types, known site-specific information, and the professional judgement of qualified biologists, surveys will be conducted prior to any activity that has the potential to damage perennial plants or is proposed to occur during the flowering season for the specific annual plant species that has the potential to damage the flowering body and seeds of these plant species. Activities that have the potential to damage the flowering body may include but may not be limited to mowing, weed whacking, off-road vehicle and heavy equipment use, discing, and prescribed burning.

Surveys for rare plants will occur for these species across the entire project footprint. Surveys will occur during the blooming period, if feasible, and will occur prior to work for the specified special-status plant. If blooming period surveys are not feasible and the sensitive plant in question can be keyed to genus outside of the blooming period, surveys will be conducted for all members of the genus. Individuals will be flagged for avoidance or modified methods. Physical avoidance will include flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway) to delineate the boundary of the avoidance area around the suitable habitat and removal after completion. For physical avoidance, a buffer may be implemented as determined necessary by the biologist. Sensitive species damage or

[3] Adapted from the measures in the East Bay Municipal Utility District (EBMUD) Practices and Procedures Monitoring and Reporting Plan Section 01 35 44 Environmental Requirements, August 2018.

[4] Adapted from measures in the Board of Forestry and Fire Protection California Vegetation Treatment Program Final Environmental Impact Report (CalVTP EIR), November 2019.

loss avoidance may include implementation of appropriate species-specific no-activity buffers around sensitive resources. Temporary fencing will also be implemented, as and where determined necessary based on the species tolerance, if grazing is prescribed in the area of flagged individuals for avoidance or modified methods (WILD-1).

IP-1 Clean Equipment[4,5]

All crew members, surveyors, and other personnel on site related to project activities will clean clothing, footwear, and equipment used during treatments of soil, seeds, vegetative matter, other debris or seed-bearing material, or water (e.g., rivers, streams, creeks, lakes) before entering the treatment area or when leaving an area with infestations of invasive plants, noxious weeds, known plant pathogens, or invasive wildlife.

IP-2 Prevent the Spread of Invasive Species and Plant Pathogens[4,5]

Segregate and treat soils and vegetation contaminated with invasive plant seeds and propagules. Treat, as appropriate, to prevent the spread of invasive plants. Treatment may include disposal on site within already infested areas, chipping or pile burning and mulching to eliminate viable seeds, or disposal at an approved cogeneration plant or green waste facility.

Minimize soil disturbance to the greatest extent possible to reduce the potential for introducing or spreading invasive plants or plant pathogens, to protect topsoil resources, and to reduce available habitat for the establishment of new invasive plants.

IP-3 Treat Invasive Plants Prior to Seeding[4,5]

Schedule activities to maximize the effectiveness of control efforts and minimize introduction and spread of invasive plants as feasible, with consideration for project objectives and location (e.g., install and maintain fuel breaks, disc lines, and other work before non-native plants set seeds).

IP-4 Retain Native Plants [4,5]

When removing vegetation, focus first on removing invasive and highly flammable species, and dead or diseased vegetation. Retain beneficial, low-fire risk native plant species whenever possible.

GEO-1 Erosion and Soils Loss Stabilization Measures [2]

Soils will be stabilized if a vegetation management activity may leave less than 70 percent groundcover or native mulch/organic material.

For areas between 50 percent and 70 percent ground cover left:

- Sow native grasses and other suitable native vegetation on denuded areas where natural colonization or other replanting will not occur rapidly; use slash or chips to prevent erosion on such areas.

[5] Adapted from measures in the Ecologically Sound Practices Partnership, Ecologically Sound Practices for Vegetation Management (ESP) report, May 2021.

- Use surface mounds, depressions, logs, rocks, trees and stumps, slash and brush, the litter layer, and native herbaceous vegetation downslope of denuded areas to reduce sedimentation and erosion, as necessary to prevent erosion or slope destabilization.
- Install approved, biodegradable erosion-control measures and non-filament-based geotextiles (e.g., coir, jute) when:
- Conducting substantial ground-disturbing work (e.g., use of heavy equipment, pulling large vegetation) within 100 feet and upslope of currently flowing or wet wetlands, streams, lakes, and riparian areas;
- Causing soil disturbance on moderate to steep (10 percent slope and greater) slopes; and
- Removing invasive plants from stream banks to prevent sediment movement into watercourses and to protect bank stability.
- Sediment-control devices, if installed, will be certified weed-free, as appropriate. Sediment control devices will be inspected daily during active work to ensure that they are repaired and working as needed to prevent sediment transport into the waterbodies.

For areas with less than 50 percent ground cover:

- Any of the above measures
- Stabilize with mulch or equivalent immediately after project activities, to the maximum extent practicable.
- If project activities could result in substantial sediment discharge from soil disturbance, as determined by the qualified personnel (e.g., RPF), organic material from mastication or mulch will be incorporated onto at least 75 percent of the disturbed soil surface where the soil erosion hazard is moderate or high, and 50 percent of the disturbed soil surface where soil erosion hazard is low to help prevent erosion.
- Where slash mulch is used, it will be packed into the ground surface with heavy equipment so that it is sufficiently in contact with the soil surface.

Once work is completed, the areas will be inspected at least annually if accessible, until groundcover exceeds 70 percent or slopes have stabilized, as determined by a qualified professional. At that time, erosion-control and slope-stability devices may be removed.

HAZ-1 Leak Prevention and Spill Cleanup [1,4]

The project proponent will, at a minimum, implement measures that address the following procedures related to the use of hazardous materials during work:

- Proper disposal or management of contaminated soils and materials (i.e., clean up materials)
- Daily inspection of vehicles and equipment for leaks and spill containment procedures
- Emergency response and reporting procedures to address hazardous material releases
- Emergency spill supplies and equipment will be available to respond in a timely manner if an incident should occur
- Response materials such as oil-absorbent material, tarps, and storage drums will be available in the plan area at all times during management activities and will be used as needed to contain and control any minor releases
- The absorbent material will be removed promptly and disposed of properly
- Use of secondary containment and spill rags when fueling
- Discourage “topping-off” fuel tanks
- Workers using fuels or other hazardous materials must be knowledgeable of the specific procedures necessary for hazardous materials cleanup and emergency response

- All diesel and gasoline powered equipment will be maintained per manufacturer's specification, and in compliance with all state and federal emission requirements

HAZ-2 Wildfire Risk Reduction [1,3,4]

The following measures will be implemented during activities that involve the use of equipment that can generate sparks or heat:

- Maintain fire suppression equipment (e.g., shovel, extinguisher) in work vehicles and ensure workers are trained in use
- Closely monitor for ignited vegetation from equipment and tool use
- Train workers to properly handle and store flammable materials to minimize potential ignition sources
- Prohibit smoking in vegetated areas
- Avoid use of spark- and/or heat-generating equipment during high fire danger days (e.g., Red Flag Days and Fire Weather Watch)
- Outfit off-road diesel vehicles and equipment with spark arrestors
- Avoid metal string or blade weed trimmers
- Maintain one fire extinguisher for each chainsaw

HAZ-3 Pile Burning[3]

The following measures will be implemented to reduce hazards associated with pile burning:

- Pile burning will only be allowed on days when fire is less likely to spread (e.g., wind speeds are less than 15 mph).
- Piles will only be constructed in areas where burning can be safely controlled, for example, on the flattest area possible. Bottoms of steep, vegetated hills will be avoided.
- Piles should be constructed with 10 feet of clearance around them.
- Piles will be set back from public roads and trails at a distance to minimize risk to the public or cordoned off from the public.
- All requirements of CAL FIRE, the local fire department, and/or the BAAQMD will be met, including any permit, notification, burn bans, and reporting requirements.
- Have fire suppression crews on-site during the fire season determined by CAL FIRE or the local fire department (typically mid-May to mid-November) during curtain and pile burns.
- Pile burning will adhere to BAAQMD criteria pollutant thresholds and Regulation 5 for open burning.

HAZ-4 Application of Herbicides[4]

- Projects will comply with all herbicide application regulations and ecologically sound integrated pest management principles.
- Herbicide containers will be triple rinsed with clean water at an approved site, and rinsate will be disposed of by placing it in the batch tank for application.
- Herbicide drift to public areas or sensitive areas will be minimized through the following measures:
  - Application will cease when weather parameters exceed label specifications or when sustained winds at the site of application exceeds 7 miles per hour (whichever is more conservative).
  - No herbicide will be applied during precipitation events or if precipitation is forecast 24 hours before or after project activities.

  - Spray nozzles will be configured to produce the largest appropriate droplet size to minimize drift.
  - Low nozzle pressures will be utilized.
  - Spray nozzles will be kept within 24 inches of vegetation, if spraying.

- For herbicide applications occurring within or adjacent to public recreation areas, residential areas, schools, or any other public areas within 500 feet, signs will be posted at each end of herbicide application areas and any intersecting trails notifying the public of the use of herbicides at a minimum 1 day before and 1 day after herbicide use.

HAZ-5 Protect Vegetation and Special-Status Species from Herbicides[4]
The project proponent will implement their approved integrated pest management (IPM) procedures when utilizing herbicides, or the following measures if no IPM is in place that addresses herbicide use in sensitive areas:

- Locate herbicide mixing sites in areas devoid of vegetation and where there is no potential of a spill reaching non-target vegetation or a waterway.
- Use only herbicides labeled for use in aquatic environments when working in riparian habitats or other areas where there is a possibility the herbicide could come into direct contact with water. Only hand application of herbicides will be allowed in riparian habitats and only during low-flow periods or when seasonal streams are dry.
- No terrestrial or aquatic herbicides will be applied within Watercourse and Lake Protection Zones (WLPZs) of Class I[6] and II[7] watercourses, if feasible. If this is not feasible, hand application of herbicides labeled for use in aquatic environments may be used within the WLPZ provided that the project proponent notifies the applicable regional water quality control board no fewer than 15 days prior to herbicide application.
- No herbicides will be applied within a 50-foot buffer of federal Endangered Species Act (ESA) or California ESA listed plant species or within 50 feet of dry vernal pools.
- For spray applications in and adjacent to habitats suitable for special-status species, use herbicides containing dye (registered for aquatic use by California Department of Pesticide Regulation, if warranted) to prevent overspray.

NOI-1 Minimization of Noise Disruption to Nearby Neighbors and Sensitive Receptor[4,8]

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[6] A Class I watercourse includes any domestic supplies, including springs, on site and/or within 100 feet downstream of the operations area, and/or fish are always or seasonally present onsite, and includes habitat to sustain fish migration and spawning.

[7] A Class II watercourse has fish always or seasonally present offsite within 100 feet downstream, and or aquatic habitat for nonfish aquatic species. Class II watercourses excludes Class III waters that are tributaries to Class I waters.

[8] San Francisco Public Utilities Commission (SFPUC), Standard Construction Measures, July 2015.

All projects will comply with applicable local noise ordinances. All powered equipment and power tools will be used and maintained according to manufacturer specifications. All diesel- and gasoline-powered treatment equipment will be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations.

Measures to minimize noise disruption to nearby neighbors and sensitive receptors will be implemented as needed. These measures may include but are not limited to:

- Using noise control technologies on equipment (e.g., mufflers, ducts, and acoustically attenuating shields)
- Locating stationary noise sources (e.g., pumps and generators) away from sensitive receptors.
- Close engine shrouds during equipment operations
- Shut down equipment when not in use. Equipment will not be idled unnecessarily.
- Operate heavy equipment during daytime hours if such noise would be audible to receptors (e.g., residential land uses, schools, hospitals, places of worship).
- Locate project activities, equipment, and equipment staging areas away from nearby noise-sensitive land uses (e.g., residential land uses, schools, hospitals, places of worship), to the extent feasible

NSO-1 Northern Spotted Owl Nesting Season Avoidance[1]

Each project will be reviewed by a qualified biologist to determine if northern spotted owls have potential to occur near proposed project activities. Within areas where northern spotted owl have the potential to occur, work, including mowing with heavy equipment, the mechanical removal of vegetation, or prescribed burning, including pile and broadcast burning, will occur outside of the northern spotted owl nesting season to the extent feasible (February 1 to July 31).

If work must occur during the northern spotted owl nesting season, either NSO-2 or NSO-3 will apply.

NSO-2 Work During Northern Spotted Owl Nesting Season – Surveys[1]

Within an area where northern spotted owl has the potential to occur, when work will occur during the northern spotted owl nesting season (February 1 through July 31), and work is not considered low-impact by a qualified biologist the following measure will apply. Low impact type activities include, but are not limited to, goat grazing, hand pulling of weeds, hand trimming of trees and vegetation with non-mechanized equipment, chipping from existing roadways in residential areas, and use of mechanized equipment adjacent to roads or in residential areas that is a typical noise for the environment. In contrast, high-impact activities may include operation of heavy machinery in wildlands with lower baseline environmental noise, or work which produces noise disturbance for a longer duration than is typical in the environment.

The biologists will determine if a known breeding pair is found within 0.25 mile of the proposed activity (i.e., from existing surveys that season or historic data) and perform a nest check to confirm presence. If no survey data for the season has been completed for the areas, two surveys will be conducted by a qualified biologist (whose qualifications have been approved by the MWPA or lead public agency) for nesting northern spotted owls during the months of April and May preceding the commencement of these activities. At a minimum, the survey area will include all suitable nesting habitats within 0.25 mile of any planned activity

sites, and then one of the two options listed below will be implemented. If access cannot be secured for surveys, then work should be delayed until after the nesting season, unless it can be shown that noise generation from the activities and the activities proposed would be below noise and visual disturbance levels for northern spotted owls (refer to USFWS Revised Transmittal of Guidance: Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California) at the nest site, if known.

- If it is conclusively determined that there are nesting northern spotted owls, planned activities that generate noise (e.g., mowing, heavy equipment usage, crews with hand tools that generate noise) in areas without regular human disturbances from human residency (e.g., leaf blowers, home construction and remodeling, roadways), that are within 0.25-mile of an identified active nest will not begin prior to September 1 unless the young have fledged, at which time work may begin no earlier than July 10. Prescribed burns may only occur within suitable northern spotted owl habitat (as determined by a qualified biologist) during the nesting season if protocol surveys have determined that northern spotted owl nesting is not occurring in the area of planned activity.
- If work must occur within 0.25 mile, and work has been determined to have the potential to impact an active northern spotted owl nest, CDFW and USFWS would be consulted to determine if take could occur and whether further permits are required.

NSO-3 Northern Spotted Owl Habitat Alteration[1]

For projects involving removal of large trees (10-inches DBH or greater) in potential northern spotted owl roosting, or nesting habitat (as identified during the desktop review) in areas without regular human disturbances from human residency, habitat alteration within core use areas (nesting and roosting habitat) will be planned in consultation with a qualified northern spotted owl biologist.

NSO-4 Retain Dusky-footed Woodrat Nests[1,5]

Dusky-footed woodrats are important prey for northern spotted owls. Wherever feasible, project activities will leave dusky-footed wood rat nests intact. If possible, maintain a 3-foot buffer of vegetation around dusky-footed woodrat middens.

NB-1 Nesting Bird Season Avoidance [1,4,5,9]

Whenever possible, schedule work outside of the bird nesting season, which is generally from February 1 through July 31st [10]. Not all species nest between the regulatory season, and active nests that are encountered year-round are protected.

NB-2 Nesting Bird Surveys[1,4,5]

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[9] Marin County Parks (MCP), Bird Nesting Survey Training Manual, 2017.

[10] Note that the general nesting season between February 1 and July 31 is a guideline, and that birds may begin nesting beforehand, and complete nesting after these dates. Regardless, active nests are protected year-round. Avian nesting season may begin as early as January 1.

If work that has the potential to impact nesting birds commences between February 1 and July 31 (during the nesting season), a qualified biologist (whose qualifications have been approved by the MWPA or lead public agency) will conduct a pre-activity survey for nesting birds.

Nesting bird surveys are recommended during the nesting season for work involving heavy equipment, other vegetation (including tree) removal or limbing and trimming activities and prescribed (broadcast and pile) burning. Low-impact activities including goat grazing, hand-pulling weeds, and herbicide application do not generally require nesting bird surveys. Determination of need for surveys for low-impact activities should be evaluated on a case-by-case basis in consultation with a qualified biologist or RPF

Nesting bird surveys will occur within no more than 7 days prior to work to ensure that no nests will be disturbed during vegetation management work. If work pauses for more than 7 days, a follow-up survey will be conducted prior to the restarting of work. Appropriate survey areas will be determined by the qualified biologist depending on the project footprint, type of activity proposed, and suitable habitat for nesting birds. Surveys will be conducted during periods of high bird activity (i.e., 1-3 hours after sunrise and 1-3 hours before sunset). If the qualified biologist determines that visibility is significantly obstructed due to on-site conditions (such as access issues, rain, fog, smoke, or sound disturbance [including high wind]), surveys will be deferred until conditions are suitable for nest detection.

NB-3 Nesting Birds: Active Nest Avoidance[1,4,5,9]

If active nests (i.e., presence of eggs and/or chicks) are observed in areas that could be directly or indirectly disturbed (including noise disturbance), a temporary, species-appropriate no-disturbance buffer zone will be created around the nest sufficient to reasonably expect that breeding would not be disrupted. No work will occur inside the buffer zone.

The size of the buffer zone will be determined by the biologist, by taking into account factors including but not limited to the following:

- Noise and human disturbance levels at the site at the time of the survey and the noise and disturbance expected during the work;
- Distance and amount of vegetation or other screening between the site and the nest; and
- Sensitivity of individual nesting species and behaviors of the nesting birds, taking into account factors such as topography, visibility to source of disturbance, noise/vibration, nesting phase, and other case-by-case specifics.

Buffer sizes may be altered during the course of work at the recommendation of the biologist. Raptor nests are subject to additional protections, including during the “branching” phase, when fledglings begin to fly but do not fully leave the nest. Buffers will be maintained until young fledge or the nest becomes inactive, as determined by the qualified biologist.

If work must occur within the buffer, proceed to NB-4

NB-4 Nesting Birds - Active Nest Monitoring [1,4,5,9]

If an avoidance buffer is not achievable, a qualified biologist may monitor the nest(s) during work activities within the recommended nest buffer to document that no take of the nest (nest failure) has occurred related to work activities. If it is determined that work activity is resulting in nest disturbance, work should cease immediately.

RB-1 Prework Survey[3,4]

If vegetation management activities would (1) occur in trees with potential for roosting bat species, (2) would include removal or trimming of trees where a bat could be roosting, or (3) would involve removal or trimming of a tree with mechanized equipment adjacent to trees or structures that could have roosting bats and (4) the work would commence between March 1 and July 31, during the bat maternity period, a pre-activity survey will be conducted for roosting bats within 2 weeks prior to work to ensure that no roosting bats will be disturbed during work. This survey can be conducted concurrent with other surveys for other sensitive species. Trees and shrubs within the work footprint that have been determined to be unoccupied by roosting bats, or that are located outside the avoidance buffer for active roosting sites may be removed. Roosting initiated during work is presumed to be unaffected, and no buffer would be necessary.

RB-2 Avoidance of Maternity Roosts and Day Roosts[3]

If active maternity roosts or day roosts are found within the project site, or in areas subject to disturbance from work activities, avoidance buffers will be implemented. The buffer size will be determined in consultation with the qualified biologist or RPF.

RB-3 Bat Roosting Tree Removal – Seasonal Restrictions [3]

If it is determined that a colonial maternity roost is potentially present, the roost will be avoided and will not be removed during the breeding season (March 1 through July 31) unless removal is necessary to address an imminent safety hazard.

Operation of mechanical equipment producing high noise levels (e.g., chainsaws, heavy equipment) in proximity to buildings/structures supporting or potentially supporting a colonial bat roost will be restricted to periods of seasonal bat activity (as defined above), when possible.

RB-4 Bat Roosting Tree Removal – Emergency Removals [3]

Potential non-colonial roosts that must be removed in order to address a safety hazard, can be removed after consultation with a biologist. Removal will occur on warm days in late morning to afternoon when any bats present are likely to be warm and able to fly. Appropriate methods will be used to minimize the potential of harm to bats during tree removal. Such methods may include using a two-step tree removal process. This method is conducted over two consecutive days, and works by creating noise and vibration by cutting non-habitat branches and limbs from habitat trees using chainsaws only (no excavators or other heavy machinery) on Day 1. The noise and vibration disturbance, together with the visible alteration of the tree, is very effective in causing bats that emerge nightly to feed, to not return to the roost that night. The remainder of the tree is removed on Day 2.

SH-1 Riparian Resources – Project Design[4,5]

Work will be limited in riparian and wetland areas to removal of uncharacteristic fuel loads (e.g., removing dead or dying vegetation), trimming/limbing of woody species as necessary to reduce ladder fuels, and select thinning of vegetation to restore densities that are representative of healthy stands of the riparian vegetation types that are characteristic of the region. Work will only be permitted in dry conditions, where soil is not saturated and no rain (precipitation of 0.5 inch or greater) has occurred in the past 24 hours. Allowable activities include hand removal of dead or dying riparian trees and shrubs, invasive plant removal, selective thinning, and removal of encroaching upland species. Mature, healthy trees will not be removed from a riparian corridor. No foot traffic or equipment will be permitted to enter a wetted channel at any time. Any activities conducted within a riparian corridor will be

conducted so as to avoid alteration to a bed, channel, or bank of a waterway and all debris, including sawdust, chips, or other vegetative material, will be prevented from entering the bed, channel, or bank of a waterway, unless a permit from the California Department of Fish and Game under Section 1600 is obtained.

SH-3 Minimization of Pile Burning Disturbance [11,12]

Pile burning will not be performed in sensitive habitats, such as serpentine-associated communities, wetlands, or riparian areas. If piles are burned on a different day than piled, the piles should be moved prior to burning to ensure wildlife is not present, such as by re-piling by hand, or a qualified biologist will inspect the pile prior to burning to ensure wildlife are not present. If moving or inspection of the piles is not feasible, the pile will be lit from one side and allowed to burn slowly to the other side, in order to allow any wildlife to relocate, rather than lighting the entire pile at once.

TR-1 Emergency Access to Project Areas [3,4]

The following measures will be implemented to maintain emergency access

- At least one week prior to temporary lane or full closure of a public road for vegetation management-related work, the appropriate emergency response agency/agencies will be contacted with jurisdiction to ensure that each agency is notified of the closure and any temporary detours in advance and obtain all required encroachment permits
- In the event of any emergency, roads blocked or obstructed for maintenance activities will be cleared to allow the vehicles to pass.
- During temporary lane or road closures on public roads, flaggers equipped with two-way radios will be utilized where needed to control traffic. During an emergency, flaggers will radio to the crew to cease operations and reopen the public road to emergency vehicles.
- All authorized vehicles at the treatment site will be parked to not block roads when no operator is present to move the vehicle.

TR-2 Traffic Control Measures [3]

Traffic control measures will be implemented to maintain traffic and pedestrian circulation on streets affected by project activities. The following measures may include:

- All traffic control devices will conform to the latest edition of the MUTCD, and as amended by the latest edition of the MUTCD California supplement.
- Any work that disturbs normal traffic signal operations and ensure proper temporary traffic control (lane shifts, lane closures, detours etc.) will be coordinated with the agency having jurisdiction, at least 72 hours prior to commencing worker.
- Flaggers and/or warning signage of work ahead.
- A minimum of twelve (12) foot travel lanes on public roads must be maintained unless otherwise approved.

[11] Marin County Open Space District (MCOSD). (2015, April). Vegetation and Biodiversity Management Plan. *Best Management Practices.*

[12] California Department of Fish and Wildlife (CDFW). (2011). California Endangered Species Act Incidental Take Permit No. 2081-2011-046-03. *Wildfire Hazard Reduction and Resource Management Plan*. East Bay Regional Parks District

- Maintaining access to driveways and private roads at all times unless other arrangements have been made.
- Traffic control devices will be removed from view or covered when not in use.
- Sidewalks for pedestrians will remain open if safe for pedestrians. Alternate routes and signing will be provided if pedestrian routes are to be closed.
- Scheduling truck trips during non-peak hours to the extent feasible.

Discussion of Exceptions (Section 15300.2)

(a) Location:

Sensitive habitats, including watercourses and wetland areas would be avoided by implementing only limited manual and mechanical treatments in such areas. Riparian woodlands may be encountered but any vegetation trimming or thinning would be conducted by hand and alteration to and deposition of debris avoided within the bed, channel, or bank of a waterway (SH-1). Only herbicides approved for use in aquatic environments would be applied by hand in riparian habitats and only during low-flow periods (HAZ-6). Due to the scope and design of the proposed project, the proposed project would not adversely affect riparian habitats as the work would not affect shade or species diversity and could be beneficial if invasive species removal is needed, therefore, exception (a) does not apply.

(b) Cumulative Impact:

Other defensible space and fuel reduction treatments between communities are occurring in the Southern Marin Zone and greater Marin County but would not be conducted within the same area as this proposed project and would not result in cumulative impacts as defined in CEQA Guidelines Section 15300.2. Ongoing maintenance of the fuel reduction zone would be limited to the types of activities previously described, which would be performed annually or every two to three years as needed to create defensible space between structures and roadways and open space. The visual character of the fuel reduction zone would be modified each time vegetation treatments are implemented as vegetation regrows, due to reduction in vegetation cover and type (e.g., broom removal), but the natural character would remain. The design and implementation of this proposed project includes features (e.g., CUL-1, ES-1, NSO-1) that ensure that significant effects on environmental resources are avoided over successive years of maintenance. As such, the proposed project would not contribute to any potential significant cumulative effect and therefore, exception (b) does not apply.

(c) Significant Effects due to "Unusual Circumstances":

The proposed vegetation management activities and future maintenance activities are considered routine and are prevalent and typical throughout the County and Bay Area region. Sensitive waterways would be avoided. Significant effects on special-status species would not occur. The proposed project would modify vegetation, but the natural character would remain and the aesthetic change would not be substantial. Therefore, there are no unusual circumstances associated with the proposed project or the environment in which it would be implemented, and exception (c) does not apply.

(d) Scenic Highways:

No designated California State Scenic Highways occur in the vicinity of the fuel reduction zone; therefore, exception (d) does not apply (Caltrans, 2021).

(e) Hazardous Waste Sites:

Per the current government database of hazardous waste sites at the time of this filing, there are no hazardous waste sites located within or adjacent to the fuel reduction zone (SWRCB, 2021). No substantial ground disturbing activities that could unearth potentially contaminated soils would occur; therefore, exception (e) does not apply.

(f) Historical Resources:

Some hand pulling of invasive plants could occur. As part of the proposed project, workers would participate in a cultural training and the Graton Rancheria would be notified of this proposed project prior to project implementation (CUL-1 and -4). A records search was conducted prior to work that did not identify any resources to avoid (CUL-3) (Far Western, 2022)and should a previously unidentified cultural resource be discovered, work would halt in the area and the resource would be fully avoided or only methods allowed by a qualified cultural resource specialist/ archaeologist would be implemented (CUL-2). If any resources are discovered during implementation that require monitoring to continue treatment in the area, a qualified archaeological would be present and, as appropriate, a tribal monitor would be invited to monitor during ground disturbance (CUL-5). Project activities would not alter any built environment features and would not cause a substantial adverse change in the significance of a known or previously undiscovered historical resource. Therefore, exception (f) does not apply.

Environmental Assessment

Aesthetics		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

The visual character within the proposed fuel reduction zone is characterized by primarily residential and forested recreational areas. Vegetation consists of densely forested mountain areas as well as grassy lowlands and hills. Viewers in the vicinity of the fuel reduction zone would primarily be recreationalists from the Homestead Valley Open Space Preserve and Golden Gate National Recreational Area that pass through the fuel reduction areas and homeowners that are adjacent to the fuel reduction areas. Motorists on some public roads may be able to see segments of the fuel reduction areas.

Equipment and trucks performing the work would be temporarily visible along or staged near the fuel reduction zone. The vegetation thinning activities would be in one area for a short period of time (a few hours to a day) and the work would be performed in a limited area within the fuel reduction zone at any given time.

Minor changes to the vegetation patterns and form would occur from manual and mechanical removal of small or hazard trees and shrubs, as well as weed removal within up to 100 feet of structures. No healthy, mature, scenic trees would be removed as part of this proposed project. The vegetative material would be chipped or cut and either broadcast on site or hauled away from the work area, or pile burned. Viewers in the immediate vicinity may notice changes in the density and type of the vegetation within the fuel reduction zone. These methods of vegetation thinning currently occur in the Southern Marin Zone as well as throughout broader Marin County to create defensible space between structures and open space. This type of work and vegetation management is typical of the area and a characteristic part of the existing environment. The proposed project would not degrade

recreationalists' or motorists' views from nearby roads or trails because the visual change would be minimal, is typical in the area, and would only extend up to 100 feet from structures. The natural vegetation and characteristics of the areas would remain. Visual degradation as seen from State or locally designated scenic roads or vistas, including the Marin County ridge and upland greenbelt areas, would not occur.

Pile burning, if conducted, would result in visual impacts from the staging of debris to allow the vegetation to dry, burning the debris, smoke plumes from the burn, and the appearance of scorched vegetation. Piles would be located in open areas away from any dense vegetation or forests. While piles may be visible to the public, pile burning would be temporary. Pile burns may result in smoke plumes but would generally be smaller, although smoke may be visible from a distance. Pile burns would typically last a day, and visual exposure to the public from smoke plumes would be minimal. Significant adverse effects to aesthetics would not occur.

Agriculture and Forestry Resources		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

The proposed vegetation thinning activities would not convert designated farmland to non-agricultural uses. Project activities would primarily involve thinning and removal of small fire-hazardous trees, shrubs, and underbrush. Healthy, mature, native trees would not be removed and as such would not result in the loss of forest land, nor would it convert forestry land to non-forestry use. Adverse effects on agriculture and forestry resources would not occur.

Air Quality		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Vehicles and equipment for fuel reduction activities would emit diesel particulate matter and criteria air pollutants. In a typical day, it is assumed that worker trucks, chainsaw, chipper, and mechanical hand tools would operate for a few hours per crew and up to one off-haul trucks would travel to a green waste disposal center a day. No tilling or grading activities that could generate fugitive dust emission would occur.

Pile burning may occur instead of chipping to dispose of vegetative debris depending on the conditions of the work area. Pile burning would emit air pollutants including particulate matter. Pile burning of vegetative debris would comply with restrictions required by BAAQMD's Regulation 5. The piles of debris burned in any one year and any ongoing treatment activities would not exceed the BAAQMD significance thresholds (Urbanski, 2014; USFS, 2021; USDA, 2014). Pile burning would be conducted by qualified professionals in accordance with the burn permit and standard industry practices including the California Forest Practice Rules, which would ensure the safety of workers conducting the pile burns. Significant air quality impacts would not occur.

Biological Resources		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Biological database searches for the vicinity of the fuel reduction zone were conducted (CDFW, 2021; CNPS, 2021). Of the species identified during the database search, species were determined to have potential to occur within the work areas if the species is known to occur in the vicinity of the sites and if the sites or immediate vicinity contains suitable habitat to support these species.

Special-Status Plants and Sensitive Vegetation Communities

Riparian, wetland, or other sensitive habitats may occur along or near the fuel reduction zone but would not be impacted by the project activities. No critical habitat for sensitive plants occurs within the vicinity of the work area. No serpentine soils are documented within the project area and therefore serpentine-associated communities are not present (USDA, 2020). Some special-status plant species have a moderate potential to occur in the fuel reduction zone (refer to Table 1 for information and Figure 2 for locations of known occurrences in relation to the proposed fuel reduction zone). Other sensitive, but not special-status, native plants are known to occur in the area as well.

Pile burning may be conducted as a vegetation disposal method. Material would not be piled and burned in sensitive habitats (SH-3). Pile burns would affect a relatively small area. Workers would conduct vegetation trimming and removal with handheld manual and mechanical tools throughout the work area, including in any riparian areas (SH-1).

Herbicides may be applied in a targeted manner, such as cut and painting application, to non-native, invasive plant species to prevent resprouting, minimizing risk to non-target species. Herbicides would not be applied within a 50-foot buffer of any ESA or California ESA listed species (HAZ-5). Workers would receive training from a qualified professional prior to beginning the vegetation treatments in areas where sensitive biological resources could occur. Training would include identification of special-status plant species and sensitive communities for avoidance (ET-1). The training for this proposed project would involve identification of Marin manzanita, Mt. Tamalpais manzanita, Tiburon buckwheat, dark-eyed gilia, Santa Cruz tarplant, small groundcone, North Coast semaphore grass, thin-lobed horkelia, Tamalpais oak, Mt. Tamalpais bristly jewelflower for avoidance if encountered within the fuel reduction zone.

The vegetation trimming and removal would generally focus on removing invasive and fire-hazardous species, leaving native species in place (IP-4) and the types of activities generally would not disrupt the seed banks of these species. Workers would clean equipment and handle vegetation to avoid spreading invasive species and plant pathogens when moving between different project locations (IP-1, IP-2, IP-3). Non-native, invasive vegetation would typically be hand pulled, wherever feasible.

The blooming season for the specific plants that include Tiburon buckwheat, dark-eyed gilia, small groundcone, Tamalpais oak, and Mt. Tamalpais bristly jewelflower, with a moderate potential to occur and that bloom ranges from April to September. Initial treatment is anticipated to begin in mid-2022. Most activities associated with the proposed project are not anticipated to crush or cut vegetation that could result in loss of the blooming body of special-status plants. Work is expected to be conducted mostly via hand crews, which would pose

minimal risk to bulbiferous sensitive plants that may occur in the area. The impact of pedestrian traffic on special-status and other sensitive native plants is minimal for soil compaction and trampling risk, and the relative benefit to the landscape of invasive species removal is expected to provide a net benefit to native plant species. Chips may be spread on-site with consideration for wildfire risk as well as potential for special-status plants to occur in a given area. For the species of rare plants that have a moderate potential to occur based on a review and professional judgement, and activities that could damage the flowering plant species would occur during the blooming season, surveys would be conducted prior to work (ES-1). Any individuals found during the pre-work surveys would be flagged for avoidance or modified methods. All sensitive plant species have a low to no potential to be impacted by vegetation removal activities with the worker training and surveys for avoidance or modified methods, when needed, as shown in Table 1. Significant impacts on native vegetation communities and special-status plants species would not occur.

Special-Status Wildlife

The Townsend's big-eared bat, California red-legged frog and the northern spotted owl have a moderate potential to occur within the fuel reduction zone (refer to Table 1 for information and Figure 3 for locations of known occurrences in relation to the proposed project). Impacts to these species, however, would be avoided during design and implementation of the proposed project, as specified in the various PDIFs. Workers would be trained to identify and avoid the types of wildlife species with a potential to occur in the work areas (ET-1). Project activities could occur from February 1 to July 31, during which time appropriate nesting bird and/or maternity roosting bat surveys would be conducted to avoid any effects to nesting birds and maternity roosting bats, including the Townsend's big-eared bat (per PDIFs NB-1, NB-2, NB-3, NB-4, RB-1, RB-2, RB-3, RB-4).

Critical marbled murrelet habitat is present within the fuel reduction zone (USFS, 2021). However, no occurrences are recorded and there are no historical records for this species breeding in Marin County (GGNRA, 2020). Additionally, treatment activities would not target suitable breeding habitat.

Critical habitat for the northern spotted owl is present within the project area and is known to nest directly adjacent to the fuel reduction zone in one location (USFS, 2021). Vegetation treatment and removal would target invasive, non-native, and fire-hazardous vegetation and accumulative dead biomass along the fuel reduction zones. Small trees, 8 inches DBH and smaller, would be removed as part of clearance for horizontal spacing. This vegetation would grow back and be retreated as needed. Vegetation treatment would occur within up to 100 feet from structures. Northern spotted owl typically prefer dense canopy closure of mature and old-growth trees with logs, standing snags, and live trees with broken tops. The owls also require open space in the understory to allow flight under the canopy to forage (USFWS, 2020). Most of the Marin County owls are known to use younger forests than those further north in California (MMWD, 2019). The proposed project would thin vegetation in the understory and reduce the risk of high intensity fire that could permanently damage established nest sites. The proposed project would also improve foraging habitat for northern spotted owl by reducing understory density and therefore permitting foraging by owls in flight. A study of dusky-footed woodrats in the redwood region of California did not find an association between abundances of woodrats and different intensities of forest thinning (Hamm & Diller, 2009).

As stated previously, high-impact vegetation treatment activities would occur outside of the northern spotted owl nesting season to the extent possible (NSO-1). If high-impact work was to occur during the nesting season, surveys would be conducted to determine if a breeding

pair were located within 0.25 mile of the work area, and treatments would not occur before July 31 if an active nest was present, unless the young have fledged (NSO-2). If any large trees 10 inches DBH or greater are identified as hazard trees, a qualified northern spotted owl biologist would be consulted (NSO-3). Dusky-footed wood rat nests would be left intact wherever feasible (NSO-4). Given the work would be focused on removal of hazardous fuels near structures and roads and the relatively low intensity of the vegetation thinning activities, the work would not be considered major habitat alteration for northern spotted owls.

The California red-legged frog has a low to moderate potential to occur within or adjacent to the fuel reduction zone. Work within and near streams and wetlands found within or adjacent to the work areas would be limited as described in project design measure (SH-1). Training would also identify habitat for the California red-legged frog for avoidance (ET-1). The types of activities performed, given much of the work would be performed by hand, has very low potential to encounter or harm red-legged frogs.

The California giant salamander has a low potential to occur within or adjacent to the fuel reduction zone. California giant salamanders are typically found within wetted areas, which are infrequent within the project footprint. Fuel reduction treatments would avoid wetted streams and wetlands (SH-1), and training would identify habitat for the California giant salamander for avoidance (ET-1). The Arboreal salamander (*Aneides lugubris*) is not a special-status species. However, the Arboreal salamander is known to occur in the area and was identified in the LMP as having the potential to be impacted by habitat modification. Crews would be trained to identify sensitive amphibian species, including the Arboreal salamander, for avoidance (ET-1). Treatment would be primarily conducted by hand crews, who would access the project site on foot, which would further reduce the risk of impacts to any amphibians in the project area, including common species.

Piles for burning would be moved prior to burning to ensure wildlife could relocate, or a qualified biologist would inspect the piles prior to burning. If the piles are unable to be re-piled or inspected, the piles would be lit from one side and allowed to burn slowly to the other side of the pile to allow any wildlife time to vacate the pile (SH-3). Significant impacts on special-status wildlife species would not occur.

Wetlands

Streams intersect or occur adjacent to the project work areas as shown in Figure 5 (USFWS, 2021). Seasonal wetlands may be encountered within the fuel reduction zone. Treatment activities within streams or wetlands would be limited (SH-1). Only herbicides approved for use in aquatic environments would be applied by hand in riparian habitats and only during low-flow periods (HAZ-6). Training would ensure that workers conducting manual and mechanical activities to avoid wetlands (ET-1). Significant impacts on wetlands would not occur.

Table 1 Special-Status Species with Potential to Occur in the Project Vicinity

Scientific Name	Common Name	Sensitive Status	Habitat Types	Potential to occur in treatment areas	Potential to be impacted by treatment
Sensitive Plants					
Amorpha californica var. napensis	Napa false indigo	CNPS 1B.2	Wetland, riparian woodland	Low; suitable habitat will be avoided.	Low; wetland and riparian areas will be avoided (ET-1).
Arctostaphylos virgata	Marin manzanita	CNPS 1B.2	Closed-cone pine forest, redwood forest, mixed evergreen forest, chaparral	Moderate; known occurrences and suitable habitat are found near the project area.	Low; manzanitas can be identified and avoided with training (ET-1).
Arctostaphylos montana ssp. montana	Mt. Tamalpais manzanita	CNPS 1B.3	Chaparral, valley grassland	Moderate; known occurrences and suitable habitat are found near the project area.	Low; manzanitas can be identified and avoided with training (ET-1).
Calochortus tiburonensis	Tiburon mariposa-lily	FT, CT, CNPS 1B.1	Serpentine grassland	None, serpentine soils are not present in the project footprint	None
Castilleja affinis var. neglecta	Tiburon paintbrush	FE, CT, CNPS 1B.2	Serpentine grassland	None, serpentine soils are not present in the project footprint	None
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	CNPS 1B.2	Coastal salt marsh	Low; suitable habitat will be entirely excluded from project design.	None
Cirsium andrewsii	Franciscan thistle	CNPS 1B.2	Bluffs, seeps, occasionally serpentine	Low; suitable habitat will be avoided.	Low; suitable habitat will be avoided with training (ET-1).
Cirsium hydrophilum var. vaseyi	Mt. Tamalpais thistle	CNPS 1B.2	Serpentine seeps	None, serpentine soils are not present in the project footprint	None
Eriogonum luteolum var. caninum	Tiburon buckwheat	CNPS 1B.2	Chaparral, coastal prairie, valley grassland	Moderate; known occurrences and suitable habitat are found near the project area.	Low; can be identified and avoided with training (ET-1); work will occur outside of the blooming period and measures will be taken to avoid impacts to the seed bank. If work that could

Scientific Name	Common Name	Sensitive Status	Habitat Types	Potential to occur in treatment areas	Potential to be impacted by treatment
					damage flowering body occurs during blooming season, surveys would occur (ES-1).
Fissidens pauperculus	minute pocket moss	CNPS 1B.2	Seasonally moist hard-packet soils on steep faces, gullies, or cut banks	Moderate; known occurrences and suitable habitat are found near the project area.	Low; bryophytes are unlikely to be impacted by project activities.
Gilia capitata ssp. chamissonis	blue coast gilia	CNPS 1B.1	Coastal sandhills, sand dunes	None; no known occurrences near project area, and suitable habitat is not present in the project footprint.	None
Gilia millefoliata	dark-eyed gilia	CNPS 1B.2	Coastal dunes	Moderate; known occurrences and suitable habitat are found within the project area.	Low; can be identified and avoided with training (ET-1).; work will occur outside of the blooming period and measures will be taken to avoid impacts to the seed bank. If work that could damage flowering body occurs during blooming season, surveys would occur (ES-1).
Hesperolinon congestum	Marin western flax	FT, CT, CNPS 1B.1	Serpentine, grassland	None, suitable habitat (serpentine grassland) is not present in the project footprint. The only known occurrence within 3 miles is from Ring Mountain, which will not be impacted by the project.	None
Holocarpha macradenia	Santa Cruz tarplant	FT, CE, CNPS 1B.1	Grassy areas, clay soil	Low; some suitable habitat is present nearby. The single CNDDB occurrence within three miles is not dated and is noted as	Low; can be identified and avoided with training (ET-1).

Scientific Name	Common Name	Sensitive Status	Habitat Types	Potential to occur in treatment areas	Potential to be impacted by treatment
				unconfirmed. Species not verified in the vicinity.	
Horkelia marinensis	Point Reyes horkelia	CNPS 1B.2	Coastal dunes	None; no known occurrences nearby and suitable habitat is not mapped in the project area.	None
Horkelia tenuiloba	thin-lobed horkelia	CNPS 1B.2	Open chaparral	Low; no known occurrences but suitable habitat is anticipated in the project footprint.	Low; can be identified and avoided with training (ET-1).
Kopsiopsis hookeri	small groundcone	CNPS 2B.3	Open woodland, mixed conifer forest	Moderate; known occurrences and suitable habitat are found within the project area.	Low; can be identified and avoided with training (ET-1); work will occur outside of the blooming period and measures will be taken to avoid impacts to the seed bank. If work that could damage flowering body occurs during blooming season, surveys would occur (ES-1).
Navarretia rosulata	Marin County navarretia	CNPS 1B.2	Rocky, serpentine	None, no suitable habitat is mapped in the project footprint.	None
Pleuropogon hooverianus	North Coast semaphore grass	CNPS 1B.1, CT	Meadows, vernal-pools	Low; no vernal pools are documented in the vicinity, and suitable meadow habitat will be avoided.	Low; can be identified and avoided with training (ET-1).
Quercus parvula var. tamalpaisensis	Tamalpais oak	CNPS 1B.3	Understory conifer woodland	Moderate; known occurrences and suitable habitat are found near the project area.	Low; can be identified and avoided with training (ET-1); species can be identified and avoided outside of the blooming period.
Stebbinsoseris decipiens	Santa Cruz microseris	CNPS 1B.2	Open coastal, serpentine, sandy	None; suitable habitat is not present, and there are no known occurrences near project area.	None

Scientific Name	Common Name	Sensitive Status	Habitat Types	Potential to occur in treatment areas	Potential to be impacted by treatment
Streptanthus batrachopus	Tamalpais jewelflower	CNPS 1B.3	Serpentine barrens, chaparral	None; suitable habitat is not present, and there are no known occurrences near project area.	None
Streptanthus glandulosus ssp. pulchellus	Mt. Tamalpais bristly jewelflower	CNPS 1B.2	Chaparral, valley grassland	Moderate; known occurrences and suitable habitat are found near the project area.	Low; project activity within chapparal habitat will be limited to removal of invasive species. Species can be identified and avoided with training (ET-1). Work will occur outside of the blooming period and measures will be taken to avoid impacts to the seed bank. If work that could damage flowering body occurs during blooming season, surveys would occur (ES-1).
Sensitive Wildlife					
Brachyramphus marmoratus	marbled murrelet	FT, CE	Breeds inland on mountains near coast	Low, critical habitat present in project area, but no occurrences recorded	Low; work would occur outside nesting season or surveys will be conducted (NB-1, NB-2, NB-3). Removal would focus on small trees and hazardous fuels; healthy, mature trees would not be removed; removal of larger hazard trees would not occur without consultation with a qualified biologist. Species will be included in environmental training to ensure avoidance (ET-1).

Scientific Name	Common Name	Sensitive Status	Habitat Types	Potential to occur in treatment areas	Potential to be impacted by treatment
Corynorhinus townsendii	Townsend's big-eared bat	SSC	Caves, mines, bridges, building, rock crevices, tree hollows in coastal lowlands, and cultivated valleys; prefer roosting in caves or other similar open spaces	Moderate; suitable habitat is present in project area and one occurrence is documented near the project area.	Low; work would occur outside the bat maternity roosting period or surveys conducted and roosting trees avoided. Bat identification and roosting avoidance will be included in the environmental training for crews (RB-1, RB-2, RB-3, RB-4, ET-1).
Danaus plexippus pop. 1	monarch - California overwintering population	FC	Grassland, woodland	Low; some potentially suitable habitat	Low; can disperse from other areas; species life stages and host plant (milkweed) will be included in environmental training to ensure avoidance (ET-1).
Dicamptodon ensatus	California giant salamander	SSC	Wet coastal forests, such as coastal redwoods, in or near clear, cold permanent and semi-permanent streams and seepages	Low; species is highly associated with streams in wet coastal forests. This habitat type is infrequent in the project footprint which hugs open ridgelines, and riparian areas will be avoided within the project area.	Low; can disperse from other areas, and suitable breeding habitat would be avoided by project design. Species will be included in environmental training to ensure avoidance (ET-1).
Emys marmorata	western pond turtle	SSC	Freshwater ponds and streams	Low; drainages within the project area not anticipated to be suitable habitat for species.	Low; can disperse from other areas, and suitable breeding habitat would be avoided. Species habitat will be included in environmental training to ensure avoidance (ET-1).
Falco peregrinus anatum	American peregrine falcon	FP	Nests on cliff ledge or hollow of broken tree snag, also uses ledges	Low; some potentially suitable habitat	Low- work would occur outside nesting season or surveys conducted (NB-1, NB-2, NB-3, NB-4). Nesting

Scientific Name	Common Name	Sensitive Status	Habitat Types	Potential to occur in treatment areas	Potential to be impacted by treatment
			of buildings or other structures		bird avoidance (including raptors) will be included in environmental training to ensure avoidance (ET-1).
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	SSC	Coastal riparian and wetland areas	None; suitable habitat will be excluded from the project area.	None
Laterallus jamaicensis coturniculus	California black rail	FT, FP	Wetlands and marshes	None; suitable habitat will be excluded from the project area.	None
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	FE, CE	Aquatic	None; aquatic species. Aquatic areas are excluded from the project footprint.	None
Rallus obsoletus obsoletus	California Ridgway's rail	FE, CE, FP	Saltwater marshes, freshwater marshes, and mangrove swamps	None; suitable habitat will be excluded from the project area.	None
Rana boylii	foothill yellow-legged frog	CE, SSC	Rocky streams in a variety of habitats, including habitats such as valley foothill hardwood, valley-foothill riparian, coastal scrub, mixed conifer, mixed chaparral, and wet meadows	Low; suitable habitat will be excluded from the project area.	Low; can disperse from other areas, and suitable breeding habitat would be avoided by project design. Species will be included in environmental training to ensure avoidance (ET-1).
Rana draytonii	California red-legged frog	FT, SSC	Breeds in ponds/slow moving streams, may use grassland and oak woodland for dispersal and foraging	Low to moderate; suitable habitat will be excluded from the project area. CRLF may move upland away from aquatic features during wet weather.	Low; can disperse from other areas, and suitable breeding habitat would be avoided by project design. Species will be included in environmental training to ensure avoidance (ET-1).

Scientific Name	Common Name	Sensitive Status	Habitat Types	Potential to occur in treatment areas	Potential to be impacted by treatment
Reithrodontomys raviventris	salt-marsh harvest mouse	FE, CE, FP	Marshes and wetland edges	None; suitable habitat will be excluded from the project area.	None
Spirinchus thaleichthys	longfin smelt	FC, CT	Aquatic	None; aquatic species. Aquatic areas are excluded from the project footprint.	None
Strix occidentalis caurina	Northern spotted owl	FT, CT	Dense canopies of mature and old-growth forests. Nests in tree hollows	Moderate to known to occur; a known activity center overlaps with the fuel reduction zone and nests are known to occur directly adjacent	Low – high-impact work would occur outside nesting season or surveys would be conducted (NSO-1, NSO-2). Removal would focus on small trees and hazardous fuels; healthy, mature trees would not be removed; removal of larger hazard trees would not occur without consultation with a qualified biologist (NSO-3). Species would be included in environmental training to ensure avoidance (ET-1).

Notes: Species with occurrences within 3 miles of project areas were examined. Species which are considered "extirpated" or those with occurrence data greater than 75 years old were removed from the analysis as they are not anticipated to occur in the vicinity of the work area. Species with occurrence data which was greater than 50 years old was examined for inclusion on a case-by-case basis.

FE	Federally Endangered	CR	California Rare
FT	Federally Threatened	CC	California State Candidate
FC	Federal Candidate	FP	Fully Protected
CE	California State Endangered	SSC	California State Species of Special Concern
CT	California State Threatened	CNPS	California Native Plant Society

Source: (CDFW, 2021; CNPS, 2021; CDFG, 2003; Hickman, 1993; Stebbins, 2003)

Cultural Resources and Tribal Cultural Resources[13]		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Equipment and vehicles for the fuel reduction activities would operate from existing roads and trails adjacent to the work areas. No intense ground disturbing activities (e.g., discing) would occur. While some hand pulling of invasive species may occur, the potential to disturb cultural resources is generally low since this work results in little ground disturbance and no heavy equipment. Workers would participate in a cultural training and the Graton Rancheria would be notified of this project prior to proposed project implementation (CUL-1 and -4) and should a previously unidentified cultural resource be discovered, work would halt in the area and the resource fully avoided conducted (CUL-2). If any resources are discovered during implementation that require monitoring to continue treatment in the area, a qualified archaeological would be present and, as appropriate, a tribal monitor would be invited to monitor during ground disturbance (CUL-5). A cultural resources records search was completed for the fuel treatment zone (CUL-3). No previously documented cultural resources were found to occur in these areas (Far Western, 2022).

Pile burning would not cause ground disturbance. Heat from a wildfire or a prescribed burn may scorch, create a buildup of residue on the resource, fracture the resource, or destroy the resource (Sturdevant, Skalsky, Wienk, & Dolan, 2009). Pile burning would only be conducted in areas that have had a cultural survey conducted, as determined via a cultural records search, or a site-specific survey of pile burn areas would be conducted to ensure avoidance of any cultural resources (CUL-3). Alternatively, pile burning would occur in a previously disturbed area such as a trail after inspection for the presence of cultural resources, depending on the location and previous use, as appropriate. Significant impacts on cultural resources and human remains would not occur.

Energy		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

The vehicles and equipment conducting the fuel reduction activities would consume energy, including gas, diesel, and motor oil. Vehicle engines and fuel used during implementation of the project would comply with State and local energy reduction and efficiency requirements. The use of fuel to implement the project would be minimal and the proposed fuel consumption would, additionally, be considered beneficial and not wasteful given the positive outcome of the work to create defensible space between occupied structures and open space areas. Implementation of fuel reduction activities would not cause a significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

[13] No tribal consultation requirement is associated with filing a notice of exemption per Assembly Bill 52 (PRC §21080.3.1.(b)).

Geology and Soils		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Vehicle travel to the work areas would generally occur on existing paved roads. Work areas would be accessed on foot, and operation of equipment would occur using existing paved roads adjacent to the work areas.

Soil erosion and loss of topsoil could occur during manual and mechanical vegetation cutting and removal through the exposure of bare soils or ground disturbance from pulling large vegetation. After the vegetation thinning is completed, erosion and topsoil loss through loss of root-soil matrix strength if root systems die is expected to be minimal. Root systems of larger vegetation would generally be left in place, minimizing the potential for erosion. No serpentine soils, which are typically vulnerable to erosion, are documented within the project area (Figure 1). While some soil types present in work areas may be more prone to erosion than others, vegetation removal and cutting that maintain at least 70 percent of groundcover would not result in substantial erosion (Lang & McDonald, 2005). Erosion control devices would be installed (GEO-1) in areas where erosion could occur. Vegetation debris piles are localized and relatively small in size. Burn scars from pile burning would not be significant enough to result in increased soil erosion and topsoil loss. Significant impacts related to erosion and loss of topsoil would not occur.

Greenhouse Gas Emissions		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Vegetation thinning activities would involve manual and mechanical vegetation removal and pile burning within the fuel reduction zone. Greenhouse gas (GHG) emissions from pile burning would vary daily depending on the number of piles burned each workday. However, pile burns would have low GHG emissions compared to GHG emitted from catastrophic wildfires. Use of vehicles and equipment during these activities and vehicle travel to treatment areas would generate some GHG. Project activities would not generate significant quantities of GHG emissions[14].

The proposed project would involve vegetation thinning and would not typically remove any healthy, mature trees. Thinning can result in greater sequestration rates by reducing competition for the larger, more resilient trees (CAL FIRE, 2018). These processes are not quantified but would fluctuate during initial treatment and future maintenance. Due to the current higher fuel loads, it is anticipated that a net release of carbon from removal of vegetation could occur, at least in the near-term as the ecosystem fuel loads are restored

[14] BAAQMD has established thresholds of significance for GHG emissions meant primarily for evaluating GHGs associated with land-use development or stationary-source projects, but the thresholds are not recommended for vegetation-management projects (Flores, 2020).

closer to pre-fire suppression conditions and wildland fire risk is minimized while defensible space is improved. The fluctuation would be insignificant compared to overall carbon stock in Marin County. Significant greenhouse gas emission impacts would not occur.

Hazards and Hazardous Materials		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Trucks, vehicles, and equipment are used for ongoing vegetation management throughout Marin County. Workers handling hazardous materials are required to adhere to Occupational Safety and Health Administration (OSHA) and Cal/OSHA health and safety requirements to protect workers and minimize risks of accidental spills of fuels and lubricants. As part of the proposed project, spill prevention and response measures would be implemented that would ensure that hazardous materials are properly stored on-site and that any accidental releases of hazardous materials would be properly controlled and quickly cleaned up (HAZ-1).). The proposed project would comply with all herbicide regulations (HAZ-4), including the U.S. Environmental Protection Agency (EPA) Hazardous Materials Transportation Act, Federal Insecticide, Fungicide, and Rodenticide Act, and the Agricultural Worker Protection Standards (WPS). Herbicides prohibited by the EPA would not be applied, and the proposed project would comply with the requirements of the WPS to protect workers applying herbicides from occupational exposure. The proposed project would also require the minimization of herbicide drift to public areas, herbicide containers would be triple rinsed at an approved site, and signage would be placed in any herbicide application area within 500 feet of adjacent public recreation areas (HAZ-4). Off-road grading or other intense ground disturbance would not occur, ensuring that any potential existing contamination would not be disturbed and would not pose a risk to the environment or public. Pile burning would occur in areas of lowest risk for fire spread and under conditions to ensure control of the burn. Burning would only be performed with a burn permit by qualified personnel. Pile burning would adhere to all BAAQMD Regulation 5 Open Burning requirements. Work crews would maintain fire suppression equipment in work vehicles (HAZ-2). Significant impacts related to hazards and hazardous materials would not occur.

Hydrology and Water Quality		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Work areas would be mostly accessed using existing paved roads adjacent to the work areas. Riparian woodlands may be encountered but any vegetation trimming, or thinning would be conducted by hand and alteration to, and deposition of debris avoided within the bed, channel, or bank of a waterway (SH-1). Herbicide mixing would occur away from waterways in areas devoid of vegetation, and only herbicides approved for use in aquatic environments would be applied by hand in riparian habitats (HAZ-5). Hand pulling, particularly of invasive broom, could occur within the fuel reduction zone. The majority of the proposed manual and mechanical vegetation removal activities would not result in circumstances that would result in significant ground cover removal and, thus, significant erosion and subsequent sedimentation. For the rare instances where erosion could occur, erosion control measures would be implemented (GEO-1). Burn piles would generally only be 4 feet in diameter and would not

impact a large enough area to cause a significant change in stormwater runoff patterns that could result in sedimentation or siltation. Erosion and subsequent sedimentation of waterways would not occur. Significant water quality impacts would not occur.

Land Use and Planning		
Question	**Yes**	**No**
Relevant to the project?	☐	☒
Potential for significant impact?	☐	☒

Implementation of treatment activities would not involve any new development or changes to land uses that could physically divide a community. The proposed project is consistent with the objectives of the Marin Wildfire Prevention Authority, the Marin County Community Wildfire Protection Plan (2020), and the LMP (2014). The LMP identifies several management actions for the land managed by Homestead Valley Land Trust including fire fuel reduction and invasive plant control. The proposed project designed and implemented in accordance with the Project Design and Implementation Features would not involve any fuel reduction or invasive species removal activities that are incompatible with the fuel management activities and best management practices incorporated into the LMP. All activities conducted would comply with local land use regulations and policies.

Mineral Resources		
Question	**Yes**	**No**
Relevant to the project?	☐	☒
Potential for significant impact?	☐	☒

Fuel reduction activities would not result in the loss of availability of a known mineral resource because the work would occur within up to 100 feet of existing structures and would not permanently alter any features. Vegetation clearance is intended to increase defensible space between communities and open space and would not alter land uses, access, or subsurface areas that could impact mineral resources.

Noise		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

The proposed fuel reduction activities would occur on weekdays between 8:00 am and 5:00 pm. This timeframe would conform with the appropriate noise ordinance (Marin County Noise Ordinance § 6.70.030) [15], which allows construction activities Monday through Friday 7:00 am to 6:00 pm. Work would progress along the fuel reduction zone, limiting noise in any one

[15] While these activities are not construction and do not require a construction permit, some of the equipment generates noise levels similar to construction equipment (e.g., noise level of a chainsaw is ≤82 dBA L_{max} at 50 feet (USDOT, 2008) such that a comparison could be made and justification for ensuring work hours conform.

location to a few hours. Most recreationalists or motorists are only in a single area for a short duration and would be able to move away from noisy areas with little impact on their experience. Residences would experience noise associated with activities, but it is anticipated that activities in any one location would only occur for a few hours. A single residence may be able to hear equipment operating for a day as activities progress along the fuel reduction zone. Measures to minimize noise disruption to nearby neighbors would be implemented, as needed (NOI-1). Exceedances of local noise standards would not occur (given the short duration of noise generation in any one location and existing noise levels) and significant noise impacts would not occur.

Population and Housing		
Question	**Yes**	**No**
Relevant to the project?	☐	☒
Potential for significant impact?	☐	☒

The workers implementing the fuel reduction activities are anticipated to be sourced from the existing contractor and conservation crews in the region. As such, this proposed project would not induce population growth. No impact related to population and housing would occur.

Public Services		
Question	**Yes**	**No**
Relevant to the project?	☐	☒
Potential for significant impact?	☐	☒

The proposed project would not directly or indirectly induce population growth indirectly necessitating more public services. No new or altered governmental facilities would be needed to provide public services as a result of the proposed project, and the proposed project would not result in increased demand for public services. No impact related to public services would occur.

Recreation		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Treatments would occur within the Homestead Valley Open Space on Marin County lands managed by Homestead Valley Land Trust as well as other open spaces in the unincorporated county (see Figure 1). Fuel reduction activities would be performed within up to 100 feet of structures. Treatment areas and trails that are accessible to the public may be closed for short durations during fuel reduction activities and pile burning for safety purposes. Much of the work areas are located near trails where recreationalists could be located. Recreational trails would be unavailable or flagged off during vegetation management activities, the treatments and pile burning would be for a short duration in one area, typically for only a few hours to a few days. Signs would be posted at each end of herbicide applications areas and any intersecting trails notifying the public of the use of herbicides in recreational areas (HAZ-5). Ample recreational opportunities are available within and surrounding the Southern Marin Zone (e.g., Muir Woods National Monument, MCOSD open space preserves) that a few displaced recreationalists could use if discrete areas are

unavailable due to vegetation management activities. The proposed project would not directly or indirectly induce population growth that could increase the use of recreational facilities. Significant recreational impacts would not occur.

Transportation		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Multiple crews could conduct vegetation management activities within the fuel reduction zone in a single day. A single crew of up to 8 workers would likely be working at a single work area and up to four crews may operate at a time. An estimated 8 to 66 daily one-way vehicle trips would occur, which would not exceed the threshold of 110 trips per day[16]. The VMT associated with implementation of the proposed project would not conflict with State CEQA Guidelines section 15064.3, subdivision (b). Pile burning could be conducted as a method of vegetative debris disposal. Pile burns would be performed away from roadways and would not be a hazard to passing motorists or recreationalists due to the small size of the burns and monitoring during the burn. No significant traffic impacts would occur.

Utilities and Service Systems		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

Biomass generated from vegetation removal activities may be processed using a chipper if pile burning is not used. As the vegetation grows back and follow up maintenance is conducted in future years, additional vegetative materials would be chipped and trucked away. Materials would be trucked to Marin Resource Recovery Center, which have a permitted capacity of 2,640 tons per day and would be able to accept the chipped material (CalRecycle, 2021). No impact related to utilities and service systems would occur.

Wildfire		
Question	**Yes**	**No**
Relevant to the project?	☒	☐
Potential for significant impact?	☐	☒

The fuel reduction zone is within the State Responsibility Area (LRA) and Federal Responsibility Area (FRA) in moderate, high, and very high fire hazard severity zones (CAL FIRE, 2007/2008). The purpose of the proposed project is to reduce fuel loads, which would

[16] The Office of Planning and Research identifies a screening threshold for a small land-use project as a project that generates or attracts fewer than 110 trips per day. Projects that generate fewer than this threshold may be assumed to cause a less-than-significant transportation impact (OPR, 2017). Although a vegetation treatment project is not a land use project, it is assumed that the screening threshold would still apply to the project.

reduce the spread and intensity of a wildfire, should one occur and to provide defensible space for fire suppression crews to safely defend communities. Fuel reduction crews would maintain fire suppression equipment (e.g., Pulaski axe, shovel, fire extinguisher) in work vehicles during activities that can generate sparks or heat (HAZ-2). The proposed project would not impair an adopted emergency response plan or evacuation plan. The proposed project does not involve installation or maintenance of any infrastructure that could exacerbate fire risk. The proposed project does not involve intense ground disturbing activities that could result in downslope or downstream flooding or landslides should a wildfire occur.

Pile burning would not exacerbate wildfire risk. Pile burning would occur in areas of lowest risk for fire spread. Piles would be relatively small in size and monitored by a qualified professional during the burn. Pile burning would be conducted by a qualified professional in accordance with the burn permit and standard industry practices including the California Forest Practice Rules, which would ensure that people and structures would not be exposed to significant risks. Impacts to people and structures from increased fire risk would not occur.

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Figure 1 Fuel Reduction Zone

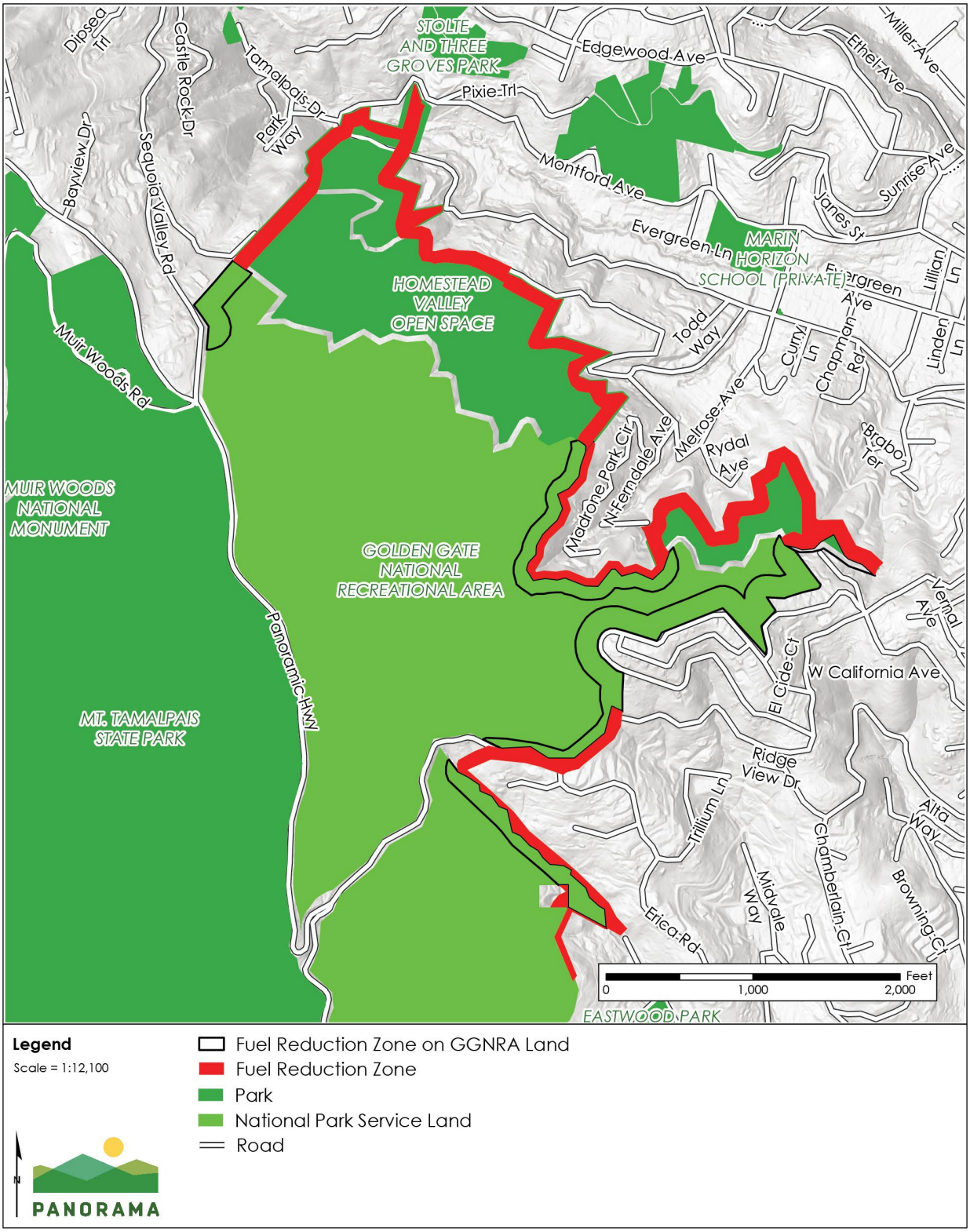


Figure 2 Special-Status Plant Occurrences

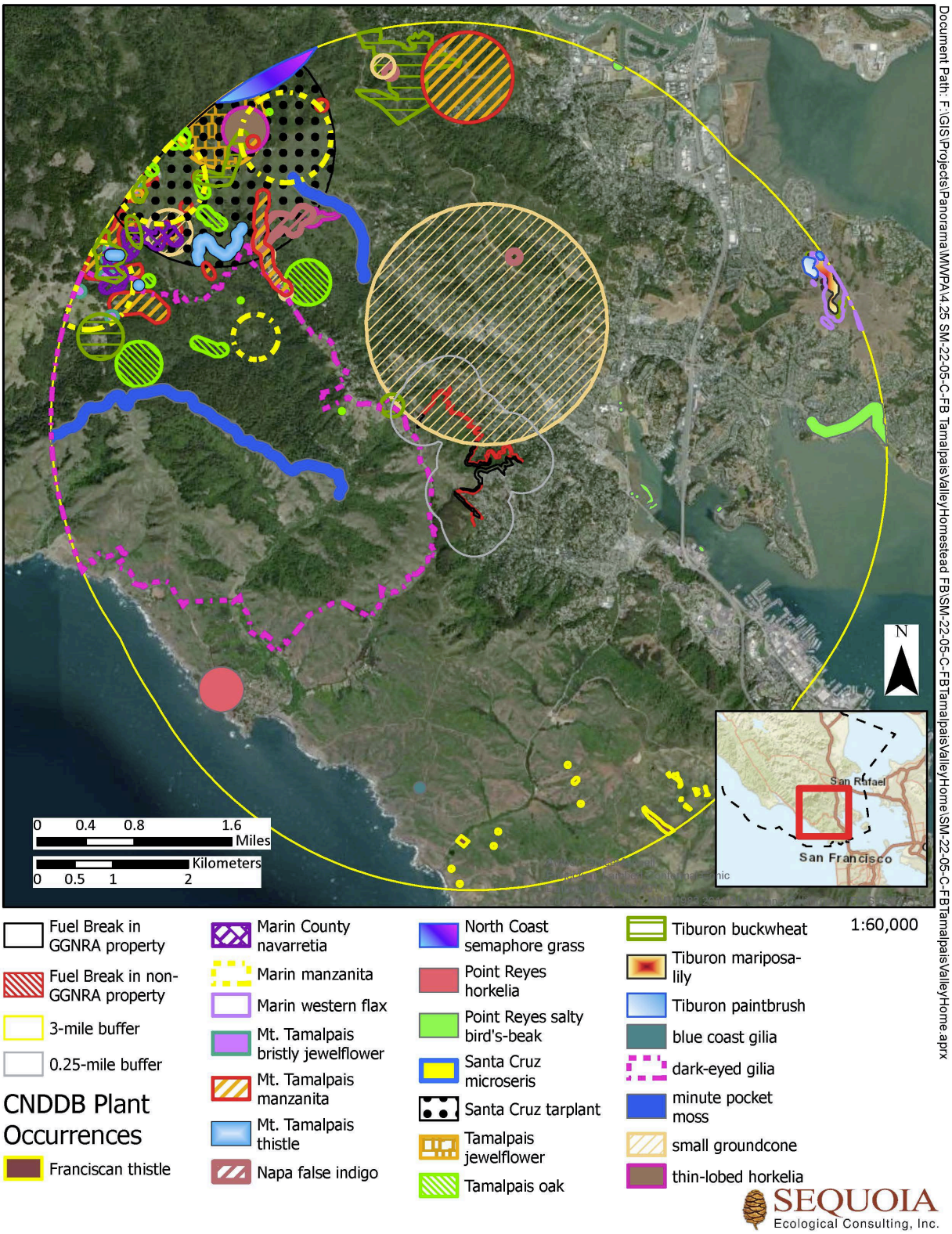


Figure 3 Special-Status Wildlife Occurrences

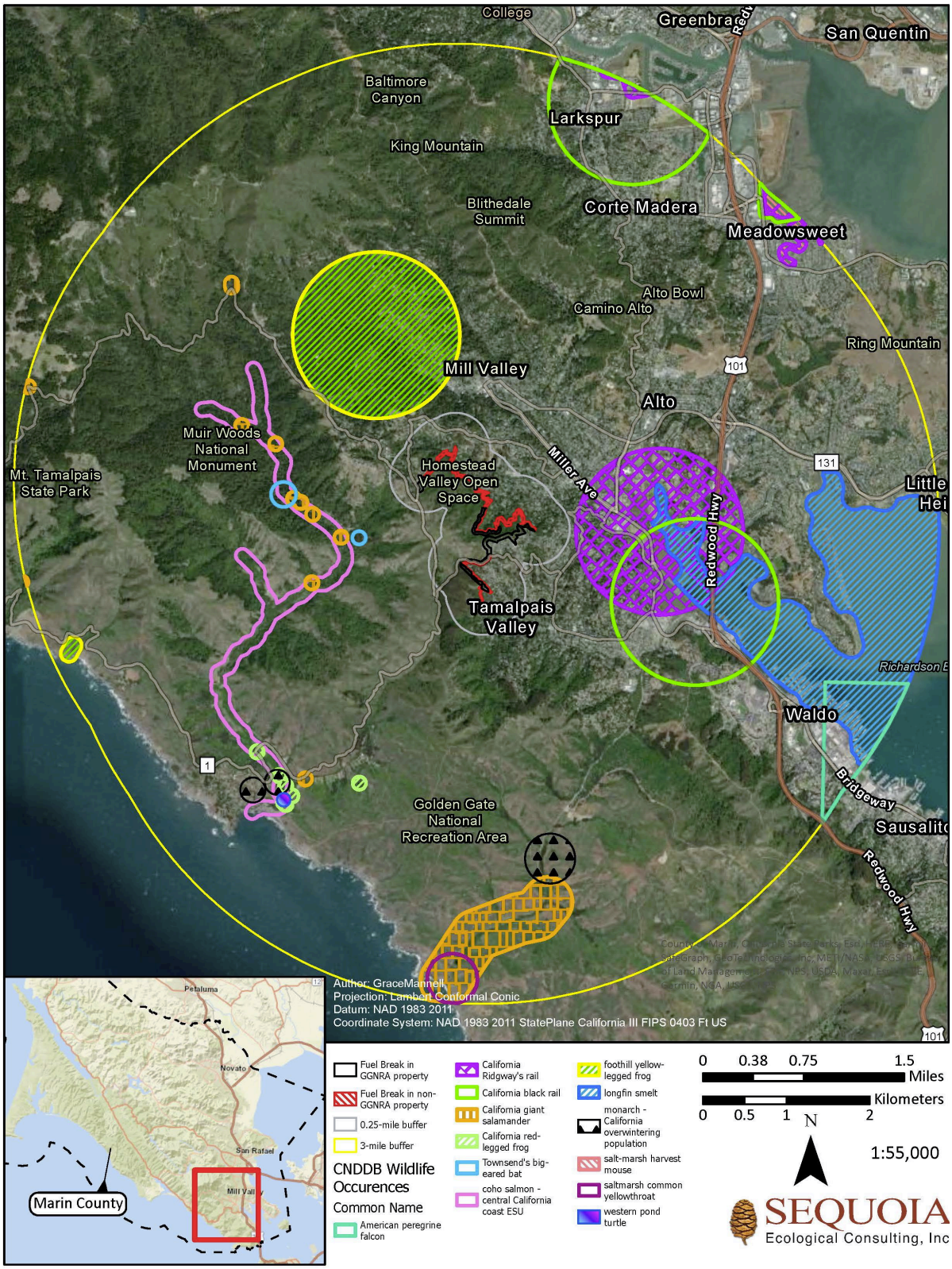
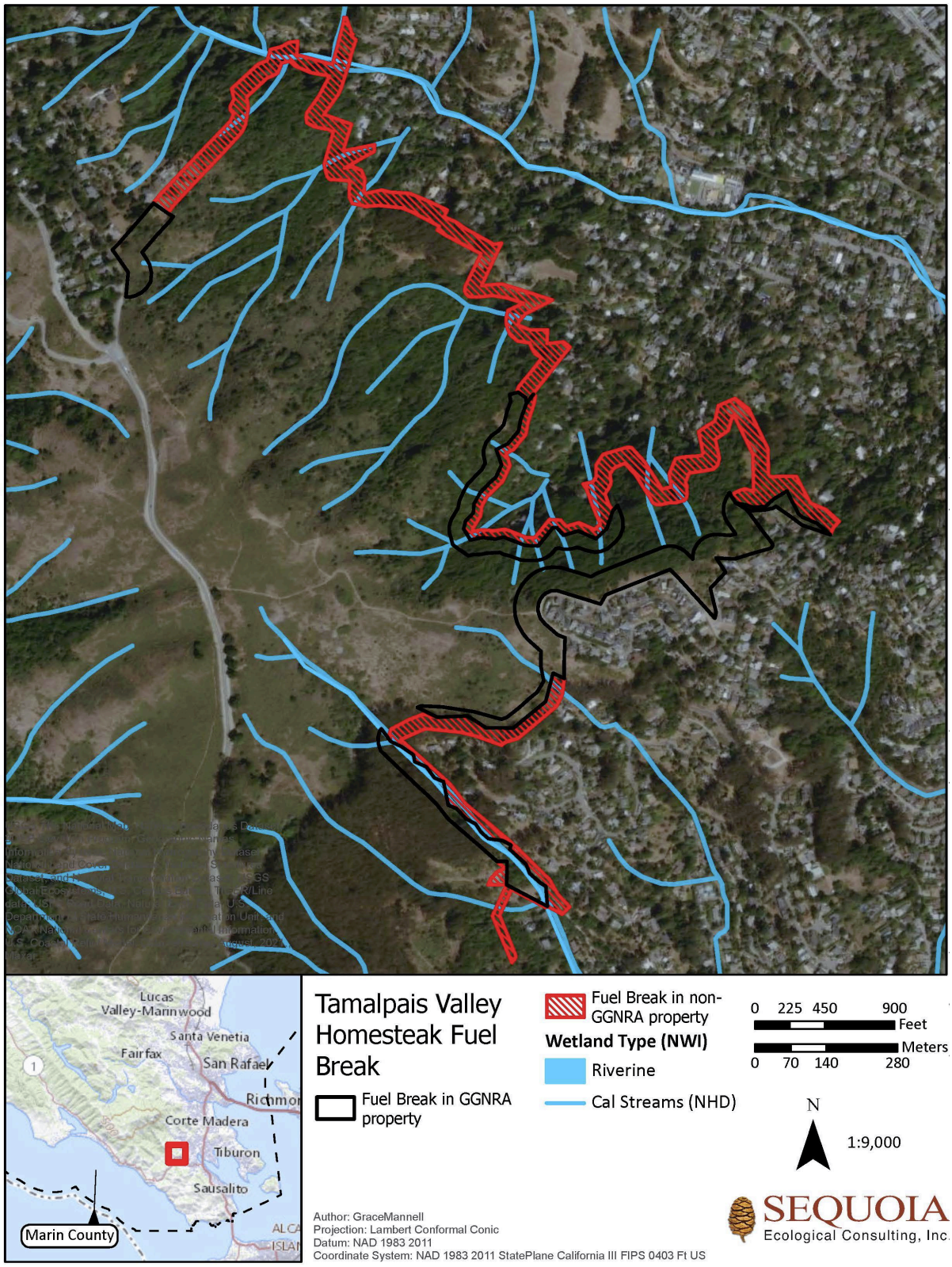


Figure 4 Northern Spotted Owl Observations

Figure omitted to protect northern spotted owl nest locations.

Figure 5 Wetlands and Waterways



FILED
SEP 22 2022
SHELLY SCOTT
MARIN COUNTY CLERK
By O. Lebau Deputy

Notice of Exemption

21-2022-207

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044
County Clerk County of: Marin
Marin Civic Center
3501 Civic Center Dr., Suite 234,
San Rafael, CA 94903

From (Public Agency):
Marin Wildfire Prevention Authority
1600 Los Gamos Drive, Suite 345
Sausalito, CA 94903

Project Title: Southern Marin Zone – Tamalpais Valley/Homestead Fuel Break Project (Federal Portion)

Project Applicant: Marin Wildfire Prevention Authority

Project Location – Specific: The proposed fuel break would be located within the Golden Gate National Recreation Area (GGNRA)

Project Location – City:
Tamalpais Homestead Valley

Project Location – County:
Marin County

Description of Nature, Purpose and Beneficiaries of Project:
The proposed project would establish and maintain a defensible space zone along the perimeter of Department of the Interior (NPS) land that is directly adjacent to the Tamalpais Valley and Homestead residential hillside communities in high fire danger zones.

Name of Public Agency Approving Project: Marin Wildfire Prevention Authority

Name of Person or Agency Carrying Out Project: Marin Wildfire Prevention Authority

Exempt Status (check one):

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☐ Common Sense Exemption (Sec. 15061(b)(3));
- ☐ Categorical Exemption. State type and section number:
- ☒ Statutory Exemptions. State code number: Senate Bill 901, Public Resources Code Section 4799.05 (d)(1)

Reasons why project is exempt:
The proposed project is statutorily exempt from the California Environmental Quality Act (CEQA) in accordance with the provisions of Senate Bill (SB) 901. Public Resources Code Section 4799.05 states:

> "(d) (1) Division 13 (commencing with Section 21000 [CEQA]) does not apply to prescribed fire, thinning, or fuel reduction projects undertaken on federal lands to reduce the risk of high-severity wildfire that have been reviewed under the

POSTED 9/22/22 TO 10/22/22

federal National Environmental Policy Act of 1969 (42 U.S.C. Sec. 4321) if either of the following is satisfied:

(A) The primary role of a state or local agency is providing funding or staffing for those projects.

(B) A state or local agency is undertaking those projects pursuant to the federal Good Neighbor Authority (Public Law 113-79) or a stewardship agreement with the federal government entered into pursuant to Public Law 113-79.

(2) Division 13 (commencing with Section 21000) does not apply to the issuance of a permit or other project approval by a state or local agency for projects described in paragraph (1).

(3) This section does not alter, affect, or in any way diminish the authority of a state or local agency to impose mitigation measures or conditions on projects described in paragraph (1) pursuant to other laws or regulations.

(4) Commencing December 31, 2019, and annually thereafter, the department shall report to the relevant policy committees of the Legislature the number of times the process in this subdivision was used.

(5) (A) This subdivision shall remain operative only if the Secretary of the Natural Resources Agency certifies on or before January 1 of each year that the National Environmental Policy Act of 1969 or other federal laws that affect the management of federal forest lands in California have not been substantially amended on or after August 31, 2018.

(B) Any CEQA exemption established under this subdivision shall continue in effect for those projects conducted under a National Environmental Policy Act record of decision, finding of no significant impact, or notice of exemption or exclusion that was issued prior to the date by which the Secretary determines that the National Environmental Policy Act or federal forest management laws were substantially amended.

(6) This subdivision shall become inoperative on January 1, 2023."

In accordance with Sections 2.2 and 3.6 of the 2015 NPS National Environmental Policy Act (NEPA) Handbook, the proposed project satisfied the requirements for a Memorandum to File. The proposed project was reviewed by the appropriate GGNRA Interdisciplinary Team (IDT). The IDT determined that the proposed project would involve manual and mechanical treatments to reduce fuel loading near developed areas and falls within the annual 595 acres allowed to be treated. The IDT has therefore determined there are no substantive differences between the current proposal and the selected action (Alternative C – Hazard Reduction and Resource Enhancement through Multiple Treatments) as described in the GGNRA Fire Management Plan (FMP) Final Environmental Impact Statement (FEIS) and Record of Decision

(ROD). The scope of the proposed project was found to be consistent with a fuel reduction and thinning project on federal land for which NEPA was already conducted. A Memorandum to File was filed with NPS in July 2022.

The approved Memorandum to File by NPS confirms that the proposed project is within the scope of the certified FMP EIS. The fuel reduction project would involve vegetation trimming and removal within NPS lands, and would form a defensible space zone between the open space on NPS land and the Tamalpais Valley and Homestead residential hillside communities in the Southern Marin Zone. The defensible space zone would reduce the risk of high-severity wildfire on federal lands in accordance with the intent of SB 901.

Lead Agency Contact Person: Mark Brown, Executive Officer

Area Code/Telephone/Extension: (415) 246-0280

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project?
   Yes☐ No☐

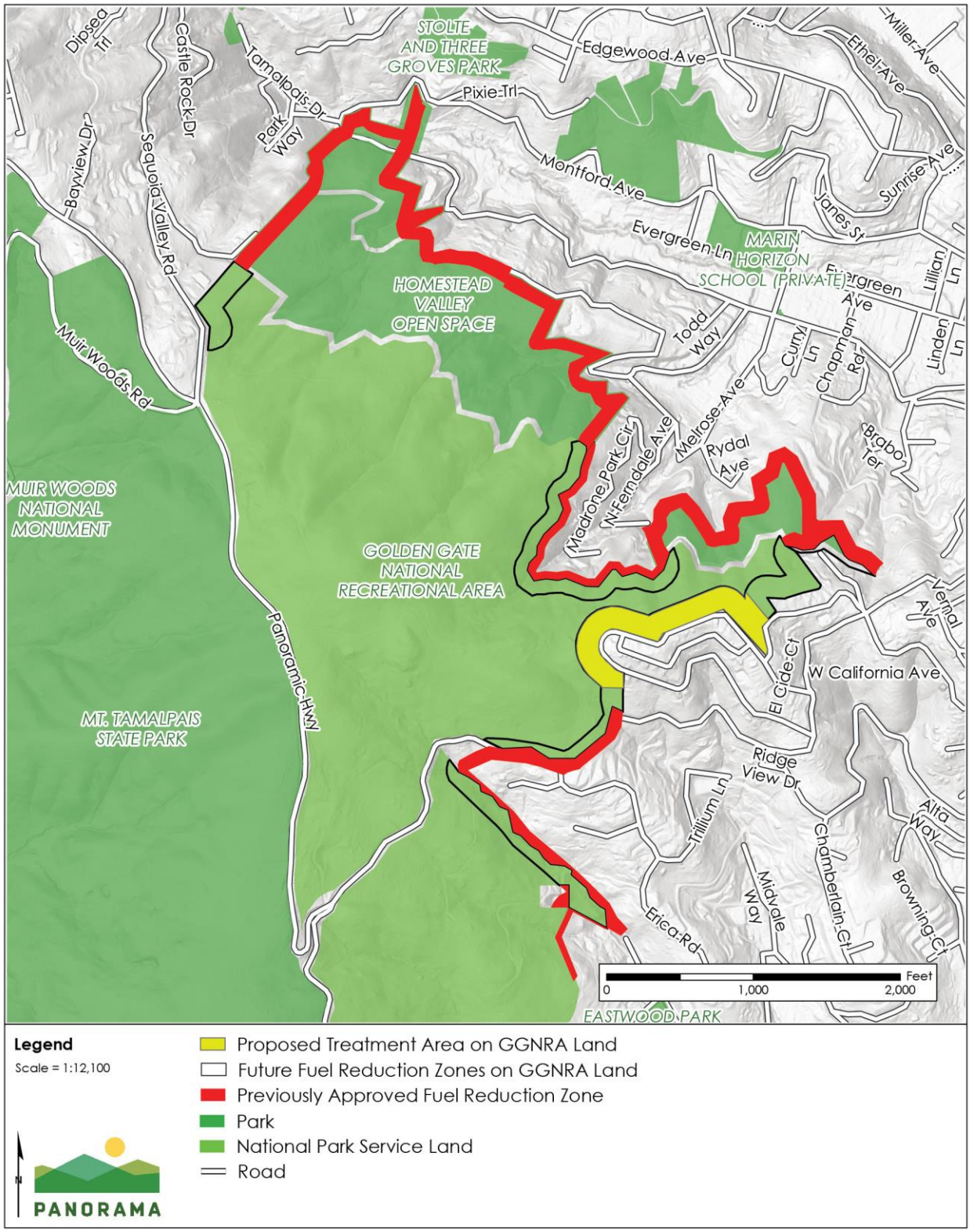
Signature: _____ Date: 9/16/22 Title: EXECUTIVE OFFICER

☒ Signed by Lead Agency ☐ Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR: _____

Figure 1 Project Vegetation Treatment Area



Date: September 15, 2022

Project: Southern Marin Zone – Tamalpais Valley/Homestead Fuel Break Project

Previous NEPA Documentation and Adequacy Determination

Background

The National Parks Service (NPS) certified the Golden Gate National Recreation Area (GGNRA), Muir Woods National Monument, and Fort Point National Historic Site Fire Management Plan (GGNRA FMP) Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) on February 23, 2006, which covers fuel reduction projects on GGNRA land (NPS, 2006). The FMP EIS and ROD are incorporated by reference into this memorandum. The purpose of the GGNRA FMP FEIS was to provide a framework for fire management activities in a manner that helps achieve resource management objectives consistent with the NPS's cultural and natural resources, and land management plans; reduces risks to developed facilities and adjacent communities; and addresses safety considerations for park visitors, employees, and resources.

The specific purposes of the FMP EIS are:

- To implement fire management activities that are consistent with the Federal Wildland Fire Management Policy and conform to agency guidelines for fire management plans and programs; and
- To help achieve resource management objectives consistent with the park's cultural, natural resource, and land management plans and be responsive to safety considerations for park visitors, adjacent communities, employees, and resources.

A set of goals was developed by NPS staff during the FMP EIS planning process. The goals were derived from federal wildland fire management policy, NPS management policies, the 1980 GGNRA General Management Plan (GMP), and comments and concerns expressed by the public and agencies during the scoping period. Management objectives, detailed in section 1.4, Purpose and Need for Action of the FMP FEIS, were developed for each goal and describe what must be accomplished in order for the fire management program to be considered successful. The goals were then used in the formulation of the alternatives analyzed in the FEIS. In addition to the FMP goals, the planning area's topography, hydrology, the results of fire hazard modeling, analysis of current development patterns, and the locations and types of significant park resources served to inform NPS staff as they developed Fire Management Units (FMU's) for the FMP. The FMU's were then used as a means to evaluate and analyze management alternatives. An FMU is any land management area that can be defined by management goals and constraints, topographic features, access corridors, values at risk or values to be protected, political boundaries, fuel types, or major fire regime groups that set it apart from management characteristics of an adjacent unit. The selected action, Alternative C - Hazard Reduction and Resource Enhancement through Multiple Treatments, is the approved preferred alternative from the FMP FEIS. Alternative C will allow for the greatest number of acres to be treated annually to achieve fire management and resource objectives through the use of a broad range of fire management strategies. As documented in the FEIS, Alternative C was also deemed to be the "Environmentally Preferred" Alternative. Given favorable weather

conditions and adequate project funding, Alternative C would permit up to 595 acres be treated per year using mechanical treatments and prescribed fire. Refer to the FMP EIS for the environmental analysis of Alternative C.

NEPA Adequacy Determination

In accordance with Sections 2.2 and 3.6 of the 2015 NPS NEPA Handbook, the Tamalpais Valley/Homestead Fuel Break Project (proposed project) satisfied the requirements for a Memorandum to File. The proposed project was reviewed by the appropriate GGNRA Interdisciplinary Team (IDT). The IDT determined that the proposed project would involve manual and mechanical treatments to reduce fuel loading near developed areas and falls within the annual 595 acres allowed to be treated. The IDT has therefore determined there are no substantive differences between the current proposal and the selected action (Alternative C – Hazard Reduction and Resource Enhancement through Multiple Treatments) as described in the GGNRA FMP FEIS/ROD. The scope of the proposed project was found to be consistent with a fuel reduction and thinning project on federal land for which NEPA was already conducted. A Memorandum to File was filed with NPS in July 27, 2022.

CEQA Exemption Summary

The Marin Wildfire Prevention Authority (MWPA) has determined that the proposed project is statutorily exempt from the California Environmental Quality Act (CEQA) in accordance with the provisions of Senate Bill (SB) 901. Public Resources Code Section 4799.05 states:

> "(d) (1) Division 13 (commencing with Section 21000 [CEQA]) does not apply to prescribed fire, thinning, or fuel reduction projects undertaken on federal lands to reduce the risk of high-severity wildfire that have been reviewed under the federal National Environmental Policy Act of 1969 (42 U.S.C. Sec. 4321) if either of the following is satisfied:
>
> (A) The primary role of a state or local agency is providing funding or staffing for those projects.
>
> (B) A state or local agency is undertaking those projects pursuant to the federal Good Neighbor Authority (Public Law 113-79) or a stewardship agreement with the federal government entered into pursuant to Public Law 113-79.
>
> (2) Division 13 (commencing with Section 21000) does not apply to the issuance of a permit or other project approval by a state or local agency for projects described in paragraph (1).
>
> (3) This section does not alter, affect, or in any way diminish the authority of a state or local agency to impose mitigation measures or conditions on projects described in paragraph (1) pursuant to other laws or regulations.
>
> (4) Commencing December 31, 2019, and annually thereafter, the department shall report to the relevant policy committees of the Legislature the number of times the process in this subdivision was used.
>
> (5) (A) This subdivision shall remain operative only if the Secretary of the Natural Resources Agency certifies on or before January 1 of each year that the National Environmental Policy Act of 1969 or other federal laws that affect the management of federal forest lands in California have not been substantially amended on or after August 31, 2018.

(B) Any CEQA exemption established under this subdivision shall continue in effect for those projects conducted under a National Environmental Policy Act record of decision, finding of no significant impact, or notice of exemption or exclusion that was issued prior to the date by which the Secretary determines that the National Environmental Policy Act or federal forest management laws were substantially amended.

(6) This subdivision shall become inoperative on January 1, 2023."

The approved Memorandum to File by NPS confirms that the proposed project is within the scope of the certified FMP EIS. The fuel reduction project would involve vegetation trimming and removal within NPS lands, and would form a defensible space zone between the open space on NPS land and the Tamalpais Valley and Homestead Valley residential hillside communities in the Southern Marin Zone. The defensible space zone would reduce the risk of high-severity wildfire on federal lands in accordance with the intent of SB 901.

Project Purpose

The proposed project would establish and maintain a defensible space zone along the perimeter of Department of the Interior (NPS) land that is directly adjacent to the Tamalpais Valley and Homestead Valley residential hillside communities in high fire danger zones.

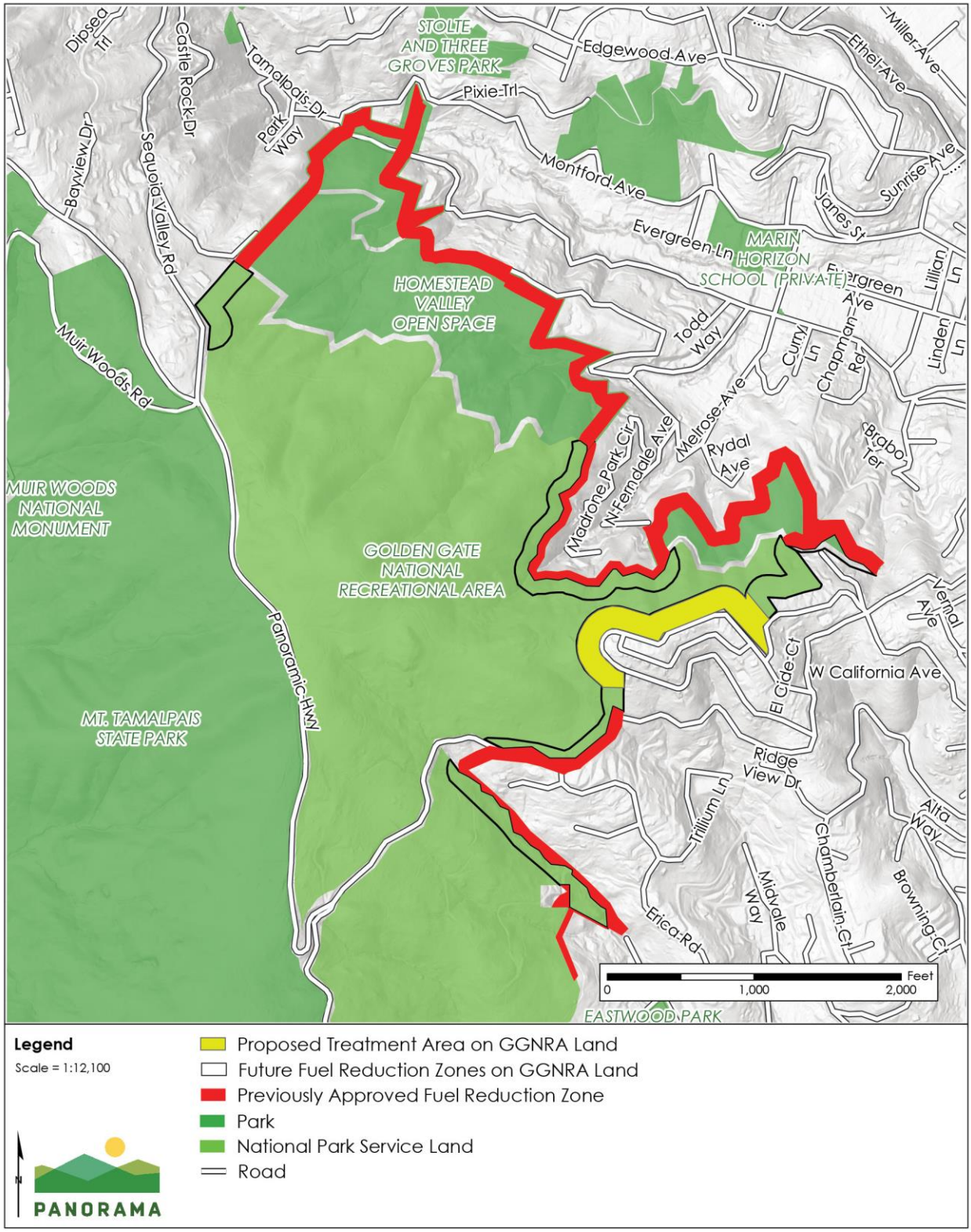
Project Description

Treatment Areas

The proposed treatment activities would be completed along the Tamalpais Valley and Homestead Valley residential hillside communities in the Southern Marin Zone as shown in Figure 1. Approximately 22.7 acres of fuel reduction was identified within NPS lands for treatment along these communities as part of the overall proposed project. Treatment activities would involve vegetation removal within 200 feet from structures. The proposed project would provide defensible space for homes directly adjacent to GGNRA lands. Approximately 28 acres of the fuel reduction area on non-GGNRA lands owned and/or managed by the Homestead Valley Land Trust and County Service Area 14, Tamalpais Community Service District (CSD), and private landowners was approved for treatment in April 2022. Generally, treatments would target invasive, non-native species, hazardous trees, and fire-hazardous vegetation. Dominant non-native, invasive species in the project area include French and Scotch broom, English ivy, eucalyptus, and woolly cotoneaster (Baxter Botanical, 2021). Treatment would not include the removal of healthy, mature, scenic trees. Fuel reduction treatments would avoid wetted streams and wetlands within the proposed treatment area. The proposed treatment area is primarily characterized by non-native annual grassland, chaparral, redwood forest, eucalyptus forest, non-native woodlands, and oak and mixed woodlands. Treatments vary depending on the cover type, as described by general vegetation community type.

The NPS approved 6.5 acres of the overall fuel reduction zone based on the prioritization and what could feasibly be completed within the annual work plan. The NPS will review the other segments of the proposed project that overlap with NPS lands in future years as part of their annual planning project. The area selected for the first year of treatment is generally the area of highest priority.

Figure 1 Project Vegetation Treatment Areas



Treatment Methods

Fuel treatment methods vary depending on cover type, condition of vegetation, topography, costs, and efficiency. The treatment methods or activities that could be used include:

- **Handheld Treatments:** includes use of hand tools and hand-operated power tools to cut, clear, or prune herbaceous woody species and remove dead woody vegetation and low-lying shrubs, and common coyote brush; typically used where access for larger equipment is not feasible. Invasive species removal can be done manually (or mechanically). The tools that could be used include chainsaws, loppers, and pole pruners.
- **Ground-Based Mechanical Treatments**: includes use of motorized equipment to cut, uproot, crush/compact, or chop existing vegetation on slopes generally less than 30 percent or 50 percent with special equipment. The equipment and tools that could be used include tractor-mounted masticators or mowers. A trailer-mounted chipper or tracked chipper would be brought to work areas, depending upon site access.
- **Herbicides:** Non-native, invasive shrubs, notably broom, eucalyptus, and acacia species, may be treated with herbicides after cutting, at the discretion of NPS staff. The vegetation would be cut with tools and then herbicide painted on immediately after treatment using spot treatments such as the painted cut-stump or other painted application methods.

Treatment Prescriptions by Cover Type

This section describes both the initial treatments and the on-going maintenance plan for each cover type, as shown in Figure 1. Maintenance would occur at the discretion of NPS staff. General plant communities (cover types) in the project area include grassland and chaparral, mixed woodland, and eucalyptus windrow. Some areas include large amounts of tall brush and dense stands of unmaintained trees. Non-native species are found within the treatment area and include eucalyptus, acacia, scotch broom, French broom, woolly cotoneaster, and English ivy. Thinning of shrubs in the fuel reduction zone would focus first on the removal of invasive species and then fire-prone species to achieve desired fuel reduction.

Grassland and Chaparral

Treatment Methods

Treatment within non-native annual grassland and chapparal communities would be limited to handheld and ground-based mechanical removal of grasses, dead woody vegetation, and removal of low-lying shrubs and brush to achieve horizontal spacing and reduce overall fuel loading.

Prescription

Native stands of brush would be thinned to a spacing of 5 to 10 feet, depending upon the site conditions. Non-native plant species such as broom would be removed. Typically, non-native species would be pulled by hand for removal, although larger individuals may be cut and treated with herbicide to prevent resprouting, if permitted per land managers/owners.

Oak and Mixed Woodland

Treatment Methods

Treatment within woodland communities (e.g., oak, California bay) would be limited to handheld and ground-based mechanical thinning using a hand crew.

Prescription

Fuel reduction work within woodland treatment areas would involve pruning tree branches up to 8 to 10 feet above ground (not to exceed 1/3 of the tree's height), removal of dead/downed branches, and the removal of small diameter (≤8 inches diameter at breast height [DBH]) live trees to achieve horizontal spacing. Smaller native trees, such as toyon, that are not considered fire hazardous, would not be removed. Understory ladder fuels including non-native, invasive Scotch broom and French broom, coyote brush shrubs, and shrub-like understory tree saplings would be removed or thinned, preferably by pulling. Non-native, invasive species may be treated with herbicide, at the discretion of the NPS. Hazardous trees (e.g., dead or dying trees), dead standing trees, and non-native trees would be removed where deemed appropriate in coordination with an arborist or qualified fire professional. In general, one snag would be retained per acre for habitat if the retained snag would not be a hazard. A hazard tree generally poses a risk of failure or fracture with the potential to cause injury to people or damage to property.

Disposal

Project debris would be disposed of through pile burning, chipping and broadcasting, or chipping and hauling, depending on the location and condition of the work area.

Cut material may be pile burned depending upon the conditions of the work area. Suitable treatment areas are typically flat or have gentle slopes and have open areas away from tree canopies and power lines. Areas selected for pile burning would be away from waterways. Piles would generally be 5 to 10 feet in diameter and 4 to 6 feet in height, but pile dimensions may vary. Multiple piles may be burned on a single day. Pile burning would be conducted in compliance with Bay Area Air Quality Management District (BAAQMD) Regulation 5 for open burning and burn day restrictions. Burning would be conducted in areas approved by NPS staff.

Material may also be chipped. The vegetative material would be fed through the chipper and broadcast at treatment areas or hauled away for disposal. Chipped material spread on site would be chipped to under 3 inches in size and would be applied 2 to 4 inches in depth at most to minimize wildfire risk. Disposed debris would be hauled to Marin Resource Recovery Center. Approximately, 2 to 10 tons (estimated 1.4 to 7 cubic yards) of material could be disposed of each workday.

Workers

A single contractor crew would consist of 4 to 8 workers at a single location. Up to four crews may be working at the same time across the fuel reduction zone.

Site Access

Treatment areas would be accessed via existing roads, fire roads, and trails to the maximum extent feasible. Private residences may be used as access points with the landowner's permission. Vehicles and equipment would be staged at the contractor's yard daily.

Schedule and Duration

All work would be performed on weekdays between 8:00 am and 5:00 pm. Initial treatments in this area are anticipated to start in October 2022. Following project implementation, the condition of the fuel reduction zone would be monitored and reassessed by fire department staff

every year to evaluate if maintenance is needed. Maintenance would occur at the discretion of NPS, but anticipated to be every 3 to 5 years in chaparral, woodlands, and forest communities and annually in grasslands. Areas of broom removal would initially be monitored one year after work and then every 2 or 3 years subsequently. French broom is anticipated to be treated using hand pulling for the first 1 to 3 years, and once containment is achieved, the primary treatment method would be mowing followed by cut and paint herbicide application until 80 percent control is achieved, then the treatment method would be changed back to hand pulling. Subsequent treatments are anticipated to be the same as the proposed activities but are subject to change depending on the condition of the fuel reduction zone and response to initial treatment.

FMP EIS Best Management Practices and Mitigation Measures

The NPS investigated all practical means to avoid or minimize environmental impacts that could result from implementation of the fire management activities approved through certification of the FMP EIS and ROD. A suite of best management practices and mitigation measures were identified in the FMP EIS/ROD to address potential environmental effects from implementation of fire management activities. The measures are designed to minimize or avoid the potential environmental impacts of the fire management actions to be implemented under the FMP FEIS or to create a beneficial effect. All relevant best management practices and mitigation measures identified in the ROD will be implemented as part of this project, which was determined to be within the scope of the FMP EIS (NPS, 2006).

PDIFs

The MWPA has developed specific design and implementation features adapted from several source documents referenced in footnotes after each name. In addition to the relevant best management practices and mitigation measures from the FMP EIS/ROD, the following PDIFs are part of the proposed project:

CUL-1 Training[1]

For all activities with the potential for ground disturbance (excluding prescribed herbivory, vegetation and tree trimming, and hand pulling smaller vegetation) all contractors and crew will receive training prepared by and/or conducted by a qualified archaeologist (who meets the U.S. Secretary of Interior's professional standards set forth in 48 CFR Parts 44738-44739 and Appendix A to 36 CFR 61) prior to beginning work. The Tribal Heritage Preservation Officer(s) (THPO) from a local tribe (Federated Indians of Graton Rancheria [Graton Rancheria]) will be notified of the opportunity to attend and/or train crews. The training will address the potential for encountering subsurface cultural resources, recognizing basic signs of a potential resource, understanding required procedures if a potential resource is identified including reporting the resource to a qualified archaeologist and/or THPO, as appropriate, and understanding all procedures required under Health and Safety Code § 7050.5 and PRC §§ 5097.94, 5097.98, and 5097.99 for the discovery of human remains.

[1] Adapted from measures in the Marin Municipal Water District, Final Program Environmental Impact Report for the Biodiversity, Fire, and Fuels Integrated Plan (BFFIP EIR), October 2019.

CUL-2 Unanticipated Discovery[2]

In the event that a previously unidentified cultural resource is discovered during implementation of an activity all work within a minimum of 150 feet of the discovery will be halted. The resource will be located, identified, and recorded in the MWPA cultural resources GIS database.

The boundaries around the buffered resource will be temporarily marked, such as with fencing or flagging. A qualified archaeologist will inspect the discovery and determine whether further investigation is required. Data regarding archaeological resources will be kept confidential per law. As appropriate, the qualified archaeologist will inform Graton Rancheria's THPO of the discovery. If the discovery can be avoided and no further impacts will occur, the resource will be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort will be required. If the project proponent wishes to continue work in the area, only work performed using hand tools or powered hand tools is allowed, work cannot include ground disturbance and the work area can only be accessed on foot as determined acceptable by the qualified cultural resource specialist/archaeologist.

Alternatively, the qualified archaeologist and/or THPO or tribal monitor will evaluate the resource and determine whether it is:

- Eligible for the CRHR (and a historical resource for purposes of CEQA),
- A unique archaeological resource as defined by CEQA, and/or
- A potential tribal cultural resource (all archaeological resources could be a tribal cultural resource).

If the resource is determined to be neither a unique archaeological, an historical resource, nor a potential tribal cultural resource, work may commence in the area.

If the resource meets the criteria for either a historical resource, unique archaeological resource, and/or tribal cultural resource, work will remain halted in the buffered area around the resource. No work will occur within the buffered area except those methods previously discussed as determined acceptable by the qualified archaeologist and/or THPO or tribal monitor. After work is completed, all cultural resource delineators (e.g., flags or fencing) will be removed in order to avoid potential vandalism, unauthorized excavation(s), etc.

CUL-3 Cultural Resource Investigation[2]

Prior to implementation of vegetation management activities that have potential for intensive ground disturbance below the ground surface, significant heat from a burn, or use of heavy equipment off established roads and trails, a qualified archaeologist will conduct a records search and/or site-specific survey of the project areas where such disturbances could occur. Outreach with Graton Rancheria will be conducted as early as feasible to obtain information regarding culturally sensitive areas and/or the location of tribal cultural resources within the project areas. Any information provided by Graton Rancheria and/or tribal monitor(s) is confidential and exempt from public disclosure in accordance with statutory and regulatory requirements (Gov. Code § 6254(r), 6254.10; PRC § 5097.98(c); Cal. Code Regs. § 15120(d)).

[2] Adapted from measures in the Midpeninsula Regional Open Space District, Wildland Fire Resiliency Program Final Environmental Impact Report (WFRP EIR), May 2021.

Records searches and field survey results will be shared with Graton Rancheria, as appropriate. Resources found during the records search, tribal outreach, and/or survey will be flagged for avoidance with an appropriate buffer identified by the qualified archaeologist, or the qualified archaeologist may identify modifications to the prescriptions using only hand tools or powered hand tools and access by foot with no ground disturbance, provided it would avoid all impacts to the resources. Any resource found during the site survey will be documented on California State Department of Parks and Recreation cultural resource record forms and a survey report will be completed for every cultural resource survey completed. The specific requirements will comply with the applicable state or local agency procedures.

CUL-4 Native American Project Notification

For core projects subject to a CEQA determination or compliance and requiring MWPA Board of Directors' approval, Graton Rancheria will be notified and project maps and/or spatial data provided for projects that will potentially entail ground disturbance. Any input from Graton Rancheria regarding specific resources that could be affected will be considered during project implementation through the methods of avoidance as described in CUL-3.

CUL-5 Cultural Resources Monitoring

Based on the results of CUL-3 and -4, cultural resources monitoring may be conducted in order to avoid impacts to known resources. In addition to flagging the resource for avoidance (as described in CUL-3) if monitoring is conducted, a qualified archaeologist will be present during ground disturbance work to ensure the known resources are avoided and protected during project implementation, and if the resource is identified to be pre-contact archaeological and/or a tribal cultural resource, a tribal monitor will be invited to attend during the ground disturbance work.

ET-1 Environmental Training for Biological Resources[3,4]

All crew members and contractors will receive training from a qualified registered professional forester (RPF) or biologist prior to beginning a treatment project where sensitive biological resources could occur in the work areas. The training will describe the appropriate work practices necessary to effectively implement the appropriate project design and implementation features and to comply with the applicable environmental laws and regulations. The training will include the identification, relevant life history information, and avoidance of potentially present special-status species with potential to occur; identification and avoidance of sensitive natural communities and habitats with the potential to occur in the treatment area; best management practices; and reporting requirements. As appropriate, the training will include protocols for work, such as specific trimming methods, where applicable. The training will instruct workers when it is appropriate to stop work and allow wildlife encountered during treatment activities to leave the area unharmed and when it is necessary to report encounters to a qualified RPF or biologist. The qualified RPF or biologist will immediately contact the California Department of

[3] Adapted from the measures in the East Bay Municipal Utility District (EBMUD) Practices and Procedures Monitoring and Reporting Plan Section 01 35 44 Environmental Requirements, August 2018.

[4] Adapted from measures in the California Board of Forestry and Fire Protection California Vegetation Treatment Program Final Environmental Impact Report (CalVTP EIR), November 2019.

Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS), as appropriate, if any wildlife protected by the CE Species Act (CESA) or Federal Endangered Species Act (ESA) is encountered and cannot leave the site on its own (without being handled).

ES-1 Environmental Surveys for Rare Plants

Within areas where rare and special-status plants have a moderate to high potential to occur, based on desktop data of habitat types, known site-specific information, and the professional judgement of qualified biologists, surveys will be conducted prior to any activity that has the potential to damage perennial plants or is proposed to occur during the flowering season for the specific annual plant species that has the potential to damage the flowering body and seeds of these plant species. Activities that have the potential to damage the flowering body may include but may not be limited to mowing, weed whacking, off-road vehicle and heavy equipment use, discing, and prescribed burning.

Surveys for rare plants will occur for these species across the entire project footprint. Surveys will occur during the blooming period, if feasible, and will occur prior to work for the specified special-status plant. If blooming period surveys are not feasible and the sensitive plant in question can be keyed to genus outside of the blooming period, surveys will be conducted for all members of the genus. Individuals will be flagged for avoidance or modified methods. Physical avoidance will include flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway) to delineate the boundary of the avoidance area around the suitable habitat and removal after completion. For physical avoidance, a buffer may be implemented as determined necessary by the biologist. Sensitive species damage or loss avoidance may include implementation of appropriate species-specific no-activity buffers around sensitive resources. Temporary fencing will also be implemented, as and where determined necessary based on the species tolerance, if grazing is prescribed in the area of flagged individuals for avoidance or modified methods (WILD-1).

IP-1 Clean Equipment[4,5]

All crew members, surveyors, and other personnel on site related to project activities will clean clothing, footwear, and equipment used during treatments of soil, seeds, vegetative matter, other debris or seed-bearing material, or water (e.g., rivers, streams, creeks, lakes) before entering the treatment area or when leaving an area with infestations of invasive plants, noxious weeds, known plant pathogens, or invasive wildlife.

IP-2 Prevent the Spread of Invasive Species and Plant Pathogens[4,5]

Segregate and treat soils and vegetation contaminated with invasive plant seeds and propagules. Treat, as appropriate, to prevent the spread of invasive plants. Treatment may include disposal on site within already infested areas, chipping or pile burning and mulching to eliminate viable seeds, or disposal at an approved cogeneration plant or green waste facility.

[5] Adapted from measures in the draft Ecologically Sound Practices Partnership, Ecologically Sound Practices for Vegetation Management (ESP) report, May 2021.

Minimize soil disturbance to the greatest extent possible to reduce the potential for introducing or spreading invasive plants or plant pathogens, to protect topsoil resources, and to reduce available habitat for the establishment of new invasive plants.

IP-3 Treat Invasive Plants Prior to Seeding[4,5]

Schedule activities to maximize the effectiveness of control efforts and minimize introduction and spread of invasive plants as feasible, with consideration for project objectives and location (e.g., install and maintain fuel breaks, disc lines, and other work before non-native plants set seeds).

IP-4 Retain Native Plants[4,5]

When removing vegetation, focus first on removing invasive and highly flammable species, and dead or diseased vegetation. Retain beneficial, low-fire risk native plant species whenever possible.

GEO-1 Erosion and Soils Loss Stabilization Measures[2]

Soils will be stabilized if a vegetation management activity may leave less than 70 percent groundcover or native mulch/organic material.

- For areas between 50 percent and 70 percent ground cover left:
- Sow native grasses and other suitable native vegetation on denuded areas where natural colonization or other replanting will not occur rapidly; use slash or chips to prevent erosion on such areas.
- Use surface mounds, depressions, logs, rocks, trees and stumps, slash and brush, the litter layer, and native herbaceous vegetation downslope of denuded areas to reduce sedimentation and erosion, as necessary to prevent erosion or slope destabilization.
- Install approved, biodegradable erosion-control measures and non-filament-based geotextiles (e.g., coir, jute) when:
  - Conducting substantial ground-disturbing work (e.g., use of heavy equipment, pulling large vegetation) within 100 feet and upslope of currently flowing or wet wetlands, streams, lakes, and riparian areas;
  - Causing soil disturbance on moderate to steep (10 percent slope and greater) slopes; and
  - Removing invasive plants from stream banks to prevent sediment movement into watercourses and to protect bank stability.
- Sediment-control devices, if installed, will be certified weed-free, as appropriate. Sediment control devices will be inspected daily during active work to ensure that they are repaired and working as needed to prevent sediment transport into the waterbodies.

For areas with less than 50 percent ground cover:

- Any of the above measures
- Stabilize with mulch or equivalent immediately after project activities, to the maximum extent practicable.
- If project activities could result in substantial sediment discharge from soil disturbance, as determined by the qualified personnel (e.g., RPF), organic

material from mastication or mulch will be incorporated onto at least 75 percent of the disturbed soil surface where the soil erosion hazard is moderate or high, and 50 percent of the disturbed soil surface where soil erosion hazard is low to help prevent erosion.
- Where slash mulch is used, it will be packed into the ground surface with heavy equipment so that it is sufficiently in contact with the soil surface.

Once work is completed, the areas will be inspected at least annually if accessible, until groundcover exceeds 70 percent or slopes have stabilized, as determined by a qualified professional. At that time, erosion-control and slope-stability devices may be removed.

GEO-3 Soil Saturation and Rain Event Measures[1,2,4]

The following measures will be implemented to prevent soil loss and erosion during rain events and following rain events:

- Shut down use of off-road heavy equipment, skidding, and truck traffic when soils become saturated (from rain event) and unable to support the machines. Saturated soil means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur.
- Off-road heavy equipment work will be suspended if the National Weather Service forecast is a “chance” (30 percent or more) of rain within the next 24 hours
- Ground disturbing work (e.g., use of heavy equipment, pulling large vegetation) will not occur during rain events (i.e., 0.5 inch of rain within a 48-hour or greater period≥ 1.5 inches in 24 hours) and may resume when precipitation stops and soils are no longer saturated. Indicators of saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning of wheels or tracks that produces a wet slurry, or (5) inadequate traction without blading wet soil or surfacing materials.
- For activities that involve ground disturbing work and have not been stabilized, inspect for evidence of erosion after the first rain event (i.e., 0.5 inch of rain within a 48-hour or greater period) as soon as is feasible after the event. Any area of erosion that will result in substantial sediment discharge will be remediated within 48 hours.
- For activities that involve ground disturbing work, inspect project areas for the proper implementation of erosion control, as necessary and determined by the qualified personnel (e.g., RPF), prior to the rainy season. If erosion control measures are not properly implemented, the measures will be remediated prior to the first rainfall event.

HAZ-1 Leak Prevention and Spill Cleanup[1,4]

The project proponent will, at a minimum, implement measures that address the following procedures related to the use of hazardous materials during work:

- Proper disposal or management of contaminated soils and materials (i.e., clean up materials)

- Daily inspection of vehicles and equipment for leaks and spill containment procedures
- Emergency response and reporting procedures to address hazardous material releases
- Emergency spill supplies and equipment will be available to respond in a timely manner if an incident should occur
- Response materials such as oil-absorbent material, tarps, and storage drums will be available in the plan area at all times during management activities and will be used as needed to contain and control any minor releases
- The absorbent material will be removed promptly and disposed of properly
- Use of secondary containment and spill rags when fueling
- Discourage “topping-off” fuel tanks
- Workers using fuels or other hazardous materials must be knowledgeable of the specific procedures necessary for hazardous materials cleanup and emergency response
- All diesel and gasoline powered equipment will be maintained per manufacturer's specification, and in compliance with all state and federal emission requirements

HAZ-2 Wildfire Risk Reduction[1,3,4]

The following measures will be implemented during activities that involve the use of equipment that can generate sparks or heat:

- Maintain fire suppression equipment (e.g., shovel, extinguisher) in work vehicles and ensure workers are trained in use
- Closely monitor for ignited vegetation from equipment and tool use
- Train workers to properly handle and store flammable materials to minimize potential ignition sources
- Prohibit smoking in vegetated areas
- Avoid use of spark- and/or heat-generating equipment during high fire danger days (e.g., Red Flag Days and Fire Weather Watch)
- Outfit off-road diesel vehicles and equipment with spark arrestors
- Avoid metal string or blade weed trimmers
- Maintain one fire extinguisher for each chainsaw

HAZ-3 Pile Burning[3]

The following measures will be implemented to reduce hazards associated with pile burning:

- Pile burning will only be allowed on days when fire is less likely to spread (e.g., wind speeds are less than 15 mph).
- Piles will only be constructed in areas where burning can be safely controlled, for example, on the flattest area possible. Bottoms of steep, vegetated hills will be avoided.
- Piles should be constructed with 10 feet of clearance around them.
- Piles will be set back from public roads and trails at a distance to minimize risk to the public or cordoned off from the public.
- All requirements of CAL FIRE, the local fire department, and/or the BAAQMD will be met, including any permit, notification, burn bans, and reporting requirements.

- Have fire suppression crews on-site during the fire season determined by CAL FIRE or the local fire department (typically mid-May to mid-November) during curtain and pile burns.
- Pile burning will adhere to BAAQMD criteria pollutant thresholds and Regulation 5 for open burning.

HAZ-4 Application of Herbicides[4]

Projects will comply with all herbicide application regulations and ecologically sound integrated pest management principles.

- Herbicide containers will be triple rinsed with clean water at an approved site, and rinsate will be disposed of by placing it in the batch tank for application.
- Herbicide drift to public areas or sensitive areas will be minimized through the following measures:
  - Application will cease when weather parameters exceed label specifications or when sustained winds at the site of application exceeds 7 miles per hour (whichever is more conservative).
  - No herbicide will be applied during precipitation events or if precipitation is forecast 24 hours before or after project activities.
  - Spray nozzles will be configured to produce the largest appropriate droplet size to minimize drift.
  - Low nozzle pressures will be utilized.
  - Spray nozzles will be kept within 24 inches of vegetation, if spraying.
- For herbicide applications occurring within or adjacent to public recreation areas, residential areas, schools, or any other public areas within 500 feet, signs will be posted at each end of herbicide application areas and any intersecting trails notifying the public of the use of herbicides at a minimum 1 day before and 1 day after herbicide use.

HAZ-5 Protect Vegetation and Special-Status Species from Herbicides[4]

The project proponent will implement their approved integrated pest management (IPM) procedures when utilizing herbicides, or the following measures if no IPM is in place that addresses herbicide use in sensitive areas:

- Locate herbicide mixing sites in areas devoid of vegetation and where there is no potential of a spill reaching non-target vegetation or a waterway.
- Use only herbicides labeled for use in aquatic environments when working in riparian habitats or other areas where there is a possibility the herbicide could come into direct contact with water. Only hand application of herbicides will be allowed in riparian habitats and only during low-flow periods or when seasonal streams are dry.

- No terrestrial or aquatic herbicides will be applied within Watercourse and Lake Protection Zones (WLPZs) of Class I[6] and II[7] watercourses, if feasible. If this is not feasible, hand application of herbicides labeled for use in aquatic environments may be used within the WLPZ.
- No herbicides will be applied within a 50-foot buffer of federal Endangered Species Act (ESA) or California ESA listed plant species or within 50 feet of dry vernal pools.
- For spray applications in and adjacent to habitats suitable for special-status species, use herbicides containing dye (registered for aquatic use by California Department of Pesticide Regulation, if warranted) to prevent overspray.

NOI-1 Minimization of Noise Disruption to Nearby Neighbors and Sensitive Receptors[4,8]

All projects will comply with applicable local noise ordinances. All powered equipment and power tools will be used and maintained according to manufacturer specifications. All diesel- and gasoline-powered treatment equipment will be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations.

Measures to minimize noise disruption to nearby neighbors and sensitive receptors will be implemented as needed. These measures may include but are not limited to:

- Using noise control technologies on equipment (e.g., mufflers, ducts, and acoustically attenuating shields)
- Locating stationary noise sources (e.g., pumps and generators) away from sensitive receptors
- Closing engine shrouds during equipment operations
- Shutting down equipment when not in use. Equipment will not be idled unnecessarily.
- Operating heavy equipment during daytime hours if such noise would be audible to receptors (e.g., residential land uses, schools, hospitals, places of worship)
- Locating project activities, equipment, and equipment staging areas away from nearby noise-sensitive land uses (e.g., residential land uses, schools, hospitals, places of worship), to the extent feasible

[6] A Class I watercourse includes any domestic supplies, including springs, on site and/or within 100 feet downstream of the operations area, and/or fish are always or seasonally present onsite, and includes habitat to sustain fish migration and spawning.

[7] A Class II watercourse has fish always or seasonally present offsite within 100 feet downstream, and or aquatic habitat for nonfish aquatic species. Class II watercourses excludes Class III waters that are tributaries to Class I waters.

[8] Adapted from San Francisco Public Utilities Commission (SFPUC), Standard Construction Measures, July 2015.

NSO-1 Northern Spotted Owl Nesting Season Avoidance[1]

Each project will be reviewed by a qualified biologist to determine if northern spotted owls have potential to occur near proposed project activities. Within areas where northern spotted owl have the potential to occur, work, including mowing with heavy equipment, the mechanical removal of vegetation, or prescribed burning, including pile and broadcast burning, will occur outside of the northern spotted owl nesting season to the extent feasible (February 1 to July 31).

If work must occur during the northern spotted owl nesting season, either NSO-2 or NSO-3 will apply.

NSO-2 Work During Northern Spotted Owl Nesting Season – Surveys[1]

Within an area where northern spotted owl has the potential to occur, when work will occur during the northern spotted owl nesting season (February 1 through July 31), and work is not considered low-impact by a qualified biologist the following measure will apply. Low impact type activities include, but are not limited to, goat grazing, hand pulling of weeds, hand trimming of trees and vegetation with non-mechanized equipment, chipping from existing roadways in residential areas, and use of mechanized equipment adjacent to roads or in residential areas that is a typical noise for the environment. In contrast, high-impact activities may include operation of heavy machinery in wildlands with lower baseline environmental noise, or work which produces noise disturbance for a longer duration than is typical in the environment.

The biologists will determine if a known breeding pair is found within 0.25 mile of the proposed activity (i.e., from existing surveys that season or historic data) and perform a nest check to confirm presence. If no survey data for the season has been completed for the areas, two surveys will be conducted by a qualified biologist (whose qualifications have been approved by the MWPA or lead public agency) for nesting northern spotted owls during the months of April and May preceding the commencement of these activities. At a minimum, the survey area will include all suitable nesting habitats within 0.25 mile of any planned activity sites, and then one of the two options listed below will be implemented. If access cannot be secured for surveys, then work should be delayed until after the nesting season, unless it can be shown that noise generation from the activities and the activities proposed would be below noise and visual disturbance levels for northern spotted owls (refer to USFWS Revised Transmittal of Guidance: Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California) at the nest site, if known.

- If it is conclusively determined that there are nesting northern spotted owls, planned activities that generate noise (e.g., mowing, heavy equipment usage, crews with hand tools that generate noise) in areas without regular human disturbances from human residency (e.g., leaf blowers, home construction and remodeling, roadways), that are within 0.25-mile of an identified active nest will not begin prior to September 1 unless the young have fledged, at which time work may begin no earlier than July 10. Prescribed burns may only occur within suitable northern spotted owl habitat (as determined by a qualified biologist) during the nesting season if protocol surveys have determined that northern spotted owl nesting is not occurring in the area of planned activity.
- If work must occur within 0.25 mile, and work has been determined to have the potential to impact an active northern spotted owl nest, CDFW and USFWS would be consulted to determine if take could occur and whether further permits are required.

NSO-3 Northern Spotted Owl Habitat Alteration[1]

For projects involving removal of large trees (10-inches DBH or greater) in potential northern spotted owl roosting, or nesting habitat (as identified during the desktop review) in areas without regular human disturbances from human residency, habitat alteration within core use areas (nesting and roosting habitat) will be planned in consultation with a qualified northern spotted owl biologist.

NSO-4 Retain Dusky-footed Woodrat Nests[1,5]

Dusky-footed woodrats are important prey for northern spotted owls. Wherever feasible, project activities will leave dusky-footed wood rat nests intact. If possible, maintain a 3-foot buffer of vegetation around dusky-footed woodrat middens.

NB-1 Nesting Bird Season Avoidance[1,4,5,9]

Whenever possible, schedule work outside of the bird nesting season, which is generally from February 1 through July 31st [10]. Not all species nest between the regulatory season, and active nests that are encountered year-round are protected.

NB-2 Nesting Bird Surveys[1,4,5]

If work that has the potential to impact nesting birds commences between February 1 and July 31 (during the nesting season), a qualified biologist (whose qualifications have been approved by the MWPA or lead public agency) will conduct a pre-activity survey for nesting birds.

Nesting bird surveys are recommended during the nesting season for work involving mowing with heavy equipment, other vegetation (including tree) removal or limbing and trimming activities, and prescribed (broadcast and pile) burning. Low-impact activities including goat grazing, hand-pulling weeds, and herbicide application do not generally require nesting bird surveys. Determination of need for surveys for low-impact activities should be evaluated on a case-by-case basis in consultation with a qualified biologist or RPF.

Nesting bird surveys will occur within no more than 7 days prior to work to ensure that no nests will be disturbed during vegetation management work. If work pauses for more than 7 days, a follow-up survey will be conducted prior to the restarting of work. Appropriate survey areas will be determined by the qualified biologist depending on the project footprint, type of activity proposed, and suitable habitat for nesting birds. Surveys will be conducted during periods of high bird activity (i.e., 1-3 hours after sunrise and 1-3 hours before sunset). If the qualified biologist determines that visibility is significantly obstructed due to on-site conditions (such as access issues, rain, fog, smoke, or sound disturbance [including high wind]), surveys will be deferred until conditions are suitable for nest detection.

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[9] Adapted from Marin County Parks (MCP), Bird Nesting Survey Training Manual, 2017.

[10] Note that the general nesting season between February 1 and July 31 is a guideline, and that birds may begin nesting beforehand, and complete nesting after these dates. Regardless, active nests are protected year-round. Avian nesting season may begin as early as January 1.

NB-3 Nesting Birds: Active Nest Avoidance[1,4,5,9]

If active nests (i.e., presence of eggs and/or chicks) are observed in areas that could be directly or indirectly disturbed (including noise disturbance), a temporary, species-appropriate no-disturbance buffer zone will be created around the nest sufficient to reasonably expect that breeding would not be disrupted. No work will occur inside the buffer zone.

The size of the buffer zone will be determined by the biologist, by taking into account factors including but not limited to the following:

- Noise and human disturbance levels at the site at the time of the survey and the noise and disturbance expected during the work;
- Distance and amount of vegetation or other screening between the site and the nest; and
- Sensitivity of individual nesting species and behaviors of the nesting birds, taking into account factors such as topography, visibility to source of disturbance, noise/vibration, nesting phase, and other case-by-case specifics.

Buffer sizes may be altered during the course of work at the recommendation of the biologist. Raptor nests are subject to additional protections, including during the “branching” phase, when fledglings begin to fly but do not fully leave the nest. Buffers will be maintained until young fledge or the nest becomes inactive, as determined by the qualified biologist.

If work must occur within the buffer, proceed to NB-4.

NB-4 Nesting Birds - Active Nest Monitoring[1,4,5,9]

If an avoidance buffer is not achievable, a qualified biologist may monitor the nest(s) during work activities within the recommended nest buffer to document that no take of the nest (nest failure) has occurred related to work activities. If it is determined that work activity is resulting in nest disturbance, work should cease immediately.

RB-1 Prework Survey[3,4]

If vegetation management activities would (1) occur in trees with potential for roosting bat species (e.g., trees with a diameter at breast height of 10 inches or greater), (2) would include removal trees where a bat could be roosting and (3) the work would commence between March 1 and July 31, during the bat maternity period, a pre-activity survey will be conducted for roosting bats within 2 weeks prior to work to ensure that no maternity roosting bats will be disturbed during work. This survey can be conducted concurrent with other surveys for other sensitive species. Potentially suitable bat roosting habitat within the work footprint that have been determined to be unoccupied by roosting bats, or that are located outside the avoidance buffer for active roosting sites may be removed. Roosting initiated during work is presumed to be unaffected, and no buffer would be necessary.

RB-2 Avoidance of Maternity Roosts and Day Roosts[3]

If active maternity roosts or day roosts are found within the project site, or in areas subject to disturbance from work activities, avoidance buffers will be implemented. The buffer size will be determined in consultation with the qualified biologist or RPF.

RB-3 Bat Roosting Tree Removal – Seasonal Restrictions[3]

If it is determined that a colonial maternity roost is potentially present, the roost will be avoided and will not be removed during the breeding season (March 1 through July 31) unless removal is necessary to address an imminent safety hazard.

Operation of mechanical equipment producing high noise levels (e.g., chainsaws, heavy equipment) in proximity to buildings/structures supporting or potentially supporting a colonial bat roost will be restricted to periods of seasonal bat activity (as defined above), when possible.

RB-4 Bat Roosting Tree Removal – Emergency Removals[3]

Potential non-colonial roosts that must be removed in order to address a safety hazard, can be removed after consultation with a biologist. Removal will occur on warm days in late morning to afternoon when any bats present are likely to be warm and able to fly. Appropriate methods will be used to minimize the potential of harm to bats during tree removal. Such methods may include using a two-step tree removal process. This method is conducted over two consecutive days, and works by creating noise and vibration by cutting non-habitat branches and limbs from habitat trees using chainsaws only (no excavators or other heavy machinery) on Day 1. The noise and vibration disturbance, together with the visible alteration of the tree, is very effective in causing bats that emerge nightly to feed, to not return to the roost that night. The remainder of the tree is removed on Day 2.

SH-1 Riparian Resources – Project Design[4,5]

In riparian areas, treatments will be limited to removal of uncharacteristic fuel loads (e.g., removing dead or dying vegetation), trimming/limbing of woody species as necessary to reduce ladder fuels, and select thinning of vegetation to restore densities that are representative of healthy stands of the riparian vegetation types that are characteristic of the region. Allowable activities include hand removal (or mechanized removal where topography allows) of dead or dying riparian trees and shrubs, invasive plant removal, selective thinning, and removal of encroaching upland species. Mature, healthy trees will not be removed from a riparian corridor. Any activities conducted within a riparian corridor will be conducted so as to avoid alteration to a bed, channel, or bank of a waterway and all debris, including sawdust, chips, or other vegetative material, will be prevented from entering the bed, channel, or bank of a waterway, unless a permit from the California Department of Fish and Game under Section 1600 is obtained.

SH-3 Minimization of Pile Burning Disturbance[11,12]

Pile burning will not be performed in sensitive habitats, such as serpentine-associated communities, wetlands, or riparian areas. If piles are burned on a different day than piled, the piles should be moved prior to burning to ensure wildlife is not present, such as by re-piling by hand, or a qualified biologist will inspect the pile prior to burning to ensure wildlife are not

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[11] Adapted from Marin County Open Space District (MCOSD). (2015, April). Vegetation and Biodiversity Management Plan. *Best Management Practices.*

[12] Adapted from California Department of Fish and Wildlife (CDFW). (2011). California Endangered Species Act Incidental Take Permit No. 2081-2011-046-03. *Wildfire Hazard Reduction and Resource Management Plan*. East Bay Regional Parks District

present. If moving or inspection of the piles is not feasible, the pile will be lit from one side and allowed to burn slowly to the other side, in order to allow any wildlife to relocate, rather than lighting the entire pile at once.

TR-1 Emergency Access to Project Areas[1,2]

The following measures will be implemented to maintain emergency access:

- At least one week prior to temporary lane or full closure of a public road for vegetation management-related work, the appropriate emergency response agency/agencies will be contacted with jurisdiction to ensure that each agency is notified of the closure and any temporary detours in advance and obtain all required encroachment permits
- In the event of any emergency, roads blocked or obstructed for maintenance activities will be cleared to allow the vehicles to pass.
- During temporary lane or road closures on public roads, flaggers equipped with two-way radios will be utilized where needed to control traffic. During an emergency, flaggers will radio to the crew to cease operations and reopen the public road to emergency vehicles.
- All authorized vehicles at the treatment site will be parked to not block roads when no operator is present to move the vehicle.

TR-2 Traffic Control Measures[3]

Traffic control measures will be implemented to maintain traffic and pedestrian circulation on streets affected by project activities. The following measures may include:

- All traffic control devices will conform to the latest edition of the MUTCD, and as amended by the latest edition of the MUTCD California supplement.
- Any work that disturbs normal traffic signal operations and ensure proper temporary traffic control (lane shifts, lane closures, detours etc.) will be coordinated with the agency having jurisdiction, at least 72 hours prior to commencing worker.
- Flaggers and/or warning signage of work ahead.
- A minimum of twelve (12) foot travel lanes on public roads must be maintained unless otherwise approved.
- Maintaining access to driveways and private roads at all times unless other arrangements have been made.
- Traffic control devices will be removed from view or covered when not in use.
- Sidewalks for pedestrians will remain open if safe for pedestrians. Alternate routes and signing will be provided if pedestrian routes are to be closed.
- Scheduling truck trips during non-peak hours to the extent feasible.

Attachment A: FMP EIS ROD

U. S. DEPARTMENT OF THE INTERIOR

National Park Service

Final Environmental Impact Statement / Fire Management Plan

Golden Gate National Recreation Area

Marin, San Francisco and San Mateo Counties, California

RECORD OF DECISION

The Department of Interior, National Park Service has prepared this Record of Decision on the *Fire Management Plan/Final Environmental Impact Statement* (FMP FEIS) for Golden Gate National Recreation Area (GGNRA), Muir Woods National Monument, and Fort Point National Historic Site (collectively known as "the park" for purposes of this document). This document includes a description of the background for the project, a statement of the decision made, synopses of other alternatives considered, a description of the environmentally preferable alternative, the basis for the decision, findings on impairment of park resources and values, an appendix detailing measures to minimize environmental harm, and an overview of public involvement and agency consultation in the decision-making process.

Background of the Project

The legislated boundary of GGNRA consists of 74,816 acres in San Mateo, San Francisco, and Marin counties in California within which 15,700 acres are directly managed by GGNRA and comprise the planning area for the FMP FEIS. The planning area does not include the northern lands of GGNRA (approximately 18,000 acres) which are managed by Point Reyes National Seashore, or lands within the jurisdictional boundary of GGNRA that are not directly managed by the NPS.

The National Park Service (NPS) managed lands of GGNRA contain more than 1.7 million square feet of building space in both historic and non-historic structures. The park has roughly 59 miles of Pacific coast and San Francisco Bay shoreline and an estimated 40-mile long interface with developed lands, primarily residential communities. The parklands, part of the Golden Gate Biosphere Reserve, support 19 separate ecosystems and 12 distinct plant communities which together provide habitat for 25 federally-listed endangered or threatened plant and animal species and 52 additional species of concern. Within GGNRA are five National Historic Landmark Districts, 667 historic structures, and more than 350 known archeological sites. Each year, more than 16 million visitors come to the park from all over the world.

Fire management is an essential component of NPS operations and the GGNRA has been operating under a 1993 Fire Management Plan (FMP). Concerns about fire management in GGNRA are due to the fire hazards created from fuel buildup within parklands as a result of fire suppression efforts over the past century, the extension of residential development along much of the park boundary, and the spread of more flammable, non-native invasive plants within park lands, particularly along the boundary.

This revision of the GGNRA FMP was initiated in August 2003 in response to recent changes to NPS and federal fire management policies and the need to update the existing plan. The 1993 FMP focused primarily on fire ecology and natural resource management issues. The Federal Wildland Fire Management Policy (1995, 2000) reflects lessons learned from a catastrophic fire season in 2000. Updated policies stress the need for land managers to reintroduce the role of fire into fire adaptive natural

systems, to use fire management principals to protect sensitive park resources, and to reduce fire risk along the wildland urban interface through the implementation of cooperative fuel reduction strategies with neighboring communities and agencies.

The purpose of this FMP FEIS is to provide a framework for fire management activities in a manner that helps achieve resource management objectives consistent with the park's cultural and natural resources, and land management plans; reduces risks to developed facilities and adjacent communities; and addresses safety considerations for park visitors, employees, and resources. The specific purposes of this FMP FEIS are:

- To prepare a new FMP that is consistent with Federal Wildland Fire Management Policy and conforms to agency guidelines for fire management plans and programs; and
- To help achieve resource management objectives consistent with the park's cultural, natural resource, and land management plans and be responsive to safety considerations for park visitors, employees, and resources.

A set of goals were developed by NPS staff during this FMP EIS planning process. The goals were derived from federal wildland fire management policy, NPS management policies, the 1980 GGNRA General Management Plan (GMP), and comments and concerns expressed by the public and agencies during the scoping period. Management objectives, detailed in section 1.4 Purpose and Need for Action of the FMP FEIS, were developed for each goal and describe what must be accomplished in order for the fire management program to be considered successful. The goals were then used in the formulation of the alternatives analyzed in the FEIS.

In addition to the FMP goals, the planning area's topography, hydrology, the results of fire hazard modeling, analysis of current development patterns, and the locations and types of significant park resources served to inform NPS staff as they developed Fire Management Units (FMU's) for the FMP. The FMU's were then used as a means to evaluate and analyze management alternatives. An FMU is any land management area that can be defined by management goals and constraints, topographic features, access corridors, values at risk or values to be protected, political boundaries, fuel types, or major fire regime groups that set it apart from management characteristics of an adjacent unit.

The 1993 FMP FMU's were based upon vegetation communities and are used in the current FMP FEIS in *Alternative A – 1993 FMP, No Action*. The FMU's used in the action alternatives (Alternative B and Alternative C) were based upon different inputs to conform to current federal wildland fire management policy. The new FMU's consist of the Wildland Urban Interface FMU for areas of the park adjacent to relatively dense suburban neighborhoods; the Park Interior FMU comprised of open, largely undisturbed lands that are relatively remote from developed areas whether on the park perimeter or interior; and the Muir Woods FMU for Muir Woods National Monument, reflecting the important natural resources combined with high visitor use in this special park unit.

Three alternatives are analyzed in the FMP FEIS. The alternatives meet the park's goals and objectives to an acceptably large degree, and are within constraints imposed by regulations and policies, by risks associated with the wildland urban interface, and by technical and funding limitations. The three alternatives involve different combinations of prescribed burning and mechanical treatments for achieving fire risk reduction and resource protection and rehabilitation objectives. In each alternative, an upper limit

has been set on the number of acres that would be treated in any one year. Then, the alternatives are differentiated by the annual maximum acreages allowed for each treatment type (mechanical treatment or prescribed burning) within the FMU's in the three counties. The variations in annual, permissible acreages are one means of distinguishing differences among the alternatives. Potential impacts and appropriate mitigation measures are assessed for each of the alternatives.

Decision (Selected Action)

The selected action, *Alternative C - Hazard Reduction and Resource Enhancement through Multiple Treatments*, is the preferred alternative from the FMP FEIS. Alternative C will allow for the greatest number of acres to be treated annually to achieve fire management and resource objectives through the use of a broad range of fire management strategies. As documented in the FEIS, Alternative C is also deemed to be the "Environmentally Preferred" Alternative.

Given favorable weather conditions and adequate project funding, Alternative C would permit up to 595 acres be treated per year using mechanical treatments and prescribed fire. If project funding is not optimum, the park would seek other funding from other divisions such as maintenance and natural resources for projects that would result in benefit meeting the objectives of those divisions as well as fire management. Approved projects that lack funding would roll over to the next fiscal year. Low funding for prescribed burning projects can be supplemented in Marin County by sharing staff and equipment resources with other fire and land management agencies. The acreage limit for annual treatments of 275 acres by mechanical treatment and 320 acres of prescribed burning were developed as reasonable targets that could be achieved annually rather than absolutes that must be achieved. The plan acknowledges that the level of funding available for fire management projects has varied from year to year; in addition, heavy fogs in late summer/early fall can shift the park's focus to achieving the mechanical treatment acreages and away from prescribed burning.

Under Alternative C, mechanical treatment and prescribed burning will be used to reduce fuel loading near developed areas and achieve resource enhancement goals. Mechanical treatments, complemented by prescribed fire, will be employed to assist with the restoration and maintenance of the park's natural and cultural resources. An expanded research program will examine the role of fire and mechanical treatments in enhancing natural resources and the specific impacts of fire on these resources. Research will also be used to adaptively guide the fire management program and help maximize the benefits to park resources. Natural and cultural resource goals and objectives will be integrated into the design and implementation of fuel reduction projects.

Several actions that are part of the current GGNRA fire management program will continue under Alternative C. Some of these current activities are considered "best management practices" and are used by many land management agencies and fire districts. These actions include roadside fuel reduction; maintenance of defensible space around structures; the provision of fire education materials and public outreach; the continued implementation of successful fire management programs such as the Wildland Urban Interface Initiative coordinated with neighboring fire departments and homeowners' associations; fire effects monitoring; suppression of all wildland fires; centralizing the park's fire cache in a new structure; fire management actions for GGNRA lands within the City and County of San Francisco; and the fire management approach for Muir Woods National Monument. The NPS has been implementing the 1993 FMP strategy for Muir Woods National Monument for over a decade and would continue to do

so. The strategy uses prescribed fire and mechanical fuel treatments to reduce invasive species and fuel loading, and to restore the role of fire in the old growth coast redwood forest.

Based on the FMP, an implementation plan will be developed by the park's fire and resource management staff. The implementation plan will outline fire management actions that would occur over a 5-year planning period. This plan would be updated and reviewed annually for consistency with the FMP.

Other Alternatives Considered

In addition to the Selected Action, the FMP FEIS analyzes two alternatives for managing fire in the park, including a No Action Alternative. Similar to Alternative C (Selected Action), these alternatives are based upon park values, effective fire management strategies, NPS policy, and applicable law. Two other alternatives which focused on fuel reduction rather than a combination of resource and fuel reduction benefits were considered but dismissed.

Alternative A (No Action) – 1993 FMP, No Action

This alternative would be an update to the park's 1993 FMP only to reflect changes to the park's boundary (e.g., addition of new lands since 1993) and current national fire management policies. The focus of the 1993 FMP program is on ecosystem management through the application of prescribed fire to perpetuate fire-adaptive natural systems. This alternative would rely on the continued implementation of the 1993 FMP and recent emphasis on mechanical fuel reduction along with prescribed fire.

The six FMU's for Alternative A, derived from the 1993 FMP, are based upon vegetation communities. As shown in Table 1 below, a total of 210 acres could be treated by mechanical means and prescribed fire each year under this alternative. Nearly all of the projects would be in Marin County and account for 175 of the total 210 acres. An annual maximum of 110 acres for prescribed burning would be allowed; this total reflects what had been accomplished while the 1993 FMP was in full implementation in the 1990's. In practice, many fire management actions approved in recent years for GGNRA have been mechanical fuel reduction projects (e.g., mowing, cutting to remove nonnative shrubs and trees, and selective thinning in forested stands) as a result of the establishment of the Wildland Urban Interface Initiative. A combination of staff shortages, the requirement to develop a new FMP, and a year-long moratorium on prescribed burning has resulted in limited prescribed burning over the past five years.

Current research projects would continue and would focus on the role of fire to enhance natural resources and the effects of fire on key natural resources to determine the effectiveness of various fuel treatments. Prescribed burning would focus on resource management and research objectives with half of the annual acreage accounted for in projects within Muir Woods National Monument. Mechanical fuel reduction projects would focus on the park interface area in Marin County, consistent with projects funded in the past five years.

Alternative B – Hazard Reduction and Restricted Fire Use for Research and Resource Enhancement.

Under Alternative B, fire management actions would emphasize the use of mechanical methods to reduce fire hazards and fuel loads in areas with the highest risks. A total of 350 acres could be treated each year under this alternative – a maximum of 230 acres by mechanical means and a maximum of 120 acres through prescribed fire. Compared to Alternative A, Alternative B represents an increase in the number of acres mechanically treated each year. There would be a focus on the reduction of high fuel loads in the

Wildland Urban Interface FMU. Alternative B would permit the treatment of 50% fewer acres annually by mechanical treatment than the Selected Alternative. Limited use of prescribed fire could occur for research purposes within the park interior. Under Alternative B, prescribed burning is restricted to the Park Interior FMU in Marin County and Muir Woods FMU. No prescribed burning would occur in the San Mateo parklands. Research projects in Marin and San Mateo counties would examine the role of fire to enhance natural resources and the effects of fire on key natural resources to determine the effectiveness of various fuel treatments.

Table 1: Summary of Alternatives by Fire Management Unit (FMU) and Treatment Type

Treatment Type	County	Alternative A		Alternative B				Alternative C			
		All Fmu's[1]	Total	WUI FMU	Park Interior FMU	Muir Woods FMU	Total	WUI FMU	Park Interior FMU	Muir Woods FMU	Total
Mechanical Treatment (acres/yr)	Marin	75	100	130	45	5	230	130	90	5	275
	San Francisco	5		10	0	0		10	0	0	
	San Mateo	20		30	10	0		30	10	0	
	Total Acres	100		170	55	5		170	100	5	
Prescribed Burning (acres/yr)	Marin	100[2]	110	0	70	50	120	50	185	50	320
	San Francisco	<1		<1	NA	NA		<1	NA	NA	
	San Mateo	10		0	0	0		5	30	0	
	Total Acres	110		0	70	50		55	215	50	

Source: GGNRA Fire Management Office Data 2004.

Notes:

[1] Since 1993 FMP did not give number of acres per year for treatments by FMU, and since FMU's are by vegetation type and dispersed throughout park, total acreage is given by county only based upon projects cited in 1993 FMP and current practice.

[2] Includes 50 acres of prescribed burning in Muir Woods National Monument annually.

WUI = Wildland Urban Interface

NA = not applicable

Alternatives Considered for Inclusion in the EIS But Rejected

Two additional alternatives were considered for the GGNRA FMP but rejected as not meeting the purpose and need of the FMP. Developed in response to a suggestion during scoping, of the two alternatives proposed, one included no use of fire as a management tool and the second permitted fire to be used only in pile burning. Both alternatives focused on mechanical treatments to reduce fuels and fire hazard. The strategy for fire management at Muir Woods, which involves the reintroduction of fire into the ecosystem, could not be implemented under these alternatives. The first alternative, which did not permit pile burning, removed a very sustainable solution for disposing of cut vegetation. Often only part, and sometimes none, of the vegetation cut at a site can be chipped and broadcast in place; under this alternative all debris which could be chipped would have to be trucked to a legal disposal site. Chipping and broadcasting debris at a project site may be prohibited because it could alter favorable conditions for sensitive plant or animal species, involve the spread of invasive plant seeds or viable parts, suppress the native seed bank, or increase fire risk when if deposited overly thick. Pile burning is an important solution for vegetation harboring SOD, pitch pine canker, or other infectious diseases or pests that should neither be left onsite nor moved to another location.

After consideration, the alternatives were rejected as so many important FMP goals could not be achieved without some level of prescribed burning. Without the option of prescribed burning, there would be less opportunity to contribute to the enhancement and rehabilitation of cultural and natural resources through the use of prescribed burning. The park fire ecology and monitoring staff would not be able to build upon research and data derived first hand experience in the actual environment of GGNRA. The park fire staff would not expand their experience by planning and executing prescribed burns and the preferred strategy for reducing the potential for a high intensity wildland fire at Muir Woods could not be implemented being based on the reintroduction of fire into the Muir Woods ecosystem.

Environmentally Preferred Alternative

The analysis in the Final EIS determined that Alternative C is the environmentally preferred alternative. As described in the Final EIS, NPS and Section 101 NEPA criteria were used to make this determination. A summary of this analysis is as follows:

Alternative C will best achieve the purposes and goals of the plan by allowing for the use of a variety of management tools in order to achieve resource goals in balance with protection of visitors, life, and property. In comparison to Alternatives A and B, Alternative C's fire management treatment options provide the park with the flexibility to achieve, in a timely manner, a reduction in fire hazards that aid in the protection of human health, life, and property while also maximizing opportunities for restoring and maintaining ecological integrity, and protecting and enhancing the park's natural and cultural resources. Under Alternative C, the park's expedited implementation of fuel reduction projects in the urban interface areas would afford the greatest protection for park neighbors as well as the most sustainable approach to fire management. Alternative C presents the greatest potential for the control of stands of non-native evergreen forests within all of the FMU's which, once controlled, will require limited maintenance to discourage resprouting. With active restoration efforts from park staff and volunteer stewards, the areas that support stands of non-native evergreens should convert to native vegetation and require little maintenance in the long-term to maintain low fuel loading.

Alternatives A and B conform to FMP goals but would accrue benefits at much lower rates than Alternative C. Alternative A would achieve only one third the number of acreage for both prescribed burning and mechanical treatment than Alternative C. Alternative A, which continues the current resource-based FMP, would have a natural resource focus park-wide split into FMUs defined by vegetation type. Alternative A is not as closely allied to the life safety goal that is primary to current federal wildland fire policy. With the exception of specific WUI projects funding by the National Fire Plan, all project planning would continue to be natural resource based. Alternative B permits mechanical treatment at nearly the same level as Alternative C and would be nearly as effective in reducing excessive fuel loading as Alternative C. However, the amount of acreage of prescribed burning permitted annually is a third of that allowed in Alternative C and then only within the Interior FMU. No prescribed burning would occur in San Mateo County and no burns would be within the WUI FMU which often has the larger concentrations of escaped, invasive, non-native plants. Alternative B and C would permit similar annual achievements for mechanical treatment projects and both allow the greatest range of techniques to be used to treat cut vegetation based on environmental conditions. However, the higher annual acreage limits in Alternative C (at least 45 acres more annually of mechanical treatment and an additional 200 acres more of prescribed burning), with the ability to use prescribed burning throughout the park where warranted, results in a more proactive program that has the greatest potential to effectively reduce high fuel loading that currently threatens natural and built resources and public safety on both sides of the wildland urban interface.

Basis for Decision

After careful consideration of the alternatives presented, their environmental impacts, planning goals, and public comments received throughout the planning process, including comments on the Draft Fire Management Plan/Environmental Impact Statement, Alternative C has been selected for implementation. This alternative best accomplishes NPS and federal fire management policies, the legislated purpose of GGNRA, and the statutory mission of the NPS to provide long-term protection of park resources. The selected action best accomplishes the stated purposes of the Fire Management Plan as described in section 1.4, Purpose and Need for Action of the FMP FEIS. Alternative C offers the best combination of benefits with a high level of protection of life and property, and greater long- and short-term natural and cultural resource benefits than either Alternatives A or B.

A set of goals, developed and used in this planning process, were derived from guidance of the NPS Management Policies 2001 (NPS 2000) and NPS Director's Order and Resource Handbook 18, Wildland Fire Management (NPS 1999), in addition to federal policy and scoping input. The goals and subsequent management objectives describe what must be accomplished in order for the fire management program to be successful and were used to formulate the alternatives analyzed in this FMP FEIS. Of these goals, the first four are the criteria that were predominantly used to select Alternative C for implementation. Alternative C is the alternative which most successfully fulfills these goals, though each of the alternatives achieves the goals to a varying degree.

1. *Ensure that firefighter and public safety is the highest priority for all fire management activities.*

This alternative would permit the broadest use of fire management strategies throughout the park (mechanical treatment, pile burns, and prescribed burning) to reduce fuel loading near developed areas

and resources. Alternative C permits a larger number of acres to be treated annually than the other alternatives considered and it will thus accelerate the reduction of fuels in areas that present wildland fire hazards to adjacent communities and to sensitive park resources. Under Alternative C, a greater amount of fuel reduction (total 595 acres) could be achieved by both mechanical treatment and prescribed burning in the planning area than either under Alternative A (total 210 acres) or Alternative B (total 350 acres).

Under Alternative C, a maximum of 320 acres of prescribed burns and 275 acres of mechanical treatments could occur annually. This acreage cap grants the park the flexibility to take advantage of years with favorable weather conditions and funding availability. Though all of the alternatives depend on a range of variables for success, risks to firefighters and the public would be reduced at a more rapid rate under Alternative C.

The flexibility in treatment options provided under Alternative C, particularly in the Park Interior FMU, will allow the park to link together areas treated by prescribed burning or mowing with other areas of naturally-occurring light fuels. These linked zones of reduced fuels will then serve to slow the rate of fire spread in the event of a wildland fire, resulting in additional time for evacuation and response, and will provide relatively safe areas from which to stage firefighting efforts.

2. Reduce wildland fire risk to private and public property.

Full implementation of this alternative would allow for the greatest number of acres to be treated annually to achieve fire management objectives. Compared to Alternative A, Alternative C permits nearly three times as much mechanical fuel reduction and prescribed burning each year. The higher amount of acreage allowed to be treated annually produces the most accelerated progress towards reducing fuels in critical areas around the park; almost 1,375 acres could be mechanically treated over a five year implementation plan based on the annual allowable acreages. The greater acreage and full range of fuel management techniques permitted in the WUI FMU under Alternative C provides more opportunities to plan and annually implement joint projects with other agencies to strategically reduce fuels across jurisdictional boundaries. Similar to the other alternatives, the objective of fuel reduction projects under Alternative C would be to establish areas of reduced fuels to slow the rate of fire spread and facilitate fire suppression. However, given the flexibility in management tactics and the number of acres that could be treated annually, more could be accomplished in a shorter amount of time to reduce fire risk to private and public property under Alternative C.

3. Protect natural resources from adverse effects of fire and fire management activities, and use fire management wherever appropriate to sustain and restore natural resources.

Alternative C is the least constrained alternative in terms of the types of treatments that can be applied in individual areas. Treatments under Alternative C would pursue the enhancement of natural resources (e.g., increasing abundance or distribution of habitat for threatened and endangered species; reducing infestations of nonnative plants; increasing native plant cover; managing the rate of vegetation conversion, etc.) in addition to other management goals. The focus for prescribed burns under Alternative C would be in areas where NPS ecologists believe ecosystem health would be enhanced by burning and in areas where fuel accumulations create fire hazards. To the extent possible, prescribed burns would be conducted to approximate natural fire intensity and fire intervals. The intent would be to allow the process of fire to act on the landscape as it has for thousands of years, to the greatest extent possible, while

ensuring human safety and protecting property. Prescribed fire would be used to reduce infestations of highly nonnative plant species, restore native habitat, and rehabilitate cultural landscape settings. Only Alternative C would permit prescribed burning to be used in conjunction with mechanical treatments in the Wildland Urban Interface FMU, thus providing a range of strategies to effectively control infestations of invasive, non-native plants. In addition, only Alternative C permits mechanical treatment in combination with prescribed burning to be used in the Park Interior FMU's of both Marin and San Mateo counties. As such, Alternative C will provide more opportunities for vegetation management projects which focus on native plant community rehabilitation and the control of isolated, invasive plant populations in areas where fuel reduction may be a low priority.

4. *Preserve historic structures, landscapes, and archeological resources from adverse effects of fire and fire management activities, and use fire management wherever appropriate to rehabilitate or restore these cultural resources.*

Alternative C proposes use of a broad range of fire management strategies throughout the park – mechanical treatment, pile burning, and prescribed burning – as a means to reduce fuel loading near developed areas and achieve resource enhancement goals. Projects would focus on the protection and/or enhancement of cultural resource elements and values (e.g., burning would be used to reduce vegetation in areas that are identified as important historic viewscapes). Fire management activities, especially carefully applied prescribed fire and mechanical fuel reduction treatments, will be used to stabilize, preserve, maintain, and restore cultural resources. For example, mechanical thinning can effectively remove hazardous fuels from cultural resources and their vicinity, as well as restore, enhance, or maintain ethnographic resources and cultural landscapes in cases where the risk of direct effect from the application of fire is too high. Fire management activities will help to maintain and protect historic buildings by reducing fuels around these structures, both through prescribed burns and mechanical treatment. Historic field patterns may be restored in pastoral ranching landscapes where former grassland is being succeeded by scrub. In addition, the removal of dense ground cover may lead to the revelation of previously unknown archeological sites. Since this alternative allows for the greatest number of acres to be treated on an annual basis to achieve fire management objectives, it will therefore afford the greatest level of protection and enhancement of cultural resources.

Findings on Impairment of Park Resources and Values

The NPS has determined that implementation of Alternative C (Selected Action) will not constitute impairment to park resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the FEIS, the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in NPS Management Policy. While the plan has some negative impacts, in all cases these adverse impacts are the result of actions to preserve and restore park resources and values. Overall, the Selected Action results in major benefits to park resources and values and it does not result in their impairment.

In determining whether impairment may occur, park managers consider the duration, severity, and magnitude of the impact; the resources and values affected; and direct, indirect, and cumulative effects of the action. According to NPS policy, "An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is: necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; key to the natural or cultural integrity

of the park or to opportunities for enjoyment of the park; or identified as a goal in the park's general management plan or other relevant NPS planning documents" (NPS Management Policies, 2001).

The non-impairment policy does not prohibit impacts to park resources and values. The NPS has the discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of the park, so long as the impacts do not constitute impairment. Moreover, an impact is less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values.

The actions comprising Alternative C will achieve the goals of the Fire Management Plan in a comprehensive, integrated manner that reduces fire-related risks while also allowing fire to be used to achieve resource management objectives. The potential for high-intensity catastrophic fire that would put high-value resources at risk would be greatly reduced under the Selected Alternative. The combined use of mechanical treatment and prescribed burning throughout the park would allow NPS to reduce fuel loading and also achieve resource enhancement goals in a more timely and efficient manner than the other alternatives. Under Alternative C, the FMP goals would be achieved in a productive, effective, and sustainable manner through a broad scope of treatments and treatment areas. Strategic areas of high fuel loading on the park's urban interface would be treated and maintained over a shorter period of time than under Alternatives A and B. Likewise, areas of nonnative plants would be treated earlier in the implementation of Alternative C and would therefore be treated before populations of nonnative species could expand to affect larger areas.

In conclusion, the NPS has determined that the implementation of Alternative C will not result in impairment of resources and values in GGNRA. This conclusion is documented in the FMP FEIS.

Measures to Minimize Environmental Harm

The NPS has investigated all practical means to avoid or minimize environmental impacts that could result from implementation of the selected action. The measures have been incorporated into Alternative C and are presented in detail in the FMP FEIS. A set of mitigation measures will be applied consistently to actions to implement this plan through the park's internal compliance processes. (See Attachment 1 – Mitigation Measures). Fire effects monitoring by the fire management staff and the GGNRA cultural and natural resource management programs will be implemented to detect deleterious results. The results from this program will guide and assure compliance monitoring, biological and cultural resource protection, noxious weed control, visitor safety and fire education, endangered, threatened and special status species protection, and other mitigation. In addition, the NPS will prepare appropriate compliance reviews under the NEPA, the National Historic Preservation Act, and other relevant legislation for future actions not covered by this EIS.

Public and Interagency Involvement

Scoping for EIS

Public scoping for the FMP EIS was formally initiated on August 8, 2003, with publication in the Federal Register of the Notice of Intent to Prepare an Environmental Impact Statement for the GGNRA FMP. In addition to the Federal Register notice, the scoping period was publicized through a mailing to the public that included background information on the FMP and a notice of scoping workshops. Scoping

comments were solicited from August 8, 2003, to December 5, 2003. Three open house meetings were held for the scoping of the GGNRA FMP. These meetings featured displays and offered attendees the opportunity to discuss the planning process with staff. In addition, internal NPS scoping sessions were conducted to identify staff issues and concerns.

Among the major issues raised during the scoping meetings were the need for monitoring fire management activities and the use of wildland fire and pesticides as fire management tools. In addition, the development of an education component for fire hazard reduction in adjacent communities was mentioned. Other concerns raised at the meetings included ongoing changes in land use as they relate to fire; the potential for changes in wind patterns and wind strength due to tree removal; public access limitations; use of native plant species to restore habitat; potential changes to visitor experience and aesthetics; increased fire risk and life safety; and effects on cultural resources, vegetation, wildlife, hydrology, water quality, soils, and air quality.

Review of EIS

A Notice of Availability for the Draft EIS (FMP DEIS) was published by the NPS in the Federal Register on March 21, 2005. The NPS also provided the notice of availability of the FMP DEIS through a direct mailing and posting on the park's web site. The FMP DEIS was made available for review at park headquarters, park visitor centers, local and regional libraries, and on the park's website. The EPA's Federal Register March 18 notice of filing initiated a 60-day public comment period ending on May 17, 2005 which was extended to May 27, 2005 to ensure adequate review time. The NPS conducted two public presentations and workshops on the FMP DEIS. The first workshop was held in San Mateo County as part of a regularly scheduled Pacifica City Council meeting on April 11, 2005. The second workshop was on April 19, 2005 in Marin County at the San Francisco Bay Model in Sausalito and was part of the regularly-scheduled, GGNRA bi-monthly public meeting. The public was encouraged to submit comments on the DEIS via email, fax, or regular mail.

Twelve comment letters were received (see Appendix H of the FEIS). Agencies commenting were the US Environmental Protection Agency, the State Clearinghouse, the State Department of Forestry and Fire Protection, the Marin County Community Development Agency, the San Mateo County Department Parks and Recreation, the Land and the Resources Division of the San Francisco PUC. Two members of the Pacifica City Council submitted comments as well as 3 members of the public. The EPA provided comments as required in their role of statutory administrator of NEPA, the Council on Environmental Quality implementing regulations and the Clean Air Act.

All comment letters are reprinted in Appendix H to the FMP FEIS and each letter is followed by the NPS response to the letter's comments. The major issues raised during the public comment period included: smoke management, clarification of the text on conformance with air quality regulations and the State Implementation Plan, herbicide use, protection of riparian and wetland areas, range of alternatives considered, effects on Monarch butterfly habitat, and the need and benefits from interagency cooperation. On February 10, 2006 the EPA published their notice that the FEIS is "complete and fully adequate" in the Federal Register.

The NPS's Notice of Availability for the FMP FEIS was published in the Federal Register on December *28*, 2005. Following the EPA's notice of filing published in the FR on December 23, 2005 the waiting period for preparation of the Record of Decision ended on January 23, 2006. The FMP FEIS was posted on the NPS park planning website and a postcard notification of its availability was mailed to 1,400 interested parties, including agencies and organizations which had requested information on the FMP FEIS or were on the park's planning office mailing list. Forty-seven individuals, organizations, and agencies that had received a copy of the FMP DEIS in either printed or CD format or had since requested a copy were sent the FMP FEIS in the format requested. The FMP FEIS was distributed to the GGNRA Visitor Centers and twenty-four libraries in Marin, San Francisco, San Mateo and Alameda counties.

Following distribution of the FEIS, the park received several requests from the public and agencies for copies of the document, and a private citizen request for additional information on the use of herbicides and fire retardant chemicals in the Muir Beach and Redwood Creek vicinity. The park responded that the park's preference is to use no retardants for suppression wherever possible and particularly in the vicinity of Redwood Creek, which provides habitat for listed salmonids. The Marin County Fire Department, as a CDF contract agency, has agreed to consult with the NPS before using retardants in the Redwood Creek drainage. It is mutually agreed that the protection of life and safety is the number one priority in any fire suppression effort and the use of retardants may be necessary where these threats are present. No herbicides have been used at the Golden Gate Dairy in conjunction with eucalyptus removal nor is any planned for this area or for work along Muir Woods Road. In conformance with the Endangered Species Act consultations undertaken for the FMP, direct applications to the cut stumps of eucalyptus, acacias or other readily resprouting non-native trees, is allowed in riparian or wetland habitats supporting special status species during the dry season (roughly July 1 through November 15), never within the wetted channel of the drainage and only when conditions meet the requirements of mitigation measures VEG-8 to prevent wind drift of herbicide.

Agency Consultation and Coordination

Advisory Council on Historic Preservation. The National Historic Preservation Act (NHPA) requires agencies to take into account the effects of their actions on properties listed in or eligible for listing in the National Register of Historic Places. The Advisory Council on Historic Preservation has developed implementing regulations (36 CFR 800) that allow agencies to develop agreements for consideration of these historic properties. The NPS, in consultation with the California State Historic Preservation Officer (SHPO), developed a Programmatic Agreement for the FMP based upon an existing draft Department of the Interior Fire Management Plan Programmatic Agreement. The NPS invited the participation of the Advisory Council, affected American Indian tribes, and the public in this consultation process. This Programmatic Agreement provides a process for compliance with the NHPA and includes stipulations for identification, evaluation, treatment, and mitigation of adverse effects for actions affecting historic properties. The NPS initiated consultation on the GGNRA FMP by letter to the SHPO dated May 23, 2003. Consultation was completed with the signing of the Programmatic Agreement on September 30, 2005. The Programmatic Agreement for Fire Management Activities is included as Appendix J in the FMP FEIS.

U.S. Fish and Wildlife Service and National Marine Fisheries Service (NMFS). The Endangered Species Act (ESA) protects threatened and endangered species, as listed by the U.S. Fish and Wildlife Service (USFWS), from unauthorized take, and directs federal agencies to ensure that their actions do not

jeopardize the continued existence of listed species. Section 7 of the ESA defines federal agency responsibilities for consultation with the USFWS and National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) and requires preparation of a Biological Assessment to identify any threatened or endangered species that are likely to be affected by the proposed action.

The NPS initiated informal consultation with the USFWS on June 18, 2003. Upon request, the USFWS sent the NPS a species list for the GGNRA FMP EIS covering Marin, San Francisco, and San Mateo counties, as well as for the specific United States Geological Survey (USGS) quads within those counties in which NPS fire management activities will take place.

The NPS sent a biological assessment to the USFWS on March 16, 2005 to determine if formal consultation under Section 7 of the Endangered Species Act would be required for the GGNRA FMP. The NPS requested formal consultation with NMFS Fisheries Service on potential effects on listed salmonids and Essential Fish Habitat in a letter dated March 21, 2005.

USFWS issued a Final Biological Opinion on the GGNRA FMP EIS on October 7, 2005 (see Appendix K of the FMP FEIS). The Final Biological Opinion lays out the USFWS conclusions regarding the numerous listed wildlife and plant species within the FMP FEIS planning area and proposes several mitigation measures to assure protection of the species. All recommendations of the USFWS have been incorporated into the listing of mitigation measures included in Chapter 2 of the FMP FEIS and Attachment 1 to this ROD. The USFWS conclusions regarding implementation of Alternative C, the Preferred Alternative are:

1. Implementation of the FMP is not likely to jeopardize the continued existence of the mission blue butterfly, California red-legged frog, the San Francisco garter snake, Raven's manzanita, San Francisco lessingia, Presidio clarkia, and the Marin dwarf flax nor is it likely to destroy or adversely modify proposed California red-legged frog critical habitat. Critical habitat has not been designated or proposed for mission blue butterfly, San Francisco garter snake, Raven's manzanita, San Francisco lessingia, Presidio clarkia, and the Marin dwarf flax, therefore, none will be affected.

2. Implementation of the FMP is anticipated to result in incidental take of the mission blue butterfly, California red-legged frog, and the San Francisco garter snake. The nondiscretionary conservation measures proposed by the NPS and described in the FEIS and ROD will substantially reduce but do eliminate the potential for incidental taking of these listed species. The USFWS has determined that the level of anticipated take is not likely to result in jeopardy to the three listed wildlife species and proposed critical habitat of the red-legged frog.

3. Implementation of the FMP is not likely to adversely affect the San Bruno elfin butterfly, the salt marsh harvest mouse, tidewater goby, California brown pelican and the Pacific Coast population of the western snowy plover because of the avoidance measures included in the proposed project, actions proposed are either outside the range of the listed species or the action area does not contain suitable habitat for the taxa.

4. The USFWS concurs that Alternative C is not likely to adversely the northern spotted owl because of the specific measures for owl protection that will be implemented with the FMP regarding the siting and timing of project actions in relation to owl activity sites, limits on tree

and understory canopy modification near owl activity sites, avoiding disturbance of woodrat nests, limiting removal of larger diameter trees, and conducting post-project monitoring.

5. The USFWS concurs with the determination that the proposed project is not likely to adversely affect the marbled murrelet because of specific avoidance measures that will be implemented with the FMP regarding timing and siting of project actions, and avoidance the felling trees of larger diameter trees.

NMFS issued a Biological Opinion on the FMP FEIS on February 8, 2006 addressing potential effects of the FMP on the Central California Coast coho salmon (*Oncorhynchus kisutch)*, an Evolutionary Significant Unit (ESU) and the Central California Coast steelhead (*Oncorhynchus mykiss)*, designated a Distinct Population Segment.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (PL 104-267), requires all federal agencies to consult with NMFS Fisheries on all actions or proposed actions permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH). NMFS provides recommendations to agencies through the Section 7 Consultation process to conserve EFH when agency activities may adversely affect EFH. Critical habitat has been designated for coho salmon and steelhead and includes streams and riparian areas within the FMP action area, triggering conformance with the Magnuson-Stevens Act.

After review of the biological assessment, best available scientific and commercial information, current status of the listed species, information on the environmental baseline of the action area, the anticipated effects of implementation of the FMP and cumulative actions, NMFS concluded that the FMP is unlikely to jeopardize the continued existence of the Central California Coast coho salmon or steelhead and unlikely to adversely modify their designated critical habitats. After review of the mitigation measures proposed for the control of erosion and protection of salmonids, NMFS recommended an additional conservation measure, taken directly from wording within the FEIS, be included to protect salmonid habitat from effects of herbicide use (see VEG-8 in Attachment 1). Modifications to two FMP mitigation measures (SS-12 and SS-13) were also requested. The issuance of an incidental take statement for the programmatic FMP was not required by NMFS.

As a condition supporting the issuance of their findings on the FMP, NMFS requires that the NPS provide them annually with information on the proposed implementation efforts for the upcoming fiscal year. Information will include a map of the project area, a project description and an assessment of potential effect on coho salmon and steelhead. NMFS will respond to the annual project report in writing within set time periods and inform the park whether the proposals may be appended or tiered from the programmatic biological opinion or whether project modifications, additional information or a separate consultation will be required.

California Coastal Commission. The Coastal Zone Management Act protects coastal environments. While the act transferred regulatory authority to the states and excluded federal installations from the definition of the "coastal zone," it requires that federal actions be consistent with state coastal management plans. Activities taking place within the coastal zone under the definition established by the California Coastal Management Plan (CCMP) require a federal consistency determination. The FMP FEIS was submitted to the California Coastal Commission for federal consistency determination. In a letter dated February 10, 2006, the Coastal Commission determined that the programmatic FEIS would

not adversely impact coastal resources and would meet the requirements for a negative determination with the adoption of a requirement for the NPS to provide the CCC Executive Director annually with an implementation plan. The Executive Director requested that NPS staff meeting annually with CCC staff to discuss how implementation of the annual work plan and mitigation measures will ensure protection of sensitive coastal resources. The NPS will submit additional consistency and/or negative determinations to the Commission for any future FMP projects within GGNRA that hold the potential to adversely affect resources within the coastal zone.

Changes Made for the Final EIS

A number of minor changes were made in the FEIS based on public comment received during the review period for the DEIS.

- A tenth FMP goal, accompanied by two objectives, to address smoke management and protection of air quality was added to the list of FMP goals in Chapter 1
- Figures 2-7, Fire Roads North Lands, and 2-8, Fire Roads South Lands were removed from the document and text edits were made to clarify which road-related functions at GGNRA are the responsibility of fire management staff (and are within the scope of the FMP FEIS) and which are the responsibility of other NPS divisions.
- Additional information was provided on herbicide use in conjunction with mechanical fuel removal as requested by the U.S. Environmental Protection Agency (EPA). This includes information on the park's common herbicide used, the review and approval process, regulatory conformance, protections for sensitive resources, the public and firefighters.
- Changes were made to the Mitigation Measures for Air Quality and Special Status Species in response to a comment from the EPA. As a result of the consultation between the NPS and the U.S. Fish and Wildlife Service (USFWS), two new Special Status Species mitigation measures were added. NMFS requested that a paragraph from FEIS Chapter 4 regarding herbicide application be added to the list of mitigation measures and that text modifications be made to two Special Status Species mitigation measures addressing protection of salmonids.
- On the recommendation of the EPA, changes were made to the Impacts on Air Quality section to clarify the relationship between BAAQMD's smoke management plan (SMP) and the State Implementation Plan (SIP). Text was added to address whether the three FMP alternatives would trigger a conformity analysis with the SIP; new text and a new table were also added to explain and state the *de minimus* levels for criteria pollutants with which the Air Basin is in nonattainment or maintenance status; and Table 3-4 was updated to reflect the current attainment status of criteria pollutants for the Bay Area Air Basin.
- In response to the EPA's request for more information regarding smoke management practice, a new appendix was added that lists smoke management techniques and non-burning alternatives that GGNRA could incorporate into a smoke management plan and/or that BAAQMD could require as part of the smoke management plan approval process. The referenced appendix is Appendix I – Non-burning Alternatives and Air Emissions Reduction Techniques for Fuel Reduction and Resource Benefiting Prescribed Burns in GGNRA.

Conclusion

Alternative C provides the most comprehensive and effective method among the alternatives considered for meeting the NPS purposes, goals, and objectives for managing fire and fire risks in GGNRA and for meeting national environmental and fire policy goals. The selection of Alternative C, as reflected in the *Final Fire Management Plan/Environmental Impact Statement* would not result in the impairment of park resources and would allow the NPS to conserve park resources and provide for their enjoyment by visitors.

Approved:

[Signed by Jon Jarvis on 2/23/06]

_____ _____

Jonathan B. Jarvis, Regional Director Date

Pacific West Region, National Park Service

Attachment 1 – FMP Mitigation Measures

The NPS will implement the following mitigation measures in implementing the Selected Alternative of the FMP FEIS. The measures are designed to minimize or avoid the potential environmental impacts of the actions to be implemented under the FMP FEIS or to create a beneficial effect. These measures would not be fully applicable in the event of a catastrophic fire. The NPS will regularly evaluate and monitor the mitigation measures during implementation to determine their continued effectiveness in reducing impacts. The NPS, as Lead Agency, will have primary and full responsibility for coordinating the specific elements of each mitigation measure and will be responsible for ensuring that each mitigation measure has been implemented as specified in this document.

General FMP Mitigation Measures

FMP-1(a) To ensure that GGNRA fire management actions are in conformance with NEPA, the Record of Decision on the Final EIS, and NPS policy, individual fire management projects and modifications to the GGNRA five-year implementation plan will be subject to the GGNRA project review. Through the project review process, an interdisciplinary team will evaluate whether the potential effects of a proposed action or five-year plan, including appropriate mitigation measures, are adequately addressed by the Final EIS and reflect NPS management policies. If it is determined that the project has the potential for new environmental effects not addressed in this EIS or effects greater than those described in this EIS, a separate environmental process will be conducted.

FMP-1(b) To ensure compliance with 36 CFR 800, the regulations for implementing the NHPA, the Programmatic Agreement that will be developed specific to this park's fire management program will stipulate that each five-year implementation plan will made available to the State Historic Preservation Officer, the Advisory Council on Historic Preservation, and the public for comment.

FMP-2 GGNRA staff will meet with representatives of local fire agencies that could respond to wildfires in GGNRA lands in Marin, San Francisco, and San Mateo counties. The purpose of the meeting will be to provide information to fire agencies on the location and preferred strategies for suppression actions that will minimize damage or afford protection to important park resources in the event of a wildfire. The information exchanged between the NPS and local fire agencies will include notification procedures, new or modified facilities in the park, updated information on cultural and natural resources, low-impact suppression techniques, or potential protection techniques for certain locales in GGNRA.

FMP-3 GGNRA cultural and natural resources staff will work with the fire management staff in preparing and updating maps and other data sources showing areas of the park with sensitive resources such as National Register properties; archaeological sensitivity; cultural landscapes; plant communities of special management concern (e.g., wetlands, riparian areas, dunes, and Special Ecological Areas identified in the park's Natural Resource Management Plan); habitat of federal, state, and locally listed species; and other important natural and cultural resources.

FMP-4 GGNRA staff will conduct a training session for all contractor crews at the beginning of new fuel reduction projects to familiarize the crews with sensitive resources at the project site and review project conditions. Training sessions may include identification of NPS staff resource contacts; special status plants, wildlife, or other sensitive resources in the work area; identification and specific removal techniques to protect cultural resources from disturbance or prevent resprouting of nonnative plants; markings for the limit line of disturbance; thresholds that trigger a change in implementation techniques or require a halt in project implementation; proper disposal of food waste and garbage to discourage feeding by vectors and corvids; daily close-up of the project site to assure public safety; and information for public contacts during project implementation.

FMP-5 An education program for field personnel involved with implementation of FMP projects will be conducted prior to the initiation of field activities. The program may include a brief presentation on any listed species at the work area, including a description of the species and its ecology, habitat needs, legal status, and protection afforded to the species. Cultural resource issues may include the type of artifacts or soils that could indicate the presence of subsurface cultural resources, the presence of known resources at the site, and important elements of the cultural landscape that must be left undisturbed, among other issues.

FMP-6 The superintendent of GGNRA will appoint members of GGNRA staff to act as resource specialists to consult with operations crews in the event of wildland fire and during planning and execution of prescribed fire. The resource specialists will meet with local fire agencies likely to command wildland fire suppression actions on GGNRA lands and develop strategies for implementing flexible suppression to protect important resources.

FMP-7 Natural and cultural resources staff will be notified of wildland fires as soon as possible so that appropriate staff can advise the lead fire agency on the location of sensitive resources and preferred suppression techniques and begin planning for rehabilitation of the burned area**.** Natural and cultural resource advisors will be assigned to the incident as needed.

FMP-8 For any multi-day fire suppression event, a local or regional Burned Area Emergency Response team will be requested to facilitate development, in conjunction with park staff, of the emergency suppression stabilization and rehabilitation proposals.

Air Quality Mitigation Measures

AIR-1 If recommended by BAAQMD, smoke management plans submitted by the NPS for BAAQMD review can be modified to reduce production of pollutants by reducing the amount of fuels available for burning. Options for reducing the amount of fuels available and emissions produced include reducing the area to be burned, reducing fuel loading (e.g., mowing and understory thinning), managing the rate of fuel consumption, and redistributing the emissions. Treatments to reduce overall air emissions from prescribed burns will be based on current smoke management techniques such as those listed in the Western Regional Air Partnership publication "Non-burning Alternatives to Prescribed Fire on Wildlands" (Jones and Stokes, 2004) and those listed in Appendix I of this FEIS.

AIR-2 The NPS will develop a Smoke Communication Strategy to guide management of smoke events during prescribed fires, managed wildland fires, suppression actions, and fires occurring outside the park. Notification of proposed burns will be disseminated locally to provide adequate advance notice to persons with sensitivities to smoke.

AIR-3 To reduce smoke and pollutant generation during the prescribed burning season, efforts will be made to burn fuel concentrations, piles, landings, and jackpots at other times of the year.

AIR-4 To reduce impacts on visibility in the national park, burning will be avoided on holidays or other periods when recreational visitation is typically high.

AIR-5 To avoid public health and nuisance impacts on neighboring communities, information about upcoming prescribed burns, including guidance for those who are sensitive to smoke, will be provided to park visitors, park employees, and park partners. Prescribed burns will be conducted under meteorological conditions that best avoid smoke drift into nearby residential areas and roadways.

AIR-6 The NPS will arrange in advance with other parks that routinely monitor air quality (i.e., Yosemite National Park or Sequoia National Park) to monitor particulate levels during larger prescribed burns in GGNRA provided the necessary staff and equipment can be made available for GGNRA use.

Soils and Water Quality Mitigation Measures

SW-1 Planned and unplanned fire actions will include strategies to minimize impacts from erosion, such as avoiding steep slopes and highly erosive soils, timing burns to minimize erosion potential, avoiding scraping or burning to bare mineral soil (layer below duff), or using erosion control techniques during or after burns. Subject matter experts will ensure that the erosion control plan for each action is sufficient to prevent long-term moderate or major impacts on the rate of soil erosion. Sites with identified high potential for soil erosion will be monitored.

SW-2 Following a prescribed fire or wildland fire, visual monitoring will be conducted downslope of the area burned and at down-gradient water bodies (including ditches, streams, and wetlands) for evidence of increased soil erosion or increased sedimentation. Additional erosion control/sediment control measures will be applied where warranted.

SW-3 Following wildland fires or prescribed burning, all fire lines (both hand and dozer lines) or other areas disturbed by equipment or vehicles will be rehabilitated as quickly as possible to prevent erosion, discourage the spread of nonnative plants and address soil compaction. Burned area rehabilitation techniques, including recontouring, soil stabilization, and removal and monitoring of nonnative plants, will be used for rehabilitation efforts.

SW-4 Unless no feasible alternative is available, heavy equipment working on fire management actions (excluding suppression) will not be used in areas with soils that are undisturbed, saturated, or subject to extensive compaction. Where staging of heavy equipment, vehicles, or stockpiling is unavoidable, the limit of allowable disturbance will be clearly demarcated by

staking, flagging, or fencing. Following the end of work, surface soils will be scarified to retard runoff and promote revegetation.

SW-5 During implementation of prescribed burns, some of the available coarse, woody debris will be left on the site to foster nutrient recycling and mycorrhizal function and other natural resource benefits.

SW-6 Mechanical regrading and rehabilitation of fire roads will be conducted to specifications identified in the GGNRA Trails Inventory and Condition Assessment and the Memorandum of Understanding for Maintenance and Management of Dirt Roads with adjacent land management agencies.

SW-7 After tree felling, stumps will be left in place in areas with highly erosive soils or on steep slopes.

SW-8 Where surface soils supporting native vegetation will be disturbed as part of fire management actions, the topsoil layer will be excavated and stockpiled separately from other fill and replaced as topsoil at the end of the action.

SW-9 Erosion and sediment control measures will be implemented as prescribed where project actions could leave soils exposed to runoff prior to revegetation.

SW-10 Where multiple burn piles are created on undisturbed soils, the size of the piles will be kept small with sufficient distance between piles to minimize impacts on soils from high-intensity fires and to facilitate reestablishment of mycorrhizal fungi and soil microorganisms from adjacent unburned land.

SW-11 A post-project site stabilization plan will be developed and implemented for all fire management projects.

Wetland Mitigation Measures

WET-1 Fires will be allowed to back into, around, or through wetlands and meadows to avoid suppression damage. Wetlands will be avoided to the greatest extent possible while constructing fire lines and breaks during wildfire suppression. Where wetlands are used as a natural boundary to help contain a fire, the control line will be sited outside the wetland area. Trample lines (rather than dug lines) may be used if it is necessary to site the control line in the wetland.

WET-2 Foams, saltwater or other fire retardants will not be used on or near wetlands to the greatest extent possible.

Vegetation Mitigation Measures

VEG-1 Prescribed burns will be conducted at a time of year when introduction or spread of nonnative plants will be minimized and mortality of nonnative plant species will be maximized.

VEG-2 Soil disturbance during mechanical treatments, prescribed burns, and suppression fires will be minimized to the greatest extent possible to reduce the potential for introduction or spread of nonnative plant species, to protect topsoil resources, and to reduce available habitat for new nonnative plant species.

VEG-3 Areas subject to fire management treatments will be monitored periodically for the presence of nonnative plant species; if such species become established or spread as a result of such activities, the nonnative, nonhistoric plants will be removed.

VEG-4 All vegetation management actions under the FMP will conform to federal and state regulations governing interstate and intrastate restrictions (respectively) adopted to prevent the artificial spread of Sudden Oak Death (*Phytophthora ramorum*) beyond the currently affected area. It will be the responsibility of the natural resources division chief to ensure that current guidelines and regulations are circulated to GGNRA staff involved in fire management actions. Relevant regulations are the Code of Federal Regulations, Title 7, Section 301.92 (updated 9/27/04) and California Code of Regulations, Title 3, Section 3700 (updated 9/2/04). Current regulations do not permit the movement of plant species and associated material listed in 3700(c) outside of the regulated quarantine area (defined in 3700(b)), which includes all three GGNRA counties.

VEG-5 All FMP projects will incorporate techniques that control existing populations of weed species at the project site and incorporate practices to reduce the potential spread of weed species to noninfested areas of the park. Practices to reduce the spread of weed species include the following:

- Movement or deposition of fill, rock, or other materials containing weed seed or viable plant cuttings to areas relatively free of weeds will be restricted.
- Where feasible based on the density of the weed population present, the fire management project manager will survey the road shoulders of the routes that provide project access for nonnative plant species and coordinate removal of those plants that could be disturbed by passing vehicles.
- When project vehicles are required to move from off-road use in weed-infested areas to relatively weed-free areas, and water lines and water tenders are available for use, the tires and body of heavy equipment and vehicles will be hosed down before each transit to the relatively weed-free area.

VEG-6 All herbicide use will be administered through the park's integrated pest management (IPM) coordinator, and only licensed personnel will be allowed to apply pesticides. All herbicide use for fire management actions will be reported monthly to the IPM coordinator.

VEG-7 No herbicide foliar spraying or direct stump applications will be allowed in riparian or wetland habitats supporting special status species except in the dry season (roughly July 1 through November 15 of each year).

VEG-8 In addition to restrictions for riparian and wetland areas, foliar herbicide will not be applied where saturated soils are present, at wind speeds over 5 miles per hour, or when weather conditions facilitate herbicide movement toward drainages. To limit the potential for wind drift, herbicide application will be limited to backpack sprayers.

Special Status Species Mitigation Measures

SS-1 When emergency actions must be taken to prevent imminent loss of human life or property and these actions would result in a taking of listed species or adverse modification of critical habitat not covered under existing FMP biological opinion, the NPS will respond to the situation in an expedient manner to protect human health and safety. After the incident is under control, the NPS will initiate emergency consultation procedures with the appropriate agency(ies).

SS-2 The fire management project manager will ensure that contractor crews working in areas designated as habitat of listed species are monitored by a qualified biological monitor to ensure that project actions conform to restrictions developed for species protection.

SS-3 All fire management actions will operate under a policy of No Net Loss of Endangered Species Habitat, which applies to all species federally listed as threatened or endangered or proposed for listing. The project review process will be used to document the no net loss finding through the conformance assessment conducted for each FMP action proposed for listed species habitat.

SS-4 To avoid the spread of highly nonnative animal species (e.g., bullfrogs) and protect the habitat of federally listed threatened or endangered species, GGNRA resource advisors and fire management staff will advise local fire agencies responding to wildland fires in the park and vicinity of the following guidance:

- Drawing water from freshwater bodies in GGNRA and Rodeo Lagoon should be avoided unless there are no alternative sources available. If freshwater is drawn or scooped from water bodies in the park, it should be used on wildfires within the same watershed whenever possible.

- Ocean and bay waters are preferred water sources for fighting wildfires in the park and vicinity. Habitats of sensitive aquatic species and mission blue butterflies should be avoided when saltwater is used.

SS-5 An education program for the field personnel involved with the FMP shall be conducted prior to the initiation of field activities. The program shall consist of a brief presentation by a person(s) knowledgeable in the California red-legged frog, San Francisco garter snake, mission blue butterfly, and other appropriate listed species. The program shall include the following: a description of these species, their ecology, and habitat needs; an explanation of their legal status and their protection under the Act; and an explanation of the measures being taken to avoid or reduce effects to these species during implementation of the FMP. The

education may be conducted in an informal manner (e.g., ranger and field personnel in a field setting).

SS-6 If a California red-legged frog(s), San Francisco garter snake, or early stages of the mission blue butterfly are observed in the work/burn areas, a qualified biologist or an individual trained in the biology and ecology of these listed animals and designated by the NPS shall capture it and move the animal(s) to an appropriate aquatic of upland location outside of the work area.

Special Status Plants

SS-7 Potential impacts associated with tree removal in the vicinity of the Raven's manzanita, San Francisco lessingia, and Marin dwarf-flax will be evaluated in consultation with the USFWS.

SS-8 To address fire actions occurring within special status plant species populations, site- and/or species-specific rehabilitation plans will be developed to minimize or avoid impacts on the greatest extent possible.

SS-9 When FMP actions disturb the habitat of special status plant species, revegetation and weeding plans will be developed in conjunction with project planning.

SS-10 The potential for research burning and/or mechanical fuel treatments to enhance federally listed threatened or endangered plant habitat will be investigated. Burning in these habitats will be limited to carefully prescribed research burns, designed in conjunction with USFWS staff consultation and in accordance with established recovery plan objectives. Experimental treatments will be scientifically designed with replicate controls and a commitment to post-treatment monitoring.

Salmonids

SS-11 Except in emergency situations, water drafting from park streams and creeks that support salmonids must be halted when water levels drop to a level that could result in disconnected pools of water in the channel. Any water pumping from salmonid streams will require measures to prevent injury to fish, such as using offstream sumps, restricting approach velocities to less than 0.8 foot per second, and screening at intake with openings no greater than 0.25 inch.

SS-12 A buffer will be maintained around riparian areas where fire management activities will be restricted. Staging, fire line construction, and vehicle and heavy equipment use will occur outside the buffer area, and any activities such as nonnative vegetation removal and limited prescribed burning will occur under tightly controlled conditions. Any impacts that occur in the buffer area must be correctable by site-specific actions, and must be confined to short-term, minor (or less) adverse effects. In riparian areas directly adjacent to salmonids streams, mechanical FMP projects will be limited to an annual treatment of less than 10 acres and prescribed burning will require additional consultation.

SS-13 The fire management officer will consult with natural resources subject matter experts to identify rehabilitation and revegetation strategies where fuel reduction projects require bank stabilization in riparian areas. Rehabilitation in riparian areas will be accomplished by hand treatment techniques, using erosion control materials if treatment areas are bare prior to rains, revegetating where needed, and where possible, returning native woody material (large woody debris) to stream banks. If removal of vegetation critical to channel shading is planned or work is proposed for the wetted channel of salmonids streams, additional consultation will be needed.

Northern Spotted Owl

SS-14 Treatment activities described in the FMP or any noise generation above ambient noise levels will not occur within 0.40 kilometer (0.25 mile) of a known occupied or previously used northern spotted owl nest site, or within potential spotted owl habitat between February 1 and July 31 (breeding season), or until such date as surveys conforming to accepted protocol have determined that the site is unoccupied or nonnesting or nest failure is confirmed.

SS-15 Mechanical fuel reduction activities in suitable spotted owl habitat, known or potential, will not substantially alter the percent cover of canopy overstory and will preserve multilayered structure. When shaded fuel break features in suitable northern spotted owl habitat are constructed, the resulting multilayered canopy will only be reduced to a height of 6 to 8 feet, or along roadways as needed for emergency vehicle clearance.

SS-16 Prior to fire management activities, project areas will be surveyed for the presence of dusky footed woodrat nests. If feasible, woodrat nests will be protected.

SS-17 Within northern spotted owl habitat, the cutting of native trees greater than 10 inches diameter at breast height (dbh) will be avoided unless a determination is made that the native tree presents a clear hazard in the event of a fire or cutting is the only option to reduce high fuel loading.

SS-18 The fire management officer will arrange for qualified biologists to conduct post-project monitoring to determine short- and long-term effects of fire management actions on spotted owl activity centers if resources are available.

San Francisco Garter Snake

SS-19 No heavy equipment will be used off of existing fire roads or developed features in areas of known San Francisco garter snake habitat. If use of heavy equipment and trucks is required during emergency situations or for work that would improve San Francisco garter snake habitat, mitigation measures to avoid mortality will be incorporated into the project schedule. Measures to avoid mortality include hand-clearing areas prior to fire management activities, hand-excavating all burrows, trapping snakes out of the excavation area, using monitors to prevent equipment from injuring listed species, and training workers on identification and avoidance of listed species. Work will be conducted by biologists with a valid 10(a)(1)(A) permit and any collected San Francisco garter snakes will be relocated outside affected areas.

Marbled Murrelet

SS-20 Where marbled murrelet habitat overlaps northern spotted owl habitat, the restrictions on noise generation in spotted owl habitat above the level of ambient noise will be to August 5. Further, from August 6 through September 30, noise generation will be limited to ambient noise levels from two hours before sunset to two hours after sunrise to protect any nesting marbled murrelets that have not been noted during surveys (USFWS letter to NPS dated April 13, 1994).

SS-21 In marbled murrelet habitat, felling of very large Douglas-fir or coast redwood trees will be avoided and the fire perimeter will be established at a distance that will preclude the need to fell large trees.

Mission Blue Butterfly

See also Mitigation Measure SS-4 regarding use of ocean and bay waters for suppression actions.

SS-22 Fire management activities will not occur within or immediately adjacent to existing or potential mission blue butterfly habitat during the flight period of the butterfly from February 15 through July 4.

SS-23 Pile burning will only be permitted on barren, disturbed soils in mission blue butterfly habitat.

SS-24 During the information meeting with local fire agencies, the location of mission blue butterfly habitat will be identified. During this meeting and when providing information at an active wildland fire as a resource advisor, natural resources staff will advise the local fire agency of the following guidelines:

- Avoid staging fire suppression actions in or directly adjacent to mission blue butterfly habitat;
- Construct fire lines outside of mission blue butterfly habitat to the greatest extent possible;
- Use wet lines wherever feasible, or narrow, hand-constructed fire lines where water is not available to help contain the spread of the fire; and
- Avoid using saltwater or retardant on habitat of the mission blue butterfly.

SS-25 The potential for research burning and/or mechanical fuel treatments to enhance butterfly habitat will be investigated. Burning in mission blue butterfly habitat will be limited to carefully prescribed research burns. Experimental treatments will be scientifically designed with replicate controls and a commitment to post-treatment monitoring. No more than five percent of existing mission blue butterfly habitat in each county will be treated experimentally each year.

SS-26 Where possible, maintain a 100-foot-wide buffer between fire management activities and mission blue butterfly habitat except when fires are being conducted for research purposes. For habitat enhancement projects, additional measures will include establishment of buffer areas, flagging of *Lupinus albifrons* in the vicinity of activities, installation of temporary fencing, dust control, and worker education (USFWS Biological Opinion for the Fort Baker Plan/EIS, September 29, 1999).

SS-27 The fire management officer will arrange for the removal of nonnative plants within and adjacent to mission blue butterfly habitat following fire management actions, including fire suppression.

San Bruno Elfin Butterfly

SS-28 No planned fire management actions will occur in San Bruno elfin butterfly habitat. Proposed project areas in San Mateo County will be assessed to determine the potential for occurrence of San Bruno elfin butterfly habitat.

SS-29 A 100-foot-wide buffer will be maintained between fire management activities and potential San Bruno elfin butterfly habitat.

SS-30 During the information meeting with local fire agencies, the location of San Bruno elfin butterfly habitat will be identified. During the meeting and when advisors are called to provide information at an active wildland fire, natural resources staff will advise the local fire agency of the following guidelines:

- Avoid staging fire suppression actions in or directly adjacent to San Bruno elfin butterfly habitat;
- Construct fire lines outside of San Bruno elfin butterfly habitat to the greatest extent possible;
- Use wet lines wherever feasible, or narrow, hand-constructed fire lines where water is not available to help contain the spread of the fire; and
- Avoid the use of saltwater or retardant drops on San Bruno elfin butterfly habitat.

SS-31 Conduct fire management activities in areas directly adjacent to San Bruno elfin butterfly habitat outside the flight period of the butterfly, which is from February 1 through May 15.

Tidewater Goby

See also Mitigation Measure SS-4 regarding scooping of Rodeo Lagoon water for use in suppression actions.

SS-32 During information meetings with local fire agencies (see Mitigation Measure NR-1), and on the scene of active suppression actions, natural resource advisors will inform responding fire agencies that Rodeo Lagoon shall not be used for water drafting unless needed to protect life and property and no other feasible water source is available.

California Red-Legged Frog

See also Mitigation Measure SS-4 regarding use of freshwater ponds as a water source for suppression actions and areas of the park sensitive to the use of ocean and bay waters for suppression actions.

SS-33 All suitable habitat within areas proposed for fire management activities will be surveyed and flagged by a qualified biologist to determine whether the site supports suitable breeding or nonbreeding areas for the California red-legged frog.

SS-34 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 treatment area.

SS-35 If likely habitat is identified at the project site, a qualified and permitted biologist will follow accepted protocol and collect and relocate any individual red-legged frogs to nearby suitable habitat, in accordance with the biological opinion from the USFWS.

Western Snowy Plover

SS-35 Where fire management actions involve operation of vehicles or heavy equipment on the beach, the fire management officer or the resource advisor (in the case of a wildfire) will ensure that vehicles will be driven at slow speeds (15 miles per hour maximum) over the wet sand portion of the beach and that natural wave-cast debris will be left on the beach to provide foraging habitat for the western snowy plover.

SS-37 To avoid disturbance of western snowy plovers, aircraft assisting the NPS in the implementation of FMP projects will avoid flying directly over and parallel to the beach to the greatest extent possible.

California Brown Pelican

SS-38 To avoid disturbance to the California brown pelican from late spring to early winter:

- Avoid operating aircraft below and within 500 feet of Rodeo Lagoon, Bird Island, and Bolinas Lagoon to the greatest extent possible.
- Avoid drafting water from Rodeo Lagoon, the ocean near Bird Island, or Bolinas Lagoon.

Monarch Butterfly

SS-39 All known clustering sites of monarch butterflies will be considered for protection from fire management actions.

Wildlife and Important Habitat Mitigation Measures

WIL-1 Prescribed burns, mechanical treatments, and mowing of shrubs and grasses taller than 8 inches will not be conducted during the bird-nesting season, from March 1 through July 31, unless a qualified biologist conducts a pre-project survey for nesting birds and determines that birds are not nesting within the project area. To the greatest extent possible, these activities will be planned and conducted outside bird-nesting season. In intensively managed landscapes where mowing is justified for fuel reduction, vegetation will be maintained at a

height of less than 8 inches throughout the nesting season (March 1 through July 31) to discourage the nesting of ground-dwelling bird species.

WIL-2 In addition to WIL-1, in order to protect nesting raptors, trees shall not be removed between January 1 and March 1 unless qualified personnel conduct a pre-project survey for nesting birds and determine that birds are not nesting within the project area. If nesting raptors are detected, a qualified biologist will delineate a suitable buffer.

WIL-3 Subject to project review conditions, fire management actions proposed for areas of the park that provide only limited habitat (such as areas dominated by broom or ivy species) may be conducted at any time

WIL-4 Since older burn piles could provide wildlife habitat, the piles will be spread out (to move out animals) as much as possible before burning. If moving the piles is not feasible, the fire management project manager will ensure that piles are lit from one side only (with firefighters on the ignition side), so that any wildlife in the pile can run out.

WIL-5 For prescribed fire projects proposed in the Muir Woods FMU, the fire management officer will arrange for a qualified biologist to conduct bat surveys of the tree hollows within the burn unit to identify potential maternity colonies. Measures will be implemented to protect active maternity roosts.

Cultural Resources Mitigation Measures

CUL-1 ***Project Preparation Phase.*** To assure that cultural resources are considered early in the fire management planning process and afforded the utmost protection, the following preparatory actions will be undertaken:

- Computer and other databases containing cultural resources data will be maintained by cultural resource staff in coordination with the needs of fire management activities.
- Appropriate cultural resources monitoring protocols will be established by cultural resources staff and applied to fire management practices as warranted.
- Potential research opportunities to study the effects of fire management actions on cultural resources will be identified by cultural resources staff.
- Cultural resources specialists from adjacent land management agencies will be consulted by NPS staff, as appropriate, in order to coordinate mitigation efforts prior to fire management actions.
- Indigenous archeological sites, spiritual sites, and important plant communities will be identified and appropriately managed for preservation, maintenance, and/or enhancement by park cultural resources staff. Consultation with local Native American communities will, where pertinent, continue to occur in the context of fire management actions.

- Fire management personnel and other staff will receive annual training in cultural resources in relation to fire management activities.

CUL-2 ***Project Planning Phase.*** All areas slated for fire management activities will be considered for pre-action field surveys, based on the recommendations of cultural resource specialists and the need to identify cultural resources in proposed project areas. This includes areas likely to be disturbed during future wildfire suppression activity, such as helispots, staging areas, and spike camps. Site-specific information gathering may include the following:

1. In cultural landscape areas, parameters for identifying vegetation for removal or retention will be incorporated into project planning.

2. Evaluation of the relative hazards of fuel loads in proposed project areas will address the protection of cultural resource values, including:

   2(a) Maintenance of light fuel loads on and in close proximity to cultural resources;

   2(b) Benefits gained from reduced fuel loads in relation to the need to avoid or minimize adverse effects on cultural resources;

   2(c) Opportunities to restore or enhance the historic character of cultural landscapes;

   2(d) In developing burn plans, assessment of the potential effects of heat intensity and duration above, at, and below the surface in relation to cultural resources; and

   2(e) For projects with the potential for accelerating the rates of erosion, potential effects of erosion on cultural resources.

CUL-3 ***Project Implementation***. Adverse effects on known and unknown cultural resources will be avoided or minimized during the implementation of fire management projects. A variety of treatments and techniques, as detailed in the project planning and preparation phase for individual projects, will be used for the protection of cultural landscape features during implementation of both prescribed fire and mechanical treatment activities, as follows:

1. A cultural resource specialist or resource advisor will:

   1(a) Be present during fire management actions, as stipulated, where recorded and suspected but not-yet-recorded historic or prehistoric resources are considered at risk;

   1(b) Deliver a pre-project briefing to fire management staff as necessary; and

   1(c) Share data with fire management personnel as needed to avoid or minimize adverse effects.

2. Vegetation will be flagged, or otherwise identified, in order to properly carry out project planning stipulations for:

   2(a) Retention, based upon age determination or diameter thresholds as previously agreed upon;

   2(b) Raising the skirts on landmark trees and other tree pruning;

   2(c) Flush-cutting trees removed from cultural resource areas unless otherwise stipulated; and

   2(d) Brush removal within agreed-upon boundaries.

3. Fences may be a character-defining feature of historic properties. In such cases:

   3(a) Avoid fences with heavy equipment;

   3(b) Remove brush and scrub only by hand or with hand-tools in a 10-foot-wide buffer zone along fence lines;

   3(c) Provide vehicle access at gates where necessary; and

   3(d) Cut other openings, if necessary, between fence posts.

4. Field patterns may be a character-defining feature of historic properties. In such cases:

   4(a) Use prescribed burn to restore field patterns;

   4(b) Protect fences by not using heavy equipment within a 10-foot-wide buffer zone, and instead using less damaging methods to lessen fire danger, such as watering, hand removal, and hand tools; and

   4(c) Use hand removal of noncontributing vegetation near or in historic vegetation.

5. Structures and small-scale features may contribute, or be themselves, historic properties. In such cases:

   5(a) Remove brush approximately 30 feet from burnable structures, depending on slope, with hand tools being the default method; and

   5(b) If there are foundation plantings, create defensible space outside ornamental edge plantings wherever possible.

6. Some areas may be sensitive for archeological resources on or near the surface. In such cases:

   6(a) Do not drag cut vegetation;

   6(b) Do not use rakes;

6(c) Use no burning when surface or subsurface resources are sensitive to heat; and

6(d) Avoid using surface scarification to retard runoff in archeological sites.

7. Erosion will be minimized to the extent possible, by methods such as:

7(a) Constructing control lines perpendicular to the slope;

7(b) Using the existing road network;

7(c) Keeping heavy equipment off paths and trails;

7(d) Keeping heavy equipment away from areas adjacent to ponds and riparian corridors; and

7(e) Avoiding these and other areas marked by flagging.

CUL-4 ***Post-Project Phase***. Adverse effects on known and suspected cultural resources will continue to be avoided or minimized through careful consideration of actions during the post-action phase of mechanical treatment, prescribed fire, and fire suppression activities.

1. The post-action condition of all recorded cultural resources will be assessed, as necessary.

1(a) Post-action surveys may be conducted both in previously surveyed areas and in unsurveyed areas.

1(b) Previously unrecorded cultural resources will be assessed for condition, and stabilization and other protection needs.

2. Stabilization and other treatment needs of cultural resources will be addressed in the development and implementation of Emergency Stabilization Plans and Burned Area Restoration Plans, and in the development of funding requests for these and other post-fire programs as needed.

3. Monitoring and research data will be compiled, evaluated, and used to help refine cultural resource compliance for future fire management actions and objectives.

Visitor Use and Visitor Experience Mitigation Measures

VUE-1 Project work hours will normally be limited to normal work hours (8 A.M. to 5 P.M.) to minimize potential noise impacts on nearby residents and park visitors. Exceptions may occur outside of normal work hours where warranted, for example to take advantage of windows of favorable weather or to allow for project completion before wildlife breeding period restrictions begin.

VUE-2 Where noise levels from project operations could be intrusive to adjacent residents or park trail users, all efforts will be made during project planning to site project staging areas in order to optimize the noise level reduction gained from natural barriers and screening

vegetation. Staging areas will be sited to minimize noise levels for sensitive receptors to the extent feasible without causing adverse environmental effects on park resources, values, or public access.

VUE-3 Park fire staff will avoid temporary closures of areas of the park during fuel reduction projects if spotters can be available to escort the public safely through the work area.

VUE-4 To the extent feasible while protecting public health and safety, fire management officer will instruct contractors or NPS crews to secure work sites at the end of the work day so that closures around a project site can be lifted prior to and after working hours during weekdays and all day on weekends.

VUE-5 The fire management office will develop and implement an education and communication plan for all site-specific fire management implementation projects. For large scale fuel reduction projects (more than 1 acre) that could affect mid- to close-range viewsheds for residents on the park boundary, park staff will arrange a meeting with the community to present the scope of work and provide an opportunity for public comment. Communication plans for projects may include information such as the project scope, schedule, and alternative trail routes, where needed, to be posted in the project vicinity.

Public Health and Safety Mitigation Measures

PHS-1 Site plans for tree removal projects will be reviewed by the project review committee for potential safety hazards from windthrow and wind pattern change as a result of implementation.