

2 Executive Summary

2.1 Introduction

Wildland fire prevention, preparation, and response are a part of Midpen's land stewardship. California's fire season is now longer and more intense, due in part to dense regrowth of historically logged forests, more than a century of fire suppression, and a changing climate. To meet these growing challenges, Midpen is establishing this Program to allow for increased and environmentally sensitive vegetation management. The Program is designed to protect natural and cultural resources, expand landscape-level ecological resilience to changing climate and fire risk conditions, and facilitate ecologically sensitive wildland fire response and training while enhancing public safety and education.

The Program requires approval by Midpen's Board of Directors and as such, is considered a discretionary action and subject to CEQA. Midpen has determined that the appropriate environmental review document is a Program EIR, in accordance with CEQA. This Program EIR addresses the effects of the Program as specifically and comprehensively as possible. Most activities addressed in the Program EIR can be carried out upon Program approval and EIR certification by Midpen's Board of Directors. Where additional CEQA review is needed (for actions outside the scope and coverage of the analysis presented herein), the additional CEQA review can be tiered from this Program EIR.

This Program EIR has been prepared in accordance with CEQA (Public Resources Code Section 21000 *et seq.*) and the 2018 amendments to the Guidelines for the Implementation of CEQA (14 California Code of Regulations Section 15000 *et seq.*) to provide an assessment of the potentially significant environmental effects of the Program.

2.2 Program Overview

2.2.1 Program Objectives

The objectives of the Program are as follows:

1. Manage vegetation (including invasive fire-prone trees) to establish healthy, resilient, fire-dependent or fire-adapted ecosystems to further Midpen's mission to protect and restore the diversity and integrity of the ecological processes on Midpen lands and facilitate healthy post-fire recovery.

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2. Integrate Native American traditional ecological knowledge practices of natural resource management, particularly as they relate to prescribed fire, that promote ecological resiliency and enhance biodiversity.
3. Manage vegetation and infrastructure on Midpen lands to reduce wildland fire risks, improve wildland fire fighting capabilities and coordination, and improve overall safety to reduce the harmful effects of wildland fire on people, property, and natural resources.
4. Provide an adaptive framework for periodic review of and revisions to Midpen decisions in response to a changing climate, improved knowledge, and improved technology. This framework also considers competing Midpen priorities, capacity, funding and fiscal sustainability, and partnerships to determine the location, scale, and timing of future vegetation management activities.

2.2.2 Program Framework

The proposed activities under the Program would be applied on all lands managed by Midpen, which covers nearly 60,000 acres of land, mostly in unincorporated portions of San Mateo, Santa Clara, and a small section of Santa Cruz counties with other land within the jurisdiction of 17 cities. The Program would serve as a planning and implementation document that fully describes and integrates four plans:

- **Vegetation Management Plan (VMP):** Addresses creation and maintenance of fuel reduction areas (FRAs) for ecosystem health, fuel breaks, and defensible space zones using vegetation management techniques addressed in Midpen's Integrated Pest Management Program (IPMP). These techniques include manual and mechanical removal of vegetation, use of herbicides, and prescribed herbivory.
- **Prescribed Fire Plan (PFP):** Addresses the methods and implementation of prescribed fire to manage fuel and improve ecosystem health.
- **Wildland Fire Pre-Plan/Resource Advisor Maps:** Describes the creation of Resource Advisor maps for each open space preserve and other managed land (or groups of managed lands) that will include information on existing conditions, infrastructure, and resources constraints. The plans with maps would aid fire suppression activities and would identify sensitive resource areas that merit protection from potential damage due to fire or fire suppression activities.
- **Monitoring Plan:** Provides a framework for recording pre-project conditions, vegetation treatment response, and fuels inventories to inform future adaptive management techniques.

The VMP and the PFP are the plans that could result in physical effects to the environment as could some components of the Wildland Fire Pre-Plan that would involve the installation of firefighting infrastructure on Midpen lands.

A detailed description of the Program components is included in Chapter 3: Project Description of this document.

2.3 Summary of Environmental Impacts and Mitigation Measures

This Program EIR has been through extensive environmental evaluation. Issues were raised by the public and resource agencies during scoping. This document focuses primarily on key issues where potentially significant impacts from implementation of the Program could occur. Resources for which there are no impacts or less than significant impacts are therefore excluded from detailed analysis as described in Chapter 4: Environmental Setting, Environmental Impacts, and Mitigation Measures. Key issues are discussed in each resources section in Chapter 4: Environmental Setting, Environmental Impacts, and Mitigation Measures. Table 2.1-1, located at the end of this chapter, provides a summary of the Program’s potential environmental impacts, level of significance before mitigation, recommended mitigation measures, and the level of significance after the application of mitigation measures.

2.4 Summary of Project Alternatives

CEQA Guidelines Section 15126.6, as amended, mandates that all EIRs include a comparative evaluation of the proposed project with alternatives to the project that are capable of attaining most of the project’s basic objectives but would avoid or substantially lessen any of the significant effects of the project. CEQA requires an evaluation of a “range of reasonable” alternatives, including the “no project” alternative. Chapter 6: Alternatives, provides an analysis of the comparative impacts anticipated from the four alternatives to the Program, including:

1. **No Program Alternative.** While this alternative does not meet Program objectives, it must be evaluated under CEQA. This alternative includes continuing existing vegetation management activities. No prescribed burning and no expanded activities under the VMP would be performed. This alternative would reduce direct, significant WFRP impacts to air quality and GHG emission impacts, soil erosion impacts, water quality impacts, and impacts on special-status species and communities, primarily because significantly less work and no prescribed burning would occur.
2. **No Prescribed Fire Plan Alternative.** This alternative would involve removal of the PFP from the Program, and no prescribed burning would be implemented. Pile burning under the VMP would still be allowed. This alternative would reduce significant and unavoidable impacts from criteria pollutant and GHG emissions of the Program.
3. **Reduced Program Alternative – Reduced Acreages of Vegetation Management Areas for Fire Management.** This alternative would include a plan to reduce the distances from resources used to develop vegetation management areas (VMAs) for fire management, thereby reducing the acreages that could be treated. This alternative would reduce overall impacts to any resources for which the VMP would have an impact, such as impacts to biological resources (rare plants, special-status species habitat, sensitive communities), cultural resources, hydrology, visual resources, and others, although the level of impacts may still require mitigation.

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- 4. Reduced Program Alternative – No Acacia or Eucalyptus Removal and Limit Treatments in Sensitive Communities to Fuel Reduction Areas.** This alternative would eliminate the acacia and eucalyptus removal and would include only FRA-level work in any sensitive community. Some potentially significant and unavoidable visual impacts from removal of eucalyptus and acacia would be avoided; however, other significant unavoidable visual impacts from creation of VMAs and installation of firefighting infrastructure could still occur. Potential impacts to special-status butterflies and raptors associated with eucalyptus could be reduced, as well as other impacts such as erosional impacts, and slope stability impacts. Impacts to identified sensitive communities would also be reduced (but not eliminated) by reducing the extent of work that would occur within these communities.

2.5 Significant and Unavoidable Environmental Impacts

Detailed mitigation measures are identified in the resources section within Chapter 4: Environmental Setting, Environmental Impacts, and Mitigation Measures, that are intended to mitigate project effects to the extent feasible. These mitigation measures are provided in Table 2.1-1. After implementation of the mitigation measures, nearly all of the adverse effects associated with the Program would be reduced to a less-than-significant level. However, the Program would result in potentially significant and unavoidable impacts from generation of criteria air pollutant and greenhouse gas (GHG) emissions, primarily from prescribed burning and potentially significant visual impacts from vegetation thinning and tree removal, as viewed from scenic viewpoints, trails, corridor's or roads.

2.6 Areas of Controversy and Issues to be Resolved

Section 15123 of the CEQA Guidelines requires the summary section of a Draft EIR to identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public, and issues to be resolved. The comment letters received on the Notice of Preparation (NOP) are included in Appendix A of this document. Key areas of controversy or environmental concerns were expressed over:

- **Alternatives:** Defining a range or certain alternatives to the Program, including an alternative that includes extensive mowing versus prescribed burning or prescribed herbivory;
- **Biological Resources:**
 - Identifying the potentially significant impacts to biological resources, particularly listed or protected species and balancing vegetation management actions against species impacts;
 - Addressing habitat fragmentation and connectivity;
 - Addressing impacts to sensitive habitats from expansion of invasive species from Program activities; and

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- **Geology and Soils:** Addressing how fire management actions could impact slope stability and induce landslides and mitigating for any associated effects.

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Table 2.1-1 Summary of Impacts and Mitigation Measures

Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
4.2 Aesthetics			
<p>Impact Aesthetics-1: Substantial impact on a scenic vista, or substantial degradation of the existing visual character or quality of public views of the site and its surroundings. Vegetation and fuel management activities are currently one component that shapes the visual appearance of Midpen lands. Implementation of the Program would increase the extent of vegetation management areas and the intensity of treatments performed each year. The tools and techniques proposed under the Program have all been used before on Midpen lands but at a lower intensity than is proposed under the Program. Numerous scenic trails, corridors, roads, and viewpoints are located within the OSPs and the visual quality and viewer sensitivity to change throughout most OSPs is therefore high. Temporary visual degradation could occur in some areas during implementation of vegetation management activities, particularly for mowing or from smoke from large-scale prescribed burns. These short-term impacts, however, would be localized and small in scale, and as such are considered to have a less than significant impact on visual character and quality of public views. Over the long-term, implementation of the proposed Program activities and plans would result in landscapes that generally replicate already existing visual qualities and patterns on Midpen lands and in the region, but with a managed appearance. Potentially significant visual impacts could occur while work is being performed. The loss or alteration of eucalyptus trees and existing forest density, as viewed from scenic areas, could be considered a degradation of the existing visual character. Construction dust would be visible from roads and trails. New infrastructure under the Wildland Fire Pre-Plans could be visible from scenic vistas and trails resulting in a substantial change to the visual character of an area. Implementation of MM Air Quality-1 and MM Aesthetics-2 would likely reduce impacts to less than significant levels by requiring guidelines for the design of roads, landing zones, and staging area or other structures, and requiring grading activities to implement fugitive dust controls, but occasionally, it may not be possible to avoid placing an important new road, staging, or helicopter landing area adjacent to a scenic trail or viewpoint where it could degrade visual quality. Impacts to visual quality and scenic views would be significant and unavoidable in some areas where FRAs, prescribed burn activities, or infrastructure are visible from scenic roads or vistas.</p>	Potentially significant	<p>MM Aesthetics-1: Reduction of Visual Impacts from Scenic Roads, Corridors, Trails, and Viewpoints from VMAs</p> <ul style="list-style-type: none"> • Midpen shall conduct a visual reconnaissance of any planned VMAs during the annual planning process, prior to implementation of the VMA. The reconnaissance shall only apply to VMAs, based on desktop review, that could have the potential to be visible from a designated scenic road, corridor, trail, or viewpoint. • If Midpen identifies that a VMA would fall within an area with lengthy views from a scenic road, corridor, trail, or viewpoint (i.e., longer than a few minutes) of a proposed treatment area, and would degrade the view by changing the existing character or opening up a less scenic view, Midpen will, before implementation, identify any change in location or design (such as avoid areas or reduce degree of thinning) of the VMA to reduce impacts to scenic areas and public views. • If no changes are available that would reduce impacts to public viewers and that could achieve the intended wildland fire risk reduction objectives of the proposed treatment, Midpen will thin and feather adjacent vegetation to break up the linear edges of treatment areas and strategically preserve vegetation at the edge of the treatment area to help screen public views and minimize the contrast between the treatment area and surrounding vegetation. <p>MM Aesthetics-2: Guidelines for Design of Roads, Landing Zones, or Staging Areas</p> <p>New roads, landing zones, and staging areas (firefighting infrastructure) shall be designed in accordance with the following guidelines, as feasible:</p> <ul style="list-style-type: none"> • Locate new firefighting infrastructure away from ridgelines. • Maximize natural conditions of the area surrounding infrastructure (e.g., mowed grass cover versus hardened surface). • Minimize recontouring of hills and natural topography. • Minimize hillside cuts that run against the contours; follow contours to the greatest extent possible. • Avoid large rocks and mature, healthy trees. <p>MM Air Quality-1: Fugitive Dust Control Measures for Infrastructure Installation (see Section 4.3: Air Quality below)</p>	Potentially significant and unavoidable
<p>Impact Aesthetics-2: Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. The proposed Program would involve wildland fire management activities across Midpen lands and in many cases scenic resources, including historic structures, unique rock outcroppings, and trees, are viewable from State scenic highways. MM Aesthetics-1 would be implemented to assess and reduce visual impacts in State scenic highway corridors, but it may not be feasible to implement it in all areas. Prescribed burns would change the density of vegetation and color of the landscape to dark gray/black, the burns could still significantly degrade the visual character or quality of views from the State scenic highway until successional vegetation reestablishes. Where new firefighting infrastructure could impact a scenic area, MM Aesthetics-2 would be applicable and would likely reduce impacts to less than significant in the majority of cases, but occasionally, it may not be possible to avoid placing an important new road, staging, or helicopter landing area adjacent to a scenic trail or viewpoint where it could degrade visual quality. Impacts, in those rare instances, may be significant and unavoidable.</p>	Potentially significant	<p>MM Aesthetics-1: Reduction of Visual Impacts from Scenic Roads, Corridors, Trails, and Viewpoints from VMAs</p> <p>MM Aesthetics-2: Guidelines for Design of Roads, Landing Zones, or Staging Areas</p>	Potentially significant and unavoidable

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
<p>Impact Aesthetics-3: New source of substantial light or glare that would adversely affect day or nighttime views in the area. Implementation of the Program would not include new, permanent lighting. Temporary lighting could be used during installation of new firefighting infrastructure in the early morning and evening. Glare from equipment and new firefighting infrastructure is not anticipated. Impacts from light or glare would be less than significant.</p>	Less than significant	No mitigation measures are required.	N/A
4.3 Air Quality			
<p>Impact Air Quality-1: Conflict with or obstruct implementation of the applicable air quality plan. As discussed below in Impact Air Quality-2, implementation of the Program, prescribed fire and pile burning specifically, could exceed Bay Area Air Quality Management District (BAAQMD) criteria pollutant thresholds identified to achieve the goals of the 2017 Clean Air Plan (CAP) and could exceed Monterey Bay Air Resources District (MBARD) criteria pollutant thresholds identified to achieve the goals of the 2012-2015 Air Quality Management Plan (AQMP). Prescribed burn emissions would likely exceed pollutant thresholds established by BAAQMD and MBARD, in part to achieve the goals of the 2017 CAP and 2012-2015 AQMP. MM Air Quality-1 requires implementation of fugitive dust controls and MM Air Quality-2 requires implementation of measures to minimize prescribed burn and pile burn emissions. The potential impacts associated with dust would be reduced to less than significant with implementation of MM Air Quality-1. The impacts associated with burning vegetation is potentially significant and unavoidable after implementation of MM Air Quality-2.</p>	Potentially significant	<p>MM Air Quality-1: Fugitive Dust Control Measures for Infrastructure Installation</p> <p>At a minimum, the following control measures must be implemented during construction:</p> <ul style="list-style-type: none"> • When moisture content is low enough to create dust, all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered or treated with a non-synthetic dust palliative (e.g., organic nonpetroleum products) as often as needed to control dust emissions. • All haul trucks transporting soil, sand, or other loose material off site shall be covered. • Vehicle ingress and egress locations shall be stabilized to minimize erosion and sediment transfer. • For Program activities involving grading or excavation conducted directly off public roads, all visible mud or dirt track-out onto adjacent public roads shall be removed. The use of dry power sweeping is prohibited on public roads. • All vehicle speeds on unpaved roads shall be limited to 15 mph, in accordance with Midpen policy (LU Regulations Section 500.1; MO Manual 07.005). • All roadway, driveway, and sidewalk paving shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • A publicly visible sign shall be posted with the telephone number and person to contact at Midpen regarding dust complaints. Midpen shall respond and take corrective action within 48 hours. The applicable air district's (e.g., BAAQMD or MBARD) phone number shall also be visible to ensure compliance with applicable regulations. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, § 2485 of CCR). Clear signage shall be provided for construction workers at all access points. • Construction equipment shall be properly maintained by a certified mechanic. <p>MM Air Quality-2: Burn Emission Reduction Techniques (see below)</p>	Potentially significant and unavoidable due to prescribed burn emission exceedances
<p>Impact Air Quality-2: Net increase of a criteria pollutant for which the program region is in non-attainment under an applicable federal or state ambient air quality standard. Use of manual and mechanical methods, prescribed burning, prescribed herbivory, and vehicles and equipment during vegetation management activities would generate exhaust emissions. Fugitive dust would be generated from equipment and vehicle use on paved and unpaved roads, and from ground disturbing activities. Prescribed burning would emit particulate matter emissions from combustion of vegetation. Estimated emissions during implementation of the Program would exceed the numerical significance thresholds for particulate matter (PM₁₀ and PM_{2.5}) and ozone precursors (NO_x and ROG) set by BAAQMD, and exceed the numerical significance thresholds for ozone precursors (NO_x and ROG) identified by MBARD (Table 4.3-7). The Program's impacts on criteria pollutants would be potentially significant. MM Air Quality-2 requires consideration and implementation of measures to minimize prescribed burn and pile burn emissions, when and where appropriate. The impact would remain potentially significant and unavoidable.</p>	Potentially significant	<p>MM Air Quality-2: Burn Emission Reduction Techniques</p> <p>For activities within a small portion of Long Ridge OSP and a very small portion of Sierra Azul OSP that falls within the NCCAB, Midpen shall limit pile burning to 8.8 tons (i.e., not more than nine 10-foot-wide by six-foot-high parabolic piles of shrub/hardwood vegetation or equivalent) in any one day.</p> <p>Midpen shall incorporate the following measures during planning and implementation of a prescribed burn, where feasible:</p> <ul style="list-style-type: none"> • When considering a prescribed burn, weigh the habitat benefits of burning in a particular vegetation type against the emissions. • Reduce the total area burned through mosaic burning. • Burn when fuels have a higher fuel moisture content. • Reduce fuel loading by decreasing the density of vegetation and other fuels before ignition using mechanical treatments, manual treatments, prescribed herbivory, and pile burning. • Schedule burns before new vegetation growth, increasing fuel loads. • Delay planned burns when a Spare the Air Burn Ban has been declared. 	Potentially significant and unavoidable due to prescribed burn emission exceedances

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
<p>Impact Air Quality-3: Exposure of sensitive human receptors to substantial pollutant concentrations. Use of vehicles and equipment during Program activities could disturb serpentine soil, potentially exposing individuals to asbestos. Prescribed and pile burn activities would release smoke, which could expose workers, recreationalists, and the public to toxic air contaminant (TAC) emissions, including PM_{2.5}. Prescribed burning has the potential to expose Midpen employees to levels of acrolein, formaldehyde, respirable particulate matter, and high levels of CO concentration that could impact their health. Smoke could blow towards nearby homes, affecting sensitive receptors' health (including eye and lung irritation). MM Air Quality-3 requires watering of areas proposed for ground disturbing activities in serpentine soils. MM Air Quality-4 requires use of real-time CO monitors, rotation of personnel out of heavy smoke, and strategically-placed firefighters and fire lines where smoke exposure is less. MM Hazards-3 requires closure of trails and Midpen-owned roads within at least 500 feet of the edges of a prescribed burn area for safety reasons. Implementation of these measures would reduce impacts on sensitive receptors; however, impacts could remain significant. Despite adherence to burn-specific plans and regulations, smoke generated by each prescribed burn conducted under the Program may not behave as predicted and could expose sensitive receptors (including nearby residences) to TAC emissions and short-term health risks. The impact on sensitive receptors from prescribed burning would be potentially significant and unavoidable.</p>	<p>Potentially significant</p>	<p>MM Hazards-3: Safety Around Prescribed Burns (see Section 4.8: Hazards, Hazardous Materials, and Wildland Fire below)</p> <p>MM Air Quality-3: Asbestos Management Prior to conducting any activities requiring manual soil-disturbing activities (e.g., pulling of vegetation or trenching), use of mechanical equipment (e.g., skid steer loader or backhoe), or off-road access to a work site, consult the map created using GIS that shows where serpentine soils and rock formations are located. If the work site or temporary access route passes through an area with serpentine soils or rock formations, implement the asbestos-management measures (below), developed based on CARB Asbestos Airborne Toxic Control Measures developed for construction and grading operations.</p> <p>Asbestos Management Measures:</p> <ul style="list-style-type: none"> • Areas known to have asbestos shall be watered during ground-disturbing activities (e.g., pulling of medium-to-large vegetation, digging large holes for planting) to ensure that the soil remains moist during the extent of the activity. • Avoid or minimize the tracking of dust into vehicles. • Do not use compressed air for cleaning your vehicles after your visit. Use a wet rag to clean the interior. • All vehicle speeds on unpaved roads shall be limited to 15 mph, in accordance with Midpen policy (LU Regulations Section 500.1; MO Manual 07.005). • When mowing in serpentine soils, the mower head shall be set at least 6 inches above the ground to minimize asbestos dust generation. If when mowing, dust is seen from the mower pluming more than 4 feet above the ground surface, the mower shall be adjusted to the minimum height needed to avoid generating dust plumes. <p>MM Air Quality-4: Midpen Employee Protection from Prescribed Burn Air Pollutants Midpen shall require that prescribed burns on Midpen lands are managed to reduce Midpen employee exposure to CO concentrations and other air pollutants through implementation of the following measures:</p> <ul style="list-style-type: none"> • Use real-time CO monitors. • Train workers to be aware of smoke hazards associated with prescribed and pile burns. • Rotate personnel out of heavy smoke areas and routinely monitor for smoke exposure during burn events. • Avoid burning heavy fuel loads, such as large logs, on the ground to avoid additional mop up. • Strategically place firefighters and fire lines where smoke exposure is less. • N95 or N100 dust masks, or bandanna shall be available for voluntary use and must be used when recommended by the Burn Boss. 	<p>Potentially significant and unavoidable due to prescribed burns</p>
<p>Impact Air Quality-4: Emissions (such as those leading to odors) adversely affecting a substantial number of people. Diesel exhaust from equipment and vehicles as well as volatile organic compounds emitted during painting or paving, if needed for firefighting infrastructure, would generate some odors. Odors could temporarily increase in the immediate vicinity of the equipment operation. Smoke from pile and prescribed burning could affect a substantial number of people under certain circumstances, including workers, recreationalists, and residences. Preparation and implementation of a Burn Plan and Smoke Management Plan would minimize smoke from prescribed burns in areas of substantial numbers of receptors by ensuring that prescribed burns are conducted under optimal weather conditions. Implementation of MM Hazards-3 would reduce impacts from other emissions, however, impacts could remain significant from smoke generated by prescribed burns. With mitigation and adherence to regulations, a substantial number of people would typically not be subjected to objectionable smoke, but due to the unpredictability of smoke, the impact would remain potentially significant and unavoidable.</p>	<p>Potentially significant</p>	<p>MM Hazards-3: Safety Around Prescribed Burns (see Section 4.8: Hazards, Hazardous Materials, and Wildland Fire below)</p>	<p>Potentially significant and unavoidable due to smoke from prescribed burns</p>

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
4.4 Biological Resources			
<p>Impact Biological Resources-1: Substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. Vegetation management activities implemented under the Program could result in direct or indirect adverse effects to special-status plant and special-status wildlife species, and their habitats. Pre-treatment surveys would be required to identify the presence of special-status plants and their habitats under existing best management practices (BMPs) and conditions. MM Biology-1 identifies training, monitoring, and reporting requirements. MM Biology-2 addresses impacts to special-status plants through pre-activity surveys, avoidance, or implementation of minimization measures for any plants found. MM Biology-3 requires compensatory mitigation for permanent impacts on special-status plants, if impacts cannot be avoided or minimized under MM Biology-2. MM Biology-4 and MM Biology-5 require Midpen to implement techniques to minimize the spread of invasive species and forest diseases, including expansion of IPMP's Early Detection and Rapid Response (EDRR) program to VMAs. MMs Biology-6 through 15 require specific species protection avoidance and minimization measures, and, for certain species, compensatory mitigation requirements for habitat conversion. Implementation of these measures would reduce impacts on special-status plants and wildlife and their habitats to less than significant.</p>	<p>Potentially significant</p>	<p>MM Geology-1: Prescribed Herbivory Land and Trail Control (see Section 4.6: Geology and Soils below) MM Geology-2: Erosion Control and Slope Stability Measures (see Section 4.6: Geology and Soils below) MM Geology-3: Fire Lines During Prescribed Burns (see Section 4.6: Geology and Soils below)</p> <p>MM Biology-1: Training, Monitoring, and Reporting</p> <p>Monitoring</p> <ul style="list-style-type: none"> • The biological monitor(s) or qualified biologist(s) shall have the authority to stop Program activities to avoid take or impacts to special-status species or protected biological resources; in the event of unforeseen circumstances (e.g., unanticipated impacts are occurring); or if Program personnel are not complying with regulatory permit conditions and the BMPs listed herein. The biological monitor or qualified biologist shall possess the necessary agency approvals or permits required for involvement in Program activities. • A biological monitor is an individual who has a minimum of 2 years academic and 1 year professional experience in biological sciences and related resource management activities, is able to identify species that may be present within the work area, and is familiar with the habits and behavior of those species. • A qualified biologist/botanist is an individual who has a minimum of a 4-year academic degree in biological sciences or related resource management activities, with a minimum of two survey seasons years (e.g., two seasons during the blooming season of sensitive plants) conducting surveys for each species that may be present within the work area. • A professional biologist/botanist is an individual who has a minimum of 5 years of academic training in biological sciences or related studies and 3 or more years of professional experience conducting protocol-level wildlife and/or florist field surveys. • A Midpen-approved biologist/botanist is an outside consultant who has been approved by Midpen either by a professional biologist/botanist, Resource Advisor, or other appropriate individual, to conduct biological monitoring and surveying activities. This individual can be any one of the three categories of biologist/botanist described above. • A Resource Advisor is an individual who provides professional knowledge and expertise for the protection of resources (e.g., biological and cultural resources), within an emergency incident environment. • The qualified biologist or biological monitor shall conduct on-site monitoring of Program activities that have the potential to impact sensitive biological resources. The monitoring requirements (e.g., frequency and duration) shall depend on the specific activity(ies) being performed and the ecological sensitivity of the site (e.g., the potential for soil erosion or occurrence of special-status wildlife). Some activities shall warrant full-time monitoring by one or more biologists and/or biological monitors; whereas weekly site inspections may be sufficient for other activities. At a minimum, monitoring shall be conducted frequently enough to ensure compliance with permit conditions and BMPs. The monitor shall maintain a log that documents: (a) the monitoring dates, (b) areas and activities monitored, (c) compliance with permit conditions and BMPs, (d) any remedial actions that were taken (or are needed). • Post-activity monitoring shall also occur, with the scope and timing dependent on the potential for risks to biological resources. The purpose of monitoring is to ensure that special-status plant species and sensitive communities were avoided and are not experiencing negative indirect impacts from activities. If negative impacts are observed or are potentially occurring, restoration measures shall be implemented, and modifications made to future activities to avoid similar impacts. <p>Pre-Activity General Survey and Flagging</p> <p>A qualified biologist or biological monitor working under a qualified biologist shall survey all selected work areas shortly before work to assess general conditions and determine environmental considerations as required by IPMP BMPs 21 and 25.</p>	<p>Less than significant</p>

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		<p>Prior to Program activities, the biologist or biological monitor shall use flagging (or other methods) to clearly delineate the work area and any areas that shall be avoided (e.g., sensitive communities, habitat for special-status species).</p> <p>Reporting</p> <p>Information on new localities or sightings for special-status species shall be reported to the Sacramento USFWS Office and the California Natural Diversity Database (CNDDDB) annually. Information on any incidental capture, injury, or mortality of special-status species shall be immediately reported within 3 working days of their discovery or in accordance with the federal and State permit conditions. The data shall also be logged in Midpen’s electronic inventory system identified in IPMP BMP 25.</p> <p>Training</p> <ul style="list-style-type: none"> • Prior to commencing a Program activity, all personnel shall attend a worker environmental awareness training program conducted or prepared by the qualified biologist or biological monitor working under a Midpen-approved biologist as required by IPMP BMP 21. • The worker environmental awareness training will include a brief review of the life history, field identification, and habitat requirements of each special-status species that could potentially be present on-site, their known or probable habitat types and locations, potential fines for violations, avoidance measures, and necessary actions if special-status species or sensitive natural communities are encountered, as required by IPMP BMP 21. In addition, the training shall include information on: <ul style="list-style-type: none"> – All BMPs, regulatory permit conditions, exclusion areas, and other work restrictions. – Color coding for flagging used to demarcate work areas, staging areas, skid trails, watercourses, and exclusion zones (e.g., around special-status plants and other sensitive biological resources). – The identification and reproductive biology of invasive plants. – <i>Phytophthora ramorum</i> and other plant pathogens avoidance. <p>General Wildlife Protection Measures</p> <ul style="list-style-type: none"> • Qualified biologists/biological monitors shall check for any reptiles, amphibians, or other animals under vehicles and equipment parked for more than 30 minutes. • Some individual live, dead, or dying trees shall be retained as snags where recommended by the qualified biologist and biological monitor and where leaving the tree would not increase fire hazards or be a safety concern. • Vehicles traveling to and from the work areas off of established roads and trails, in sensitive plant or wildlife habitat, must travel slowly (5 mph) and be preceded by a monitor to ensure that wildlife shall not be run over by the passing vehicle. Vehicle monitors do not need to be trained biologists. • Qualified biologists/biological monitors are required to temporarily stop any work that they believe may harm special-status species. Work shall not resume until a satisfactory method is agreed upon to minimize or avoid take of the species. • Qualified biologists/biological monitors may require staging areas or stockpiled equipment/materials to be fenced with USFWS and/or CDFW-approved exclusion fencing if there is potential for special-status species to enter the areas and become entrapped, and routine inspection of the area is not adequate to ensure that species are not present. Fencing shall be inspected by a qualified biologist/biological monitor and maintained daily as needed to ensure its proper function in excluding wildlife. Large-scale fencing around entire vegetation management areas is discouraged due to the habitat disruption associated with fence installation and removal. <p>MM Biology-2: Special-Status Plants</p> <p>Pre-Activity Special-Status Plant Survey</p> <p>As required by IPMP BMP 25, a biological monitor or qualified biologist shall survey the work site to determine the potential presence of special-status plants (as defined under Section 4.4.2 in the Program EIR) and document any observations. The</p>	

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		<p>abundance and spatial distribution of all special-status plants and sensitive natural communities detected during the surveys shall be recorded with a GPS unit and entered online into the CalFlora and Midpen’s GIS databases. This information shall also be submitted to the CNDDDB, per MM Biology-1. If any special-status plants are found to occur in the activity footprint, the biologist/botanist shall evaluate the potential level of impacts the activity could have on the plant species, either an individual or population, based on its biology and the nature of the activity (no impact, low impact, or moderate/high impact). Activities with no or low impact can proceed. If an activity could have a moderate or high impact (e.g., anticipated mortality) Midpen shall consult with CDFW and the appropriate avoidance or minimization measures would be implemented, depending on the species’ rank, physiology, and habitat requirements, as described below.</p> <p>Species to Avoid (Unless Population Could Benefit from Program Activity, such as Prescribed Burning)</p> <p>Program activities shall avoid impacts to State or federally listed plants that are known to occur or have the potential to occur on Midpen lands:</p> <ul style="list-style-type: none"> • Ben Lomond spineflower • Butano Ridge cypress • California seablite • Coyote ceanothus • Crystal Springs fountain thistle • Dudley’s lousewort • Marin western flax • Metcalf Canyon jewelflower • Monterey spineflower • Pacific Grove clover • Robust spineflower • Rock sanicle • San Francisco popcornflower • San Mateo thorn-mint • San Mateo woolly sunflower • Santa Clara Valley dudleya • Santa Cruz cypress • Santa Cruz tarplant • Santa Cruz wallflower • Scotts Valley polygonum • Scotts Valley spineflower • Two-fork clover • White-rayed pentachaeta <p>In addition, Program activities shall avoid impacts to the following species that (a) have very specific habitat requirements that are hard to replicate at a mitigation site; (b) are difficult to transplant or propagate; or (c) have insufficient data on the ability to successfully transplant, relocate, or reintroduce the taxa:</p> <ul style="list-style-type: none"> • Anderson’s manzanita • Kings Mountain manzanita • Clustered lady’s-slipper • Mountain lady’s-slipper • Loma Prieta hoita • Arcuate bush-mallow • Most beautiful jewelflower <p>Activities that could have a moderate or high impact on these species shall not occur within an appropriate buffer (as determined by a qualified biologist/botanist or biological monitor working under a qualified biologist) of any individuals or populations identified. Disclines or firefighting infrastructure shall be relocated to avoid any populations of these species. Prescribed herbivory and prescribed burning shall be allowed in the habitats for these species if, in the professional opinion of a qualified biologist/botanist or biological monitor working under a qualified biologist, the activity shall provide a long-term benefit to the plant (e.g., by eliminating non-native plants).</p> <p>Minimization of Impacts for All Other Special-Status Species</p> <p>Midpen shall implement the following approach for all other special-status plant species that have been detected, or that are detected in the Program area during the pre-activity surveys conducted per MM Biology-1 (adding specificity to IPMP BMP 21, which requires developing site-specific measures):</p>	

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		<ul style="list-style-type: none"> • A qualified biologist/botanist or biological monitor working under a qualified biologist shall recommend spatial buffers or other management actions. The buffer size needed to protect a special-status plant from adverse edge effects (indirect impacts) is dependent on the specific species, threats to the species, existing disturbances, and the habitat's permeability to those threats (CBI 2000). Midpen shall implement the botanist's recommendations. Impacts to a special-status plant shall only occur if it is the botanist's professional opinion that the impact shall provide a long-term benefit to the plant (e.g., by eliminating non-native plants or another threat to the species). If Midpen is unable to implement the botanist's recommendations, or if there is uncertainty regarding the effects of a Program activity on the special-status plant population, Midpen shall assess subsequent effects on the plant population through post-activity monitoring. If the monitoring indicates the Program activity has negatively impacted the plant population, the compensatory mitigation terms of MM Biology-3 shall apply. If the monitoring indicates the effects were positive or neutral, no additional mitigation is required. • If Program activities are proposed to be conducted in habitat for a special-status plant, the activities shall be conducted during the phenological stage least sensitive to disturbance, based on guidance from the botanist. • If Program activities are proposed to be conducted in habitat for a special-status plant, and the work must be conducted when the plant is sensitive to disturbance (e.g., during the growing season), Midpen shall assume the plant could be permanently impacted and shall either: <ul style="list-style-type: none"> – 1a. Monitor the response of the plant post-construction. If the study indicates the Program activity has negatively impacted the plant population, the terms of MM Biology-3 shall apply. – 1b. Attempt to salvage any special-status plants that are permanently impacted by a Program activity (e.g., plants within a proposed discline). Salvaged plants (and seeds) shall be used for the compensatory mitigation required under MM Biology-3, and comply with best management measures intended to exclude <i>Phytophthora</i> and other plant pathogens to the extent possible. Any supplemental plants (or seeds) needed for a mitigation project, site rehabilitation, or other application shall be derived from locally appropriate genetic material and nurseries that comply with best management measures intended to exclude <i>Phytophthora</i> and other plant pathogens to the extent possible; or – 2. Provide compensatory mitigation in accordance with the terms of MM Biology-3. <p>General Minimization and Avoidance Measures</p> <p>Burn piles shall not be located within 50 feet of a special-status plant except those species that a qualified biologist/botanist or biological monitor working under a qualified biologist determines shall benefit from burning (e.g., Kings Mountain manzanita). Propane flaming shall not be conducted within the vicinity of special-status plants that could be accidentally damaged by the flaming activities. Vegetative debris shall not be placed on top of special-status plants, unless the biologist/botanist determines this is acceptable.</p> <p>MM Biology-3: Compensatory Mitigation for Impacts to Special-Status Plants</p> <p>Midpen shall provide compensatory mitigation for any special-status plant population that is permanently and negatively impacted by Program activities (i.e., could not be avoided or benefited through activities and subsequent monitoring determines an adverse effect to the population where a decline in the population is attributable to the Program activities, per MM Biology-2). Compensatory mitigation may be accomplished through habitat preservation, creation, restoration, or enhancement as determined appropriate by Midpen's qualified biologist/botanist or biological monitor working under a qualified biologist, in consultation with CDFW. All compensatory mitigation projects shall include a mitigation plan outlining the strategy, and the plan must be approved by CDFW, including identification of the success thresholds established depending on the population and site conditions.</p> <p>The compensation ratio for planting shall be no less than 3:1 (plants at mitigation site/plants at impact site). Under some circumstances a higher ratio may be needed, which shall be determined by Midpen's qualified biologist/botanist or biological monitor working under a qualified biologist, in consultation with CDFW.</p>	

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		<p>If habitat enhancement is selected, the compensation ratio shall be no less than 6:1. If possible, compensatory mitigation shall occur on lands under Midpen’s control. Mitigation sites on Midpen land shall include provisions for protecting them from impacts caused by other projects or programs (existing and future). Compensatory mitigation shall not be allowed on lands outside of Midpen’s control unless those lands have a legally enforceable mechanism that ensures they shall be protected and managed in perpetuity for the benefit of the target species (i.e., special-status plant requiring mitigation). Midpen shall hold responsibility for the success of mitigation projects conducted on lands outside of its control, unless mitigation is accomplished through an approved program (i.e., mitigation bank or in-lieu fee program).</p> <p>Midpen shall apply the monitoring methods outlined in the Monitoring Plan of the Program to monitor the success of compensatory mitigation projects. To account for natural variability in the size of plant populations, Midpen shall also monitor a nearby reference population. Midpen shall prepare annual monitoring reports that document the monitoring methods and results. Monitoring reports shall be submitted to CDFW. Monitoring of compensatory planting shall be conducted for at least 5 years. If after 3 years, monitoring has determined that the planting success standards are met, the report shall make this determination and monitoring may cease. Monitoring of compensatory habitat enhancement shall be conducted for at least 1 year, after which time if the success standards are met, no further monitoring is required.</p> <p>A mitigation project shall be considered successful if during the monitoring period, the qualified botanist or biological monitor working under a qualified biologist, determines the success threshold has been achieved. The success threshold may be adjusted downward commensurate with any decline observed at the reference population. For example, if a special-status species is detected in a planned work area, and Midpen is unable to reconfigure the treatment or treatment method to avoid impacts to the species, Midpen shall count the number of plants in the work area and at a nearby reference population. The compensation requirement shall be based on the number of plants impacted by the treatment, whereas the number of plants at the reference site shall serve as the baseline for evaluating natural fluctuations in the population. For example, if 100 plants of a given special-status species are located in the work area, the compensation requirement is 300 plants. However, if during the final 2 years of mitigation monitoring the reference population has 20 percent less plants than the baseline value, the threshold for success at the mitigation site shall also be 20 percent less (240 plants, assuming the success threshold was set to 300 plants).</p> <p>To facilitate the likelihood of success, Midpen shall:</p> <ul style="list-style-type: none"> • Ensure materials used for plant establishment (e.g. seed sources, container plantings) are sourced from genetically appropriate material and comply with best management measures intended to exclude <i>Phytophthora</i> and other plant pathogens to the extent possible. Container plants shall only be sourced from a nursery that complies with best management measures intended to exclude <i>Phytophthora</i> and other plant pathogens to the extent possible. • Maintain less than 10 percent cover of invasive plants at the mitigation site until the target species has successfully established. Thereafter, Midpen shall conduct invasive plant removal on an as-needed basis. • Implement measures (e.g., close restoration areas, install signage) to restrict public access within mitigation zones, at least until the target species has successfully established. • Conduct visual inspections of the mitigation site to identify any major problems (e.g., unauthorized trespass) requiring remedial actions. The frequency of visual inspections shall be commensurate with threats to the ecological integrity of the site. The site shall be inspected annually until the success criteria of the permitting agencies (e.g., CDFW) are met, after which the site shall be monitored in accordance with Midpen’s Monitoring Plan for the WFRP. <p>MM Biology-4: Invasive Plants and Soil Pathogens</p> <p>General Invasive Plant Measures</p> <p>In addition to Midpen’s standard invasive species practices under the IPMP (i.e., IPMP BMPs 11 through 18), Midpen shall implement the following invasive plant measures:</p> <ul style="list-style-type: none"> • Data on populations of invasive weed species in the work area and along access roads shall be collected and reviewed prior to implementation of the Program activity. Data shall include the distribution, abundance, and seral stage of invasive 	

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		<p>weed species. Pre-activity general surveys conducted according to MM Biology-1 shall be designed to detect all weeds on the CDFA noxious weed list, and Cal-IPC species with a rank of High and Moderate.</p> <ul style="list-style-type: none"> • Invasive weed species that occur within or immediately adjacent to the boundaries of proposed treatment areas shall be removed prior to the treatment—unless the treatment has been specifically designed to control or eliminate those species. For example, yellow star thistle removal shall not be required for a grazing treatment designed to control yellow star thistle. Midpen shall identify the appropriate disposal location for weeds that are removed. In determining the disposal location, Midpen shall assess the potential for spread of plant pathogens that might be present. • Schedule activities to maximize the effectiveness of control efforts and minimize introduction and spread of invasive plants (e.g., install and maintain fuelbreaks, disclines, and other VMAs before non-native plants set seeds). • Implement vegetation methods favorable to native plants. <p>Prescribed Fire and Planning Invasive Plant Measures</p> <ul style="list-style-type: none"> • A qualified biologist/botanist or biological monitor working under a qualified biologist shall evaluate the likely effects of a prescribed burn on invasive species in the proposed burn area based on the species that are known to occur in the area or that are found during the pre-activity survey (MM Biology-1). If the burn might promote spread of an invasive species, Midpen shall implement measures (e.g., manual treatments) to proactively reduce the threat or invasive species spread following the burn. • A qualified biologist/botanist or biological monitor working under a qualified biologist shall assess the effects of the burn to determine whether revegetation is needed in any areas to speed recovery of the desired plant community. • A qualified biologist/botanist or biological monitor working under a qualified biologist shall monitor vegetation recruitment on control lines. If vegetation recruitment is not on a trajectory for restoration of the impacted community, Midpen shall implement remedial measures such as planting or seeding. • An interdisciplinary team shall determine when activities (including conservation grazing and public access) may resume in burned areas. The team shall include natural resource staff knowledgeable about invasive plants. <p>General SOD and Soil <i>Phytophthoras</i> Measures</p> <p>Midpen shall implement the latest BMPs recommended by the California Oak Mortality Task Force (2020) and the Phytophthoras in Native Plant Habitats Work Group, as determined appropriate by the qualified biologist/botanist or biological monitor working under a qualified biologist.</p> <p>MM Biology-5: Invasive Plant Detection and Response</p> <p>Early Detection and Rapid Response</p> <p>Midpen shall conduct routine monitoring of work areas (e.g., VMAs, prescribed burn areas) in accordance with the Early Detection Rapid Response (EDRR) Protocol and the IPMP (generally every 3 to 5 years). If invasive or potentially invasive species are detected, Midpen shall conduct rapid response dependent upon the circumstances and according to the EDRR Protocol.</p> <p>Baseline Data and Reference Sites</p> <p>A Midpen-approved biologist/botanist shall select a reference site for each sensitive natural community affected by the Program. The reference site shall be on Midpen lands that are not directly or indirectly affected by Program activities. Prior to Program impacts in an area, an initial assessment shall be conducted to select a reference site that possess characteristics similar to the impact sites. If a suitable reference site does not exist and when feasible, Midpen shall collect 3 years of vegetation sampling data at the proposed impact site. Quadrat sampling shall occur for up to 5 years at a reference site, if located. This pre-impact or reference site data shall serve as the baseline for comparison with post-impact data.</p> <p>Sampling shall be conducted within quadrats at both the impacted site and reference sites. Quadrat sizes vary depending upon habitat type and shall be determined by the qualified botanist or biological monitor working under a qualified biologist, but typical sizes are 0.5 to 1 square meter for short grassland, 2 square meters for shrublands, and up to 20 square meters for</p>	

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		<p>woodlands. The qualified botanist or biological monitor working under a qualified biologist shall conduct power analysis to estimate the minimum number of quadrats needed to determine a statistically significant difference between the impact site and reference sites (at a significance level of 0.05 and a power level of 0.80). Quadrat sampling locations shall be randomly selected through use of a random number generator in GIS. Within each quadrat, absolute cover of plants shall be visually estimated and recorded for the quadrat as a whole and for each individual plant species using the California Native Plant Society's (CNPS's) method for estimating cover values (CNPS 2020). The CNPS method for estimating cover values uses a "bird's eye view," looking from above and estimating cover for the living plants only. Litter and duff shall not be included in these estimates, and the porosity of the vegetation shall be taken into consideration when estimating percent cover. Percent cover diagrams shall be used to facilitate cover estimates. All invasive species that are incidentally detected during sampling (but outside of the quadrats) shall be documented.</p> <p>Cover data shall be entered into a spreadsheet for analysis. Total cover, percent cover contributed by natives, total cover contributed by non-natives, and cover contributed by invasive weed species shall be calculated from these data.</p> <p>Success Criteria</p> <ul style="list-style-type: none"> • Eradication of invasive or potentially invasive species with a California Invasive Plant Council high rating or designated as noxious that were not detected during the baseline surveys. The target species is considered eradicated after 5 consecutive years with no observations of the target species. • Within 5 years of the impact, cover of non-native species is less than or equal to cover of non-native species at the reference sites. <p>MM Biology-6: San Francisco Garter Snake Protection Measures</p> <ul style="list-style-type: none"> • All practicable measures shall be taken to avoid killing or injuring San Francisco garter snake during Program activities. Any project-related, human-caused injuries to San Francisco garter snake shall be immediately reported to CDFW and USFWS. • Within riparian habitat or Waters of the State and/or U.S. and one (1) mile of a known San Francisco garter snake occurrence, Program activities shall be conducted consistent with permit terms and conditions of the current versions of the USFWS Recovery Permit Number: TE225974-2 and CDFW Memorandum of Understanding "Research and Recovery of San Francisco Garter Snake and California Tiger Salamander". • In suitable habitat where San Francisco garter snake has not been documented: <ol style="list-style-type: none"> a. Biological Awareness Training. A biological awareness training shall be provided in accordance with MM Biology-1. A biological monitor shall remain on-site in sensitive areas identified during the pre-survey. If at any time a San Francisco garter snake is observed, work shall stop immediately until a qualified biological monitor is contacted. Biological monitor(s) and/or qualified biologist(s) shall remain on the work area while initial ground disturbing activities are being conducted, after which biological monitor(s) and/or qualified biologists shall be on-call while Program activities are being conducted at these sites. b. Vegetation Removal by Mechanized Equipment. Mowing in areas of San Francisco garter snake habitat shall be conducted outside the peak San Francisco garter snake activity season as determined by a qualified biologist or biological monitor working under a qualified biologist (work typically occurs late October through mid-March or mid-June to end of August). The qualified biologist or biological monitor working under a qualified biologist shall precede the mowing equipment and inspect vegetation for San Francisco garter snake individuals. The mower head shall be kept at 6 inches above ground. Prior to use of a masticator or other heavy equipment in discrete areas with San Francisco garter snake habitat, vegetation shall be cut down to 3 inches by hand tools (weedwhacker, etc.). Once the ground is visible, a visual survey for San Francisco garter snake shall be conducted. If no sensitive species are found in the area, removal of vegetation may continue by mechanized equipment very slowly with a biological monitor walking in front of the equipment to observe. If a San Francisco garter snake is observed, all activities shall cease and Midpen shall coordinate with USFWS and CDFW 	

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		<p>immediately. Prior to the start of work, areas shall be identified by the biological monitor and approved by USFWS and CDFW as acceptable locations to which San Francisco garter snake may be relocated if these species are encountered within a work area. Relocation areas shall be a minimum of 100 feet from the boundary of any work area and shall not include staging areas or roads. No San Francisco garter snake shall be removed from the site or maintained in captivity overnight without prior notification and written approval by the USFWS and CDFW unless the animal is in need of emergency medical assistance. Medical assistance shall be provided to injured animals by a certified wildlife veterinarian familiar with amphibian and reptile care. When transporting individual San Francisco garter snake, precautions shall be taken to ensure that the animals are not over-stressed and are maintained in safety. Such measures include: keeping animals in a cool, dark, and safe location (snake bag for San Francisco garter snake), providing adequate hydration, maintaining a stable cool temperature to avoid over-heating, keeping animals isolated to prevent them from harming one another, and ensuring holding tanks or bags are kept clean to prevent the spread of any diseases.</p> <p>c. No Stockpiling of Vegetation. Viable vegetation removed shall be placed directly into a disposal vehicle and removed from the site. Vegetation shall not be piled on the ground unless it is later transferred, piece by piece, under the direct supervision of the biological monitor or qualified biologist or is going to remain on-site for erosion control or slash and not be moved or disturbed.</p> <p>d. For all work occurring within 50 feet of ponds, streams, and wetlands suitable for San Francisco garter snake, visual surveys shall be conducted by walking at least a 50-foot buffer area around the pond in an attempt to locate individual San Francisco garter snake no more than 24 hours prior to conducting work. A trained and permitted professional biologist shall capture, transfer, and release in a safe area any San Francisco garter snake deemed to be in danger of being harmed by Program activities. If an San Francisco garter snake is located during the pre-treatment surveys but escapes capture, the area where the snake was lost shall be marked by flag and a 50-foot (15 meter) radius shall be actively patrolled during the work. If necessary, individual San Francisco garter snake may be held in captivity in a pillowcase for less than 24 hours and may later be released near the point of capture after the work has been completed. After the pre-treatment survey, an avoidance strategy shall be devised and presented to all individuals involved in Program activities prior to the start of work. The number of San Francisco garter snake encountered and transferred to safe areas or held in captivity during treatment shall be reported to USFWS, and each individual snake shall be photographed for use in identification.</p>	
		<p>MM Biology-7: California Red-Legged Frog Protection Measures</p> <p>Handling of California Red-legged Frog</p> <p>Handling of California red-legged frog will be done by permitted and qualified biologists or biological monitor working under a qualified biologist in an expedient manner with minimal harm to the individuals being handled. Handling of California red-legged frog will be done with wet hands. The hands and arms of all workers handling California red-legged frog will be free of lotions, creams, sunscreen, oils, ointment, insect repellent, or any other material that may harm California red-legged frog. Larval California red-legged frog will not be handled out of the water for longer than 30 seconds unless rewetted and will not be retained for longer than 5 minutes for processing. If captured California red-legged frog exhibit signs of distress (e.g., lack of response to stimuli or erratic behavior), they will be immediately released at the point of capture. All captured California red-legged frog will be released at the point of capture unless that location puts them in imminent danger, in which case they will be placed in a nearby refugium sufficient to protect them. The number of California red-legged frog to be captured is no more than 30 adults per habitat location (defined as the area that specific work is conducted such as a pond site or OSP) per year. In the course of monitoring associated with the activities, if California red-legged frog egg masses are observed in ponds or wetted areas that are going to dry naturally before tadpoles develop (as determined by a qualified biologist or biological monitor working under a qualified biologist), emergency salvage of egg masses by the qualified biologist or biological monitor working under a qualified biologist is permitted to relocate egg masses into deeper waters that will not be</p>	

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		<p>affected by the proposed activities. USFWS shall be notified of the emergency salvage per the terms of the recovery permit. Amplexing pairs of California red-legged frog will not be captured, handled, or disturbed. The permittee will disinfect sampling and field gear to minimize the spread of pathogens as follows:</p> <ol style="list-style-type: none"> 1. Sampling and field gear will be disinfected after exiting one aquatic habitat and before entering the next aquatic habitat, unless the waters are hydrologically connected to one another. 2. All organic matter will be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with water or potentially contaminated sediments. These items will then be rinsed with clean water before leaving each study site. 3. Boots, nets, traps, hands, etc., will be scrubbed with a bleach solution (0.5 to 1.0 cup per 1.0 gallon of water), Quat-128™ (1:60), or a 3 to 6 percent sodium hypochlorite solution and thoroughly rinsed clean with water between study sites. Equipment will be rinsed clean with water between study sites. Cleaning equipment in the immediate vicinity of aquatic habitats will be avoided (e.g., clean in an area at least 100 feet from aquatic features). Care will be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat. 4. Used cleaning materials (liquids, etc.) will be disposed of safely, and if necessary, taken back to the lab for proper disposal. Used disposable gloves will be retained for safe disposal in sealed bags. <p>California red-legged frog will not be removed from the wild and held in captivity for any reason unless prior written approval is acquired by the appropriate USFWS Office or unless the severity of an injury to the California red-legged frog obviates immediate care. Animals will be transported according to accepted methods, in moist cloth bags or in terrarium with moisture gel or non-cellulose sponge to minimize desiccation.</p> <p>Protocols for California Red-legged Frog Depending Upon Location of Activity</p> <p>For activities conducted within riparian habitat or Waters of the State and/or U.S. and 1 mile of a known California red-legged frog occurrence:</p> <ul style="list-style-type: none"> • Prior to and within 48 hours of the planned start of Program activities, a focused survey for California red-legged frog using an agency approved protocol will be conducted by a qualified biologist or biological monitor working under a qualified biologist to determine if they are in the area. If California red-legged frog are found, Midpen will coordinate with CDFW and USFWS immediately to determine the correct course of action and Program activities at that location will not commence until after May 30 or authorized by CDFW and USFWS. • If California red-legged frog are found, biological monitor(s) and/or qualified biologists will be on site while Program activities are being conducted. Midpen will implement the following measures: <ol style="list-style-type: none"> a. Inspection of Parked Vehicles: Any vehicle parked on-site for more than 15 minutes will be inspected by the biological monitor or qualified biologist before it is moved to ensure that California red-legged frog has not moved under the vehicle. Any parking areas must be checked in advance by the biological monitor or qualified biologist. b. Vegetation Removal by Mechanized Equipment at California Red-legged Frog Sensitive Sites (areas within or adjacent to wetted aquatic sites): For vegetation removal on berms or other wetted sites with known California red-legged frog observations, vegetation will be cut down to 3 inches by hand tools (weedwhacker, etc.). Once the ground is visible, a visual survey for California red-legged frog will be conducted. If no sensitive species are found in the area, removal of vegetation may continue by mowing or mechanized equipment very slowly with a biological monitor walking in front of the equipment to observe. If a California red-legged frog is observed that is in harm's way, all activities shall cease and Midpen will notify CDFW and USFWS immediately or the California red-legged frog can be relocated by a person permitted by the USFWS and approved by CDFW for this project to handle California red-legged frog. c. Vegetation Disposal: Vegetation removed shall be placed directly into a disposal vehicle and removed from the site. Vegetation shall not be piled on the ground unless it is later transferred, piece by piece, under the direct supervision of the biological monitor or qualified biologist or is going to remain on-site for erosion control or slash and not be moved or disturbed. 	

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		<p>d. No Stockpiled Soil: Soil shall not be stockpiled on the ground unless it is on a paved surface or staging area where there are not burrows. Soils stockpiled for more than a single day near potential habitat should be covered or surrounded by exclusion fencing as directed by a qualified biologist to prevent burrowing animals from entering the stockpile.</p> <p>e. California Red-legged Frog Exclusion for Sediment Removal with Large Equipment: California red-legged frog will be excluded from the project site prior to Program activities at sites involving the use of large equipment for sediment removal. USFWS and CDFW-approved exclusion fencing will be installed around the sediment removal site, staging areas, and any areas where fill may be dumped. After installation of the fence barrier, a biological monitor or qualified biologist will inspect the project work area, staging and stockpiling areas daily prior to the commencement of activities. If the biological monitor or qualified biologist determines that sensitive species are not within the work area, equipment or materials may be moved into the project site and Program activities may commence under the observation of the biological monitor.</p> <p>For activities conducted in ponds:</p> <ul style="list-style-type: none"> • Focused Surveys Prior to Work Activities. Prior to and within 48 hours of the planned start of Program activities, a focused survey for California red-legged frog using agency approved protocol will be conducted by a qualified biologist or biological monitor working under a qualified biologist to determine if California red-legged frog is in the area. The pond will be sampled by a qualified biologist to ensure that all California red-legged frog from that pond are in the post metamorphic stage and will be minimally affected by draining the pond. If a California red-legged frog is located during the pre-treatment surveys but escapes capture, the area where the frog was lost will be marked by flag and a 50-foot (15 meter) radius will be actively patrolled during the work. If California red-legged frog are found, Midpen will coordinate with CDFW and USFWS immediately to determine the correct course of action and Program activities at that location will not commence until after May 30 or authorized by CDFW and USFWS. After the pre-project survey, an avoidance strategy will be devised and presented to all individuals involved in the pond enhancement prior to starting any activities. The number of California red-legged frog encountered and transferred to safe areas or held in captivity by a permitted and qualified biologist during treatment will be reported to the Sacramento USFWS Office and CDFW. • Number of On-Site Biologists. The minimum number of qualified biological monitors required at each pond site will be determined in advance by either the ranch manager or a permitted biological consultant based on pond size, the amount and complexity of work to be performed, and the equipment to be used. This number of monitors will be approved by USFWS prior to the start of any work. • Travel Corridors. Corridors for travel of vehicles and heavy machinery to the pond site will be established at least 24 hours in advance of the proposed work. Corridors that are not established, marked, and improved roads (paved or unpaved) require special consideration for use by any vehicle. During the use of these off-road corridors by vehicles and machinery, a monitor shall proceed directly before the vehicle or machinery to ensure all California red-legged frog and observable wildlife is cleared from the pathway of the oncoming vehicle. Monitors shall signal vehicles to stop if a California red-legged frog is on the pathway, and shall allow the animal to clear the pathway by its own direction. Any handling of the red-legged frog must only be done by a qualified permitted individual. Measures shall be taken to minimize the number of vehicles allowed on the property. All vehicles involved with the site-specific work that are not transported to the work site will be retained in a prearranged, marked parking area in a clearing as close to the main road as possible. At least one monitor will ensure wildlife is clear from the parking area while vehicles are arriving and leaving. All vehicles must stay on designated roads. • Seasonal Work Period in Ponds. If California red-legged frog are found in the pond and water is present in the pond, sediment removal and berm or outfall repair activities shall be performed from August 15 to November 1. Midpen will coordinate with CDFW and USFWS prior to dredging or de-watering activities. Sediment will be removed from ponds by hand to the extent feasible. Sediment removal from ponds will occur as soon as the ponds are dry (if prior to August 15). • Vegetation Removal at Ponds. If California red-legged frog is found, tule and emergent vegetation will be removed by hand when feasible. If mechanized equipment is used, one or more biological monitors or qualified biologists will be onsite 	

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		<p>monitoring the scoop bucket while scooping and watching each load unload. Midpen will coordinate with CDFW and USFWS during the annual project notification process regarding anticipated mechanized equipment use for vegetation removal at ponds. In areas where egg masses are known, Midpen and contractor personnel will not enter the channel/pond to avoid dislodging egg masses. Trimming activities shall be performed from the banks, if possible.</p> <ul style="list-style-type: none"> • Inspection for Egg Masses. In work areas containing emergent vegetation (e.g., tules, cattails), vegetation will be inspected for California red-legged frog eggs masses prior to Program activities. If work cannot be postponed, a buffer of vegetation at least 10 feet in diameter shall be left around any egg masses found. Midpen will keep a record of sites where egg masses are found and conduct vegetation removal at these sites prior to November 1 in subsequent years. <p>If California red-legged frog is not found during the focused survey, or for activities conducted in suitable habitat where California red-legged frog has not been documented:</p> <ul style="list-style-type: none"> • The biological monitor shall remain on-site if sensitive areas are identified during the presurvey. A biological awareness training shall be provided to all persons prior to beginning work. If at any time a California red-legged frog is observed, work shall stop immediately until a biological monitor is contacted. Biological monitor(s) and/or qualified biologists shall then remain on the project site while Program activities are being conducted. If California red-legged frog is observed, the applicable California red-legged frog measures procedures described above will be followed. <p>General California Red-legged Frog Avoidance Measures</p> <ul style="list-style-type: none"> • If California red-legged frog enters the project area, all work shall stop until the animal leaves on its own. If a person is permitted by the USFWS and approved by CDFW for this specific project to handle California red-legged frog, they can handle and relocate California red-legged frog. Midpen will coordinate with CDFW and USFWS to develop site appropriate avoidance measures utilized for relocation. Prior to the start of work, areas will be identified by the biological monitor-in-charge and approved by the USFWS and CDFW as acceptable locations to which California red-legged frog may be relocated if these species are encountered within a work area. Relocation areas will be a minimum of 500 feet from the boundary of any work area and will not include staging areas or roads. No California red-legged frog will be removed from the site or maintained in captivity overnight without prior notification and written approval by the USFWS and CDFW unless the animal is in need of emergency medical assistance. Medical assistance will be provided to injured animals by a certified wildlife veterinarian familiar with amphibian and reptile care. When transporting individual California red-legged frog, safe handling precautions will be taken to ensure that the animals are not over-stressed. Safe handling measures include: keeping animals in a cool, dark, and safe location (terrarium for California red-legged frog), providing adequate hydration, maintaining a stable cool temperature to avoid over-heating, keeping animals isolated to prevent them from harming one another, and ensuring holding tanks or bags are kept clean to prevent the spread of any diseases. • All practicable measures shall be taken to avoid killing or injuring any life stage of California red-legged frog during habitat enhancement activities. • The biological monitor and/or qualified biologist shall have the authority to halt work activities that may affect California red-legged frog adults, tadpoles or egg masses until they can be moved out of harm's way. • Any project-related, human caused injuries to California red-legged frog will be immediately reported to CDFW and USFWS. <p>MM Biology-8: Foothill Yellow-Legged Frog Protection Measures</p> <p>If foothill yellow-legged frog are found during the general survey conducted per MM Biology-1, biological monitor(s) and/or qualified biologists shall remain in the work area while Program activities are conducted.</p> <p>For activities conducted within riparian habitat or Waters of the State and/or U.S. and 1 mile of a known foothill yellow-legged frog occurrence (within the last 20 years):</p> <ul style="list-style-type: none"> • Information on foothill yellow-legged frog shall be included in the biological awareness training provided in accordance with MM Biology-1. 	

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • Any vehicle parked on-site for more than 15 minutes shall be inspected by the biological monitor or qualified biologist before it is moved to ensure that foothill yellow-legged frog have not moved under the vehicle. Any parking areas must be checked in advance by the biological monitor or qualified biologist. Vehicles shall not be moved if a frog is found, until the frog has moved out of harm’s way as determined by the biological monitor or qualified biologist. • For vegetation removal at sites with known foothill yellow-legged frog observations, vegetation shall be cut down to 3 inches by hand tools (weedwhacker, etc.). Once the ground is visible, a visual survey for foothill yellow-legged frog shall be conducted. If no sensitive species are found in the area, removal of vegetation may continue by mowing or mechanized equipment very slowly with a biological monitor walking in front of the equipment to observe. If a foothill yellow-legged frog is observed, all activities shall cease and Midpen shall notify CDFW immediately. Foothill yellow-legged frog can only be relocated by an individual permitted by CDFW for this Program to handle foothill yellow-legged frog. • Vegetation that is to be removed shall be placed directly into a disposal vehicle and removed from the site. Vegetation shall not be piled on the ground unless it is later transferred, piece by piece, under the direct supervision of the biological monitor or qualified biologist or is going to remain on-site for erosion control or slash and not be moved or disturbed. <p>MM Biology-9: Western Pond Turtle Protection Measures</p> <p>Within riparian habitat or Waters of the State and/or U.S. and 1 mile of a known western pond occurrence:</p> <ul style="list-style-type: none"> • Information on western pond turtle shall be included in the biological awareness training provided in accordance with MM Biology-1. • A focused survey for western pond turtle and western pond turtle nests shall be conducted prior to and within 48 hours of the planned start of Program activities by a qualified biologist or biological monitor to determine if any individuals are in the area. • In the event western pond turtle are found in the work area, Midpen shall exercise measures to avoid direct injury to western pond turtle as well as avoid areas where they are observed to occur. • If a western pond turtle is observed during the Program activity, it shall be left alone to move out of the area on its own. If it does not move on its own, it can be relocated to a safe location at least 100 feet away from the work area. Relocation areas shall be of suitable habitat, on shallow banks with slow moving water and shall be far enough away so as not to be affected by Program activities. • If a western pond turtle nest was not found during focused surveys but is observed after initiation of Program activities and its habitat is determined to be unavoidable, all activities shall cease and Midpen shall coordinate with CDFW to develop site-appropriate avoidance and minimization measures. <p>MM Biology-10: California Giant Salamander, Santa Cruz Black Salamander, and Red-Bellied Newt Protection Measures</p> <ul style="list-style-type: none"> • In primary suitable habitat where Santa Cruz black salamander, California giant salamander, or red-bellied newt were observed or are known to occur: • Information on these species shall be included in the biological awareness training provided in accordance with MM Biology-1. • A qualified biologist and biological monitor shall be available and on-call for the duration of Program activities. • A biological monitor shall be present on-site when working within 50 feet of wetted areas including stream channels, seeps, and springs. • For Santa Cruz black salamander only, a biological monitor is also required in areas of talus slopes or areas having human stacked rocks and other suitable materials acting as talus. • Work in wetted areas, talus slopes, or human stacked rocks or other suitable materials acting as artificial talus should be completed prior to July to avoid displacement of Santa Cruz black salamander females laying eggs and attending to clutches. 	

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • Dismantling of talus and human-stacked rocks and other suitable materials acting as artificial talus shall be avoided and minimized whenever possible. If removal is required to meet project objectives, these materials shall be dismantled by hand whenever possible. • Whenever possible, individual Santa Cruz black salamander, California giant salamander, and red-bellied newt shall be allowed to leave the area on their own. • Individual Santa Cruz black salamander, California giant salamander, or red-bellied newt (not with eggs) that are in harm's way or do not leave the work site on their own may be relocated by a qualified biologist or biological monitor to predetermined sites located outside of the work area but within the same subwatershed. • If heavy equipment is required to remove talus, human stacked rocks or other suitable materials acting as artificial talus, this shall be done in the presence of a qualified biological monitor. • If at any time, Santa Cruz black salamander, California giant salamander, or red-bellied newt eggs are found, the area shall be flagged for avoidance. If the area cannot be avoided to meet Program objectives, Midpen shall coordinate with CDFW to determine the best course of action. • In all other areas of suitable habitat for Santa Cruz black salamander, California giant salamander, and red-bellied newt: • Information on these species shall be included in the biological awareness training provided in accordance with MM Biology-1. • A qualified biologist and biological monitor shall be on-call with suitable availability to respond to calls for the duration of Program activities. • A pre-survey of the work area is required prior to starting work. If no Santa Cruz black salamander, California giant salamander, or red-bellied newt are observed, work may proceed. • If an individual Santa Cruz black salamander, California giant salamander, or red-bellied newt are observed at any time, all activities shall stop and the biologist and/or biological monitor shall be notified and the above measures shall be implemented. <p>MM Biology-11: Nesting Bird Protection Measures (With the Exception of Marbled Murrelet)</p> <ul style="list-style-type: none"> • Implement IPMP BMP 22 with the additional provisions listed here. • To avoid potential impacts to nesting birds, all Program activities shall be conducted between September 1 to February 14 unless a preconstruction nesting bird survey has been conducted by a qualified biologist or biological monitor. Work should be done during the non-breeding season whenever possible. The bird nesting seasons for smaller birds and raptors are defined per IPMP BMP 22 as follows: <ul style="list-style-type: none"> – March 15 to August 30 for smaller bird species such as passerines; and – February 15 to August 30 for raptors. – Earlier surveys may be needed for specific species such as owls, hummingbirds, herons and egrets and/or other species if nesting activity shifts due to climate change, as determined by a qualified biologist or biological monitor working under a qualified biologist. • If Program activities are scheduled during the nesting season of raptors and/or migratory birds, a focused survey for active nests of such birds shall be conducted by the qualified biologist or biological monitor within 15 days prior to the beginning of project-related activities. Surveys shall be conducted in all suitable habitat located at work areas and in staging and storage areas. The minimum survey radius for each bird type surrounding the work area shall be the following: <ul style="list-style-type: none"> – 250 feet for passerines; – 500 feet for other small raptors such as accipiters; – 1,000 feet for larger raptors such as buteos and eagles. 	

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation															
		<ul style="list-style-type: none"> - The bird survey methodology and the results of the survey shall be submitted to the CDFW prior to commencement of Program activities. • If an active nest (i.e., a nest having eggs or chicks present, or a nest that adult birds have staked a territory and are displaying, constructing a nest, or are repairing an old nest) is found and work cannot be postponed, Midpen shall designate active nest sites as "Ecologically Sensitive Areas" and protected (while occupied) during Program activities with the establishment of flagging or a fence barrier surrounding the nest site. No trees or shrubs that contain active bird nests shall be disturbed until all eggs have hatched, and young have fully fledged (are no longer being fed by the adults, and have completely left the nest site). No habitat removal or modification shall occur within the Ecologically Sensitive Area fenced nest zone even if the nest continues to be active beyond the typical nesting season for the species, until the young have fully fledged and shall no longer be adversely affected by the Program. The minimum distances of the protective buffers surrounding each identified nest site shall be the following per IPMP BMP 22, with some considerations depending on nest location and substrate: <ul style="list-style-type: none"> - 500 feet for large raptors such as buteos; - 250 feet for small raptors such as accipiters; - 250 feet for passerines; and - 1,000 feet for eagles. • A biological monitor or qualified biologist shall monitor the behavior of the birds (adults and young, when present) at the nest site to ensure that they are not disturbed by Program-related activities. Nest monitoring shall continue during Program-related construction work until the young have fully fledged, are no longer being fed by the parents and have left the nest site and surrounding area, as determined by a biological monitor. If a protective buffer must be modified, Midpen shall coordinate with the CDFW and/or the USFWS as appropriate prior to resumption of Program activities. • If a lapse in Program-related work of 15 days or longer occurs, another focused survey shall be conducted before Program activities are reinitiated. <p>MM Biology-12: Marbled Murrelet Nest Protection Measures</p> <ol style="list-style-type: none"> a. Implement IPMP BMP 22 with the additional provisions listed here. b. In areas within the range of marbled murrelet habitat as identified in the Midpen 2007 maps, Midpen shall conduct a survey of habitats within 0.25-mile of the work area for trees that meet the Pacific Seabird Group definition of potential marbled murrelet nesting trees. If such trees are present within 300 feet of the work area or if a marbled murrelet nest is detected, Midpen shall coordinate with CDFW and USFWS before proceeding. If habitat trees are present within 0.25-mile of the work area but are greater than 300 feet from the work area, Midpen shall implement the following conditions: c. Work within the work area shall be confined to the period of September 15 to November 1 when possible. d. If activities cannot be conducted outside the breeding season, and must occur during the marbled murrelet breeding season (March 24 to September 15) Midpen shall: <ol style="list-style-type: none"> i. Coordinate with CDFW and USFWS. ii. Implement seasonal disturbance minimization buffers as listed in the table below and in the July 26, 2006 document, Estimation of the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California (table below). 																
		<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr style="background-color: #e0f2f1;"> <th style="text-align: center;">Existing Pre-Program (Ambient) Sound Level^a</th> <th colspan="4" style="text-align: center;">Anticipated Action Generated Sound Level^b</th> </tr> <tr style="background-color: #e0f2f1;"> <th></th> <th style="text-align: center;">Moderate (71-80 dB)</th> <th style="text-align: center;">High (81-90 dB)</th> <th style="text-align: center;">Very High (91-100 dB)</th> <th style="text-align: center;">Extreme (101-110 dB)</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Existing Pre-Program (Ambient) Sound Level ^a	Anticipated Action Generated Sound Level ^b					Moderate (71-80 dB)	High (81-90 dB)	Very High (91-100 dB)	Extreme (101-110 dB)						
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Impact Description	Level of Significance Before Mitigation	Mitigation Measure				Level of Significance After Mitigation
	Natural Ambient (<=50 dB)^c	165 feet	500 feet	1,320 feet	1,320 feet	
	Very Low (51-60 dB)	40 feet	330 feet	825 feet	1,320 feet	
	Low (61-70 dB)	40 feet	165 feet	825 feet	1,320 feet	
	Moderate (71-80 dB)	40 feet	165 feet	330 feet	1,320 feet	
	High (81-90 dB)	40 feet	165 feet	165 feet	500 feet	

Notes:

- ^a Existing (ambient) sound level includes all natural and human-induced sounds occurring at the work area prior to the proposed action, and are not causally related to the proposed action.
- ^b Action-generated sound levels are given in decibels (dB) experienced by a receiver, when measured at 15.2 m from the sound source.
- ^c "Natural Ambient" refers to sound levels generally experienced in habitats not substantially influenced by human activities.

- iii. Conduct a sound level monitoring study to determine the level of ambient and construction activity noise anticipated during construction activities to calculate seasonal disturbance minimization buffer widths. Midpen shall provide a description of methods and results of the study to USFWS and CDFW to coordinate site-specific avoidance measures 30 days prior to commencement of Program activities at the applicable location(s). In order to alert work crews to their presence, marbled murrelet seasonal disturbance buffers, as determined by the sound study and table above, shall be flagged in the field where they enter the work area. If Midpen chooses not to conduct the sound study, no Program activities shall occur within 0.25-mile of potential nest trees during the marbled murrelet breeding season (March 24 to September 15).
- iv. If noise generating construction activity takes place during the breeding season (March 24 to September 15) within suitable Redwood and Redwood/Douglas-fir forests, construction activities shall be restricted to 2 hours after sunrise to 2 hours before sunset to minimize disturbance of potential nesting marbled murrelet using forest habitat as a travel corridor between inland nesting and coastal habitat.
- v. Midpen or its contractor shall not conduct Program activities within a visual line-of-sight distance of 40 meters or less from a suitable nest tree as designated by a qualified biologist or biological monitor.
- e. If marbled murrelet protocol level surveys are conducted and do not indicate that the habitat is occupied by marbled murrelet, the seasonal and distance work restrictions may be lifted with approval from CDFW and USFWS. Protocol level survey procedures and information can be found at: http://www.pacificseabirdgroup.org/publications/PSG_TechPub2_MAMU_ISP.pdf. If Midpen chooses to conduct marbled murrelet protocol level surveys, Midpen shall coordinate with CDFW and USFWS regarding the survey stations to ensure all contiguous suitable habitat is covered and good visuals of the sky and nearby flyways, if present, are provided. If marbled murrelet protocol level surveys are conducted, Midpen shall submit the report consistent with *Methods for Surveying Marbled Murrelets in Forests: A Revised Protocol for Land Management and Research*.

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<p>MM Biology-13: Special-Status Insect Host Plant Protection</p> <ul style="list-style-type: none"> • Prior to conducting treatments in suitable habitat for special-status butterfly and moth species, surveys shall be conducted for the following host plant species during the appropriate blooming period: <ul style="list-style-type: none"> – Bay checkerspot butterfly: dwarf plantain (<i>Plantago erecta</i>), purple owl's clover (<i>Castilleja densiflora</i>), and exserted paintbrush (<i>Castilleja exserta</i>). – Smith's blue butterfly: coast buckwheat (<i>Eriogonum latifolium</i>) and seacliff buckwheat (<i>Eriogonum parvifolium</i>) – Monarch butterfly: all milkweeds (<i>Asclepias</i> sp.) – Unsilvered fritillary butterfly: violets (<i>Viola</i> sp.) – Opler's longhorn moth: California cream cups (<i>Platystemon californicus</i>) – Callippe silverspot butterfly (not known to be present but the host plant has potential to be present): Johnny Jump up (<i>Viola pedunculata</i>) • Host plants containing eggs, larvae, or pupae of special-status butterfly or moth species shall be avoided, and shall be protected with an appropriately-sized buffer as determined by a qualified biologist, taking into account the characteristics of the plant species and the nature of the proposed treatment. • Vegetation treatment may proceed if a qualified biologist determines that the host plants (1) are not occupied by special-status butterflies or moths, and (2) may benefit from treatment (such as if the host plants have already set seed and post-treatment conditions will favor them over non-native weed species). <p>MM Biology-14: Salmonid Protection Measures</p> <ul style="list-style-type: none"> • Vegetative debris shall not be stockpiled in areas where it could enter a stream, wetland or riparian area. • Corrective actions, such as repairs to erosion control BMPs necessary to preserve water quality and revegetation activities, are allowable year-round. • Seasonal Work Period in Salmonid Critical Habitat: Program activities within streams and associated riparian corridors that are designated Critical Habitat for steelhead and Coho salmon shall be limited to June 15 to October 31. • Seasonal Work Period in Aquatic Habitats Outside of Critical Habitat. Program activities within streams and associated riparian corridors that are not designated Critical Habitat for salmonids shall be limited to April 15 to October 31, or are permissible from November 1 to April 14 under the following conditions: <ol style="list-style-type: none"> a. Work shall not occur until the site has received no rainfall for a period of 10 days and there is no rain in the forecast for a period of 7 or more days, and work requires no greater than 5 days to complete. b. Work started during this period must be at least 50 percent complete within 2.5 days of beginning work. c. Winterization materials must be on hand and installed if unanticipated rainfall begins (defined as 0.5 inches of rain in a 24-hour period). <p>MM Biology-15: Monarch Butterfly Overwintering Aggregation Protection</p> <p>Prior to any Program activities in tree groves comprised primarily or entirely of pine, cypress, fir, or eucalyptus that are within 2 miles of the Pacific Coast, a qualified biologist or biological monitor working under a qualified biologist shall survey the grove for aggregations of monarch butterflies during the overwintering season according to the Xerces Society's Western Monarch Count Protocol (Xerces Society 2019), available at https://www.westernmonarchcount.org:</p> <p>Two surveys shall be conducted during the overwintering season, one during the Western Monarch Thanksgiving Count period (the three-week period centered on the Thanksgiving holiday), and a second during the New Year's Count period (the two-week period beginning the weekend prior to New Year's Day).</p> <ul style="list-style-type: none"> • Each survey shall be conducted by two surveyors to provide multiple independent estimates of monarch numbers. 	

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • Surveys shall be conducted in the morning while temperatures are below 55° F (13° C) and monarchs are more likely to be clustered. • Surveys shall not be conducted during rain or strong winds due to poor visibility and the chance that individual monarchs shall be scattered on the ground. • If no monarch overwintering aggregations are observed, Program activities may proceed pursuant as long as they occur prior to November 1. If Program activities are delayed beyond November 1, then the grove shall be re-surveyed. • If a monarch overwintering aggregation of any size is detected, then no Program activities may take place inside the tree canopy within 200 feet of the aggregation, when present. Activities outside of the canopy line but within 200 feet may proceed (i.e., treatment of low-growing vegetation outside of the tree grove) if a qualified biologist or monitor determines that the activity does not pose a threat to the monarch aggregation. • Once the aggregation disperses (typically by March), treatment of vegetation within 200 feet of tree(s) where monarch aggregations were observed may proceed if, as determined by a qualified biologist or monitor, it shall not result in significant alteration to wind and sunlight patterns within the grove. • If monarch overwintering aggregations are detected in eucalyptus removal areas, then a long-term tree planting strategy is necessary (see <i>Protecting California's Butterfly Groves</i> [Xerces Society 2017]). • Native tree species suitable for monarchs must be planted many years prior to eucalyptus removal with the understanding that they may not reach functional heights to provide wind protection and suitable dappled lighting for 15-30 years. Transplanting saplings from a local source may speed this process. Planting of eucalyptus shall be prohibited. Removal of eucalyptus may proceed once native replacement trees have reached sufficient size to provide wind protection within the grove. • Standing dead trees generally do not contribute to monarch overwintering habitat (Xerces Society 2017) and may be removed within the grove between April 1 and August 31, outside of the overwintering period, as determined appropriate by a qualified biologist or monitor. Sites where invasive dead trees have been removed may create opportunities for native tree planting within the interior of the grove. • If a eucalyptus grove where a monarch overwintering aggregation was previously detected is re-surveyed using the Western Monarch Count Protocol (Xerces Society 2019) and found to be unoccupied for 5 consecutive years, then the grove may be removed before native replacement trees have reached full size. 	
		<p>MM Biology-16: Prescribed Burns and Biological Resource Avoidance</p>	
		<ul style="list-style-type: none"> • All participants in the burn shall be briefed by a Resource Advisor on the special-status species potentially present, where they would likely be found, and who to contact if one is sighted. Resource Advisors shall (1) work with the ignition teams, (2) be a part of any ignition sequence planning, and (3) be in radio contact with either the Ignition Specialist or the Incident Commander directly to ensure quick communication and decision-making regarding the safety of sensitive wildlife. • Prescribed burns shall maintain the following buffers from various sensitive species and wildlife habitats: <ul style="list-style-type: none"> – Active bird nests shall be given species-appropriate buffers matching those outlined in MM Biology-11 and IPMP BMP 22: <ul style="list-style-type: none"> i. 250 feet for passerines ii. 500 feet for other small raptors such as accipiters iii. 1,000 feet for larger raptors such as buteos and eagles – A 10-foot buffer from San Francisco dusky-footed woodrat nests – A 20-foot buffer from occupied bat roosting trees – A 10-foot buffer from patches of special-status butterfly and moth host plants if prescribed burns occur before the plants have set seed. Patches of host plants that may benefit from fire may be burned if determined appropriate by a qualified biologist or biological monitor working under a qualified biologist. 	

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • The listed buffer areas may be managed using other vegetation management techniques following each burn (e.g., cattle grazing), but are to remain completely undisturbed during prescribed fire events. Every reasonable attempt shall be made to maintain 0.25 to 0.5 acre (0.1 to 0.2 hectare) of unburned habitat for every 10 acres (4 hectares) of burned habitat (e.g., 4 to 8 acres of retreat habitat are needed for a 160-acre burn, and 9 to 18 acres are needed for a 350-acre burn). Retreat areas shall be conserved randomly throughout the treatment area, especially in areas with known populations of San Francisco garter snake and California red-legged frog. These retreat areas may be naturally occurring areas such as rock formations, ponds and other wetland/riparian areas, areas with a high density of burrows, and other areas not prone to burn, or these areas may be created and maintained using hand tools or water to create fire-breaks or wet-lines. • No more than 24 hours prior to conducting prescribed fires, visual surveys shall be conducted by walking transects throughout the proposed burn area in an attempt to locate individual special-status reptile and amphibian species, including San Francisco garter snake, California red-legged frog, foothill yellow-legged frog, California tiger salamander, western pond turtle, Blainville’s horned lizard, California giant salamander, Santa Cruz black salamander, and red-bellied newt. With permission from CDFW and/or USFWS, a permitted biologist or biological monitor shall capture, transfer, and release in a safe area any special-status reptiles or amphibians deemed to be in danger of being harmed by the prescribed fire activities. If individuals are located during the pre-treatment surveys but escape capture, an area approximately 50 feet (15 meters) in diameter around the individual shall be protected from the burn. If necessary, individuals may be held in captivity in a pillowcase for less than 24 hours and may later be released near the point of capture after the burn has been completed. The numbers of special-status reptiles and amphibians encountered and transferred to safe areas or held in captivity during treatment shall be reported to USFWS and CDFW. If San Francisco garter snakes are captured, each individual shall be photographed for use in identification. • All vehicles involved with the site-specific burn shall be retained in a prearranged, marked parking area in a clearing as close to the main road as possible. At least one monitor shall ensure wildlife is clear from the parking area while vehicles are arriving and leaving. All vehicles must stay on designated roads, and if it is necessary for a vehicle to travel off the designated main road, a monitor shall precede the vehicle to clear wildlife from the pathway of the vehicle. Only biological monitors specifically authorized by the USFWS and CDFW to handle San Francisco garter snake or California red-legged frog (normally these shall be individuals holding a federal recovery permit for the species) shall be allowed to handle, transport, and relocate individuals of these species. • Below ground temperature monitoring shall be conducted during the burn to monitor air temperatures in a representative subset of suitable San Francisco garter snake refugia. One or more biologists or biological monitors shall place ground temperature monitoring devices (e.g. "hobo thermocouples" in rodent burrows throughout the burn area to monitor changes in temperature in the burrows as fire moves across the landscape. The knowledge gained shall be useful in determining how to conduct future prescribed fires in San Francisco garter snake habitat in a manner that shall minimize potential effects to the species. • Immediately following each prescribed fire, the permittee shall search the affected post-treatment area to identify dead or injured individuals of all vertebrate taxa. Dead individuals of special-status species shall be collected and deposited at an approved repository. Injured individuals shall be handled only by a permittee authorized to capture and handle the species. Midpen shall ensure medical assistance is provided to injured animals by a certified wildlife veterinarian familiar with amphibian and reptile care. • Prescribed fire shall not be employed in tidal marsh habitats. • If an emergency situation necessitates the use of water from a pond occupied by California red-legged frog, a striker pump and intake hose may be used to draw water from one of the small wetland ponds in the burn area to fill engines or back pumps. The intake hose shall be screened with 0.25-inch mesh to prevent intake of California red-legged frogs. The burn plan details the use of lake and ocean water to fill helicopter buckets to aid suppression efforts. If a helicopter bucket is used, it shall draft from the center of the pond, to prevent uptake of California red-legged frogs that may potentially be present. 	

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
<p>Impact Biological Resources-2: Substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS, or State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.</p> <p>Actions implemented under the Program could directly and indirectly impact sensitive communities, including sensitive grassland communities, native chaparral and coastal scrub communities, forest communities, oak savanna communities, and riparian communities. Use of equipment and vehicles, and installation of fuelbreaks near wetland and other aquatic communities could adversely impact the wetland plant community. Prescribed herbivory has the potential to adversely impact native grassland if grazing is not properly managed. Implementation of any of the plans within the Program has the potential to introduce non-native and invasive species that could adversely impact sensitive communities.</p> <p>MM Biology-1 identifies training, monitoring, and reporting requirements. MM Biology-4 and MM Biology-5 require Midpen to implement techniques to minimize the spread of invasive species and forest diseases, including expansion of IPMP's EDRR program to VMAs. MM Biology-17 requires provisions for a qualified biologist to review and assess each project for impacts to sensitive natural communities and to identify spatial buffers or other management actions to reduce potentially significant impacts on the sensitive community. MM Biology-18 requires compensatory mitigation for any impacts to sensitive natural communities that cannot be avoided. MM Biology-19 includes measures to ensure that any impacts to jurisdictional waters are properly evaluated and permitted. Implementation of these measures would reduce impacts on sensitive communities to less than significant.</p>	Potentially significant	<ul style="list-style-type: none"> • Within San Francisco garter snake habitat, post-burn monitoring shall be conducted as part of the Program activity and shall include (1) vegetative response to the burn, (2) wildlife response to the burn, and (3) fire behavior and burn conditions. Because the burn is intended to enhance San Francisco garter snake habitat, the monitoring emphasis for vegetation and wildlife shall be on the wildlife and habitat features that are considered to be necessary to support San Francisco garter snakes. The variables measured for San Francisco garter snake response to habitat are pre- and post-burn data on the (1) vegetation community in the burn area in order to determine vegetative response to the burn and (2) the frequency of valley pocket gopher (<i>Thomomys bottae</i>) burrows and other burrows. As part of its standard post-fire evaluation, CAL FIRE and/or Midpen shall provide an analysis of the burn, including how the fire responded to weather and other burn conditions, and percent coverage of the burn within the boundaries of the burn unit. • Beginning immediately after the burn, the frequency (number) of rodent burrows shall be measured during the vegetation transect monitoring. Vegetation monitoring shall include the establishment of four transects within and three transects outside of the burn area for comparative analysis. Transects shall be randomly established in burned and unburned areas and each transect shall measure 50 meters in length. A meter-square plot shall be established at 5-meter intervals along the transects. Vegetative composition and percent cover for all plant species shall be recorded for each plot. Transect sampling shall take place prior to the burn and at least once per year after the burn for 3 years. Response of native and non-native grasses and coyote brush to the burn shall be of particular interest. Data collected before, during, and after the burn, and the observations made during the evaluation of the burn shall be compiled into a report within 1 year following the burn. Upon completion, the report shall be submitted to USFWS. <p>MM Geology-1: Prescribed Herbivory Land and Trail Control (see Section 4.6: Geology and Soils below)</p> <p>MM Biology-1: Training, Monitoring, and Reporting (see above)</p> <p>MM Biology-4: Invasive Plants and Soil Pathogens (see above)</p> <p>MM Biology-5: Invasive Plant Detection and Response (see above)</p> <p>MM Biology-17: Sensitive Natural Communities</p> <ul style="list-style-type: none"> • Before a Program activity is implemented, a Midpen approved botanist shall: (1) assess the site- and Program-specific threats to each sensitive natural community that might be impacted by the Program activity; and (2) recommend spatial buffers or other management actions that shall reduce potentially significant impacts on the sensitive natural community to less than significant levels. The botanist's recommendations shall be site-specific, and shall consider the specific Program activity being proposed, the resiliency of the community, and its susceptibility to potentially significant impacts associated with the Program activity. Midpen shall implement the botanist's recommendations, to the extent feasible. If Midpen is unable to implement the botanist's recommendations, or if there is uncertainty regarding the effects of a Program activity on the community, Midpen shall monitor the treatment areas after treatment at an interval determined appropriate by the qualified biologist or biological monitor working under a qualified biologist. If the monitoring indicates the Program activity has negatively impacted the community by resulting in substantial loss or degradation of the community, the terms of MM Biology-18 shall apply. • To the extent feasible, VMAs, fire management logistics areas, and firefighting infrastructure improvements shall be configured to minimize habitat fragmentation, especially in areas with unique structural components or habitat elements and frequency of treatment shall be carefully defined to reduce or minimize the likelihood of type conversion. If conversion is occurring, conditions of MM Biology-18 for compensatory mitigation shall be applied. • All vegetation removal within tidal marsh or in uplands within 50 feet of tidal marsh shall be conducted with hand tools only. No heavy equipment is permitted. • Vegetative debris (e.g., slash, chips) shall not be placed on top of vegetation in sensitive communities, unless prescribed in the VMP or PFP and determined by a qualified biologist or biological monitor working under a qualified biologist to not have negatively affect the community. 	Less than significant

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • Personnel shall not walk through wetlands or other vegetation communities susceptible to trampling. • Prior to approving an off-road travel route, Midpen shall survey the route to ensure avoidance of sensitive biological resources, including special-status species and sensitive natural communities (or habitats). • If it is not feasible to locate staging areas in previously disturbed areas, they shall be located outside of sensitive communities (or habitats) that could suffer long-term impacts due to staging activities. Staging areas shall not be located in riparian or wetland communities, nor in any of the Group 1 sensitive communities identified for avoidance. • Burn piles shall be placed in areas away from any live vegetation that might be damaged by the burn. • Grazing shall be carefully managed, should it occur in or near a sensitive natural community, to limit the grazing duration and to ensure that erosion and sedimentation of waterways and riparian areas does not occur (in accordance with MM Geology-1). <p>MM Biology-18: Compensatory Mitigation for Impacts to Sensitive Natural Communities</p> <p>Midpen shall provide compensatory mitigation for Program impacts to Group 1 and Group 2 communities. The baseline ratio for impacts to Group 1 communities shall be 3:1 (e.g., 3 acres compensation for each acre impacted). The baseline ratio for impacts to Group 2 communities shall be 2:1. Several factors may dictate the need for a higher ratio (Clement et al. 2014, USACE 2015, USFWS 2016, State Water Resources Control Board 2019). They are:</p> <ol style="list-style-type: none"> 1. Mitigation Strategy: The baseline ratio applies to mitigation projects that entail creation or restoration of the impacted community. One half point shall be added to any mitigation project that involves only enhancement of an existing community as recommended by a Midpen-approved biologist (e.g., seed within native species, removal of human-made infrastructure such as fences or hardscape, treatment of invasive species). 2. Temporal Loss: The baseline ratio assumes there shall be no temporal loss of the community. Therefore, the baseline ratio only applies to mitigation projects that are completed within a year after impacts occur. If the mitigation project is not initiated within a year after impacts occur, the ratio shall be increased by 0.2 for each year of lag time between the time of impacts, and the start of mitigation. For example, if mitigation for a Group 2 community is not expected to be initiated until two years after the impacts occur, the mitigation ratio shall be 2.2:1. 3. Uncertainty: There is inherent uncertainty in whether a mitigation project will fully replace the functions that are lost from the impact site. As a result, the mitigation ratio must be commensurate with the risk that a mitigation project will not achieve the designated goal, which is generally to replace the functions that are lost from the impact site. The baseline ratios account for the uncertainty inherent in all mitigation projects because they shall achieve “no net loss” of sensitive community functions even if some (relatively small) portions of the mitigation site fail to achieve the desired conditions. However, the baseline ratios assume a relatively high probability of success. Due to Midpen’s expertise and experience with mitigation projects, Midpen assumes the mitigation project shall succeed if: (a) Midpen has successfully completed comparable mitigation projects, or (b) scientific literature supports the inference that the mitigation project is likely to be successful (e.g., due to its simplicity). If the proposed mitigation project does not satisfy either criterion, one point shall be added to the baseline ratio (e.g., the ratio for a Group 2 community shall be increased to 3:1). 4. Distance: Compensatory mitigation ratios are generally dependent on the distance of the mitigation site from the impact site. To the extent feasible, Midpen shall mitigate on Midpen property, and within the same watershed as the impact site. 5. Kind: The baseline ratios assume “in-kind” mitigation (i.e., the mitigation site replaces the same sensitive natural community or wetland type as the one impacted by the Program). In some instances, there may be ecological benefits to “out-of-kind” mitigation. There shall be no increase in the mitigation ratio for mitigation projects that restore, create, or enhance a Group 1 community as compensation for impacts to a Group 2 community. Midpen shall document the scientific justification for all proposed out-of-kind mitigation projects. No out-of-kind mitigation 	

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<p>shall be allowed for impacts on wetland or riparian communities unless authorized by the regulatory agency(ies) with jurisdiction over the impacted resource.</p> <p>6. Other Impacts: A mitigation ratio greater than 1:1 may be needed to account for a project’s indirect impacts, and for its contribution to cumulative impacts.¹ The baseline ratios account for these impacts.</p> <p>To determine the appropriate mitigation ratio for a given project (e.g., treatment), Midpen shall apply the factors described above, in the order listed.</p> <p>Midpen shall maintain a ledger that documents:</p> <ol style="list-style-type: none"> 1. Impacts on sensitive communities, including type of community impacted, acreage impacted, year(s) impacts occurred, and activity that caused the impact. 2. The mitigation ratio applied to each Program activity, and the rationale for that ratio. The rationale shall include a formula that incorporates the variables outlined above. 3. Any additional mitigation requirements imposed by the regulatory agencies (e.g., in a Streambed Alteration Agreement from CDFW) beyond what is already described above. 4. Mitigation projects, including the mitigation strategy, type, location, acreage, and date completed. <p>The ledger shall be used to document compliance with the compensatory mitigation requirements. A copy of the ledger shall be made available to the regulatory agencies.</p> <p>Any plants or seeds needed for a mitigation project shall be derived from sources determined appropriate by the Midpen-approved botanist. Dependent upon the species, plants or seeds shall be sourced from locally-appropriate genetic material and comply with best management measures intended to exclude <i>Phytophthora</i> and other plant pathogens to the extent possible.</p> <p>Performance Standards. Projects designed to mitigate significant impacts to sensitive natural communities shall be considered successful once they achieve the membership rules described in the most current version of the Manual of California Vegetation. A District Approved botanist shall implement the Relevé and Rapid Assessment (RA) vegetation sampling techniques (CDFW and CNPS 2019) to monitor sensitive natural community development at mitigation sites until the site achieves the membership rules (e.g., percent relative cover) described in the most current version of the Manual of California Vegetation, after which the site shall be monitored in accordance with Midpen’s monitoring program.</p> <p>MM Biology-19: Wetlands and Other Potential Jurisdictional Aquatic Resources</p> <p>Wetlands and other potential jurisdictional waters that may be impacted by the Program shall be formally delineated by a biologist with expertise in wetland science. In addition to conducting the delineation, and in accordance with the recommendations provided by Castelle et al. (1994), the biologist shall assess the following criteria to determine the buffer size needed to protect the jurisdictional resource from indirect impacts: (1) resource functional value, (2) intensity of adjacent land use, (3) buffer characteristics, and (4) specific buffer functions required. The biologist shall document the results of this assessment and the buffer recommendations in a report to Midpen.</p> <p>Midpen shall not conduct any Program activities that might directly or indirectly impact jurisdictional wetlands and waters unless it possesses permits from the appropriate State and federal regulatory agencies. Midpen shall make every attempt to avoid direct and indirect impacts to wetlands and other jurisdictional waters. If complete avoidance is not possible, a</p>	

¹ Under CEQA, mitigation must be roughly proportional to the level of impacts.

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<p>biologist with expertise in wetland science shall document baseline conditions according to the California Rapid Assessment Method (CRAM) prior to any potential impacts. According to the U.S. Army Corps of Engineers (2015):</p> <ul style="list-style-type: none"> • CRAM is a standardized, cost-effective tool for assessing the health of wetlands and riparian habitats. The overall goal of CRAM is to provide a rapid, scientifically defensible, and repeatable assessment method that can be used routinely for wetland monitoring and assessment. CRAM consists of assessing aquatic resources with respect to four overarching “attributes,” i.e., buffer/landscape context, hydrology, physical structure, and biotic structure. A number of “metrics” address more specific aspects of aquatic resource condition within each of these attributes. Each metric is assigned a numeric score based on either narrative or schematic descriptions of condition or thresholds across continuous values. Metric descriptions are based on characteristics of aquatic resources observed across a range of conditions, such that the highest score for each metric represents the theoretical optimum condition obtainable for the aquatic resource feature being evaluated. • The baseline CRAM assessment shall be used in two ways: (1) to monitor the effectiveness of the buffer in preventing indirect impacts to the wetland community; and (2) to ensure compensatory mitigation replaces the wetland functions impacted by the Program. <p>Compensatory mitigation for impacts to wetland and other jurisdictional waters shall be provided in accordance with USACE guidelines, including: (1) <i>Guidelines for Preparing a Compensatory Mitigation Plan</i>, (2) <i>Attachment 12501.6 – SPD Mitigation Ratio Checklist</i>, (3) <i>Regional Compensatory Mitigation and Monitoring Guidelines</i>, and (4) <i>2501-SPD Regulatory Program Standard Operating Procedure for Determination of Mitigation Ratios</i> (USACE 2010, 2012, 2015, 2017). If possible, compensatory mitigation for impacts to wetlands and other jurisdictional waters shall restore a comparable aquatic feature within the same watershed as the impact.</p> <p>Midpen shall adopt performance standards consistent with the USACE’s <i>Uniform Performance Standards for Compensatory Mitigation Requirements</i> (USACE 2012). Mitigation monitoring shall adhere to the <i>Regional Compensatory Mitigation and Monitoring Guidelines</i> (USACE 2015).</p>	
<p>Impact Biological Resources-3: Substantial interference with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. Vegetation management activities could be located in areas used as wildlife movement corridors or nurseries; however, the nature of work, which would retain a thin vegetation cover, would not entirely inhibit wildlife movement. Prescribed fires and installation of firefighting infrastructure could modify existing natural habitats and cause destruction, siltation, or spills into native wildlife nursery sites. The Program includes designation of refugia in some treatment areas (i.e., FRAs) to protect resident wildlife, but impacts could still be significant. MM Geology-2 and MM Geology-3 require implementation of design features to minimize erosive effects of livestock trails and a buffer distance between prescribed and pile burns around streams and other erosion control measures to minimize effects from sedimentation on aquatic breeding species. MM Biology-7 requires surveys for California red-legged frog egg masses prior to activity in suitable habitat. MM Biology-9 requires avoidance of western pond turtle nests. MM Biology-11 identifies specific survey radii and monitoring protocol for nests and nesting birds. MM Biology-16 identifies buffer distances needed to avoid harm to birds from burning. With the implementation of these measures, impacts on native wildlife nursery sites would be less than significant.</p>	Potentially significant	<p>MM Geology-2: Erosion Control and Slope Stability Measures (see Section 4.6: Geology and Soils below) MM Geology-3: Fire Lines During Prescribed Burns (see Section 4.6: Geology and Soils below) MM Biology-7: California Red-Legged Frog Protection Measures (see above) MM Biology-9: Western Pond Turtle Protection Measures (see above) MM Biology-11: Nesting Bird Protection Measures (With the Exception of Marbled Murrelet) (see above) MM Biology-16: Prescribed Burns and Biological Resource Avoidance (see above)</p>	Less than significant
<p>Impact Biological Resources-4: Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, or adopted HCP, Natural Community Conservation Plan (NCCP), or other approved local, regional, or State HCP. The proposed Program activities have the potential to adversely impact several species, including those covered by the Santa Clara Valley Habitat Plan. Implementation of MM Biology-1 through MM Biology-17</p>	Potentially significant	<p>MM Biology-1: Training, Monitoring, and Reporting (see above) MM Biology-2: Special-Status Plants (see above) MM Biology-3: Compensatory Mitigation for Impacts to Special-Status Plants (see above) MM Biology-4: Invasive Plants and Soil Pathogens (see above)</p>	Less than significant

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
<p>would ensure that impacts on special-status wildlife and plants as well as nesting birds are reduced to less than significant. The proposed Program activities could conflict with local tree ordinances if trees were removed in violation of those ordinances. MM Biology-20 would be implemented to require a survey of trees in removal areas to identify if any trees meet the requirements of the local jurisdiction’s significant or heritage tree ordinances. With implementation of the mitigation, impacts would be less than significant.</p>		<p>MM Biology-5: Invasive Plant Detection and Response (see above) MM Biology-6: San Francisco Garter Snake Protection Measures (see above) MM Biology-7: California Red-Legged Frog Protection Measures (see above) MM Biology-8: Foothill Yellow-Legged Frog Protection Measures (see above) MM Biology-9: Western Pond Turtle Protection Measures (see above) MM Biology-10: California Giant Salamander, Santa Cruz Black Salamander, and Red-Bellied Newt Protection Measures (see above) MM Biology-11: Nesting Bird Protection Measures (With the Exception of Marbled Murrelet) (see above) MM Biology-12: Marbled Murrelet Nest Protection Measures (see above) MM Biology-13: Special-Status Insect Host Plant Protection (see above) MM Biology-14: Salmonid Protection Measures (see above) MM Biology-15: Monarch Butterfly Overwintering Aggregation Protection (see above) MM Biology-16: Prescribed Burns and Biological Resource Avoidance (see above) MM Biology-17: Sensitive Natural Communities (see above)</p> <p>MM Biology-20: Significant and Heritage Tree Ordinances Prior to conducting any work that involves tree removal, biologist or other personnel qualified in tree identification shall identify if any County or local protected and heritage tree ordinances are relevant to the area of work. If an ordinance would apply to the area of work, the area of work shall be investigated by the biologist or personnel qualified in tree identification to identify if any trees subject to the ordinance are found in the project area. If a tree subject to the ordinance is in the area of work, the tree shall be clearly marked as a “Leave Tree” so that it is not accidentally damaged or removed during work. If a tree that qualifies as a protected or heritage tree must be removed, the appropriate steps shall be implemented to obtain the appropriate permits for tree removal.</p>	

4.5 Cultural and Tribal Cultural Resources

<p>Impact Cultural Resources-1: Substantial adverse change in the significance of a historical or archaeological resource pursuant to CEQA Guidelines Section 15064.5. Vegetation management activities under the Program would occur on lands that contain known and likely previously undiscovered historic or archaeological resources and tribal cultural resources. Use of mechanical methods and prescribed herbivory would result in ground disturbance of at least the top layer of soil and could unearth and damage cultural resources. Clearing of skid trails to access management areas could expose and damage cultural resources. Prescribed burns would involve use of heavy equipment and vehicles during suppression and mop-up activities, which would damage superficially deposited cultural resources. Heat from prescribed burns could damage resources on or very near the surface. MM Geology-3 requires implementation of design features to minimize erosion effects of livestock trails that could result in erosion that could expose and damage resources. Midpen requires worker training and halting work within 50 feet of a cultural resource discovery until it can be assessed (IPMP BMP 26; Contract Conditions), which is not likely sufficient to reduce potential impacts and would not reduce impacts caused by prescribed burns. Impacts could be potentially significant. MM Cultural-1 requires a desktop review, a pre-activity survey, and avoidance or evaluation of found resources. MM Cultural-2 requires data collection in accordance with a Treatment Plan if any resources cannot be avoided.</p>	<p>Potentially significant</p>	<p>MM Geology-3: Fire Lines During Prescribed Burns (see Section 4.6: Geology and Soils below) MM Cultural-1: Pre-Activity Surveys and Avoidance of Impacts to Cultural Resources Prior to conducting any work associated with the WFRP that could disturb the ground surface or subsurface, the work areas shall be compared against Midpen’s GIS data to determine if the area has been previously surveyed and, if it has been surveyed, if any historic or archaeological resources or tribal cultural resources are found in the work area. Any resources that have not been evaluated shall be assumed eligible for listing in the CRHR and assumed significant. If the GIS data shows that the proposed areas where soil disturbance below the surface via heavy equipment or burning (i.e., for VMP activities involving heavy equipment, prescribed fires under the PFP, and any work that involves grading under the Wildland Fire Pre-Plans) have not been previously surveyed, then a discretionary archival-records search at the California Historical Resources Information System, Northwest Information Center, can be completed. If the area is still not found to have been previously surveyed, a pre-activity cultural-resources survey shall be conducted by a qualified archaeologist or cultural resources specialist in accordance with industry standards prior to performing work unless vegetation is too dense, making a survey impossible. In the event vegetation is too dense, making a pre-activity survey challenging or impossible, the training conducted under IPMP BMP 26 shall be sufficient to permit work to be conducted using only manual techniques accessed on foot.</p>	<p>Less than significant</p>
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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
<p>Implementation of these measures would reduce impacts on cultural resources to less than significant.</p>		<p>New resources noted during the field survey shall be recorded and mapped on appropriate California Department of Parks and Recreation 523 forms. In the case of a previously recorded resource, an updated California Department of Parks and Recreation 523 form detailing current condition shall be completed, as appropriate.</p> <p>Any historical or archaeological resources (not including built-environment historic features) located in the work area (as identified in either previous surveys, in a discretionary records search, or during pre-activity surveys) plus a 50-foot buffer shall be identified on any activity plans. The boundaries around the resource/buffer shall be temporarily marked, such as with fencing or flagging. If work must commence in the sensitive area, it can only be performed using hand tools or hand-powered tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the resource can be evaluated for eligibility under the CRHR. If found ineligible and not a tribal cultural resource, work could proceed as normal. If found eligible or to be a tribal cultural resource, impacts on the resource must be avoided (through total avoidance of the area or through use of hand methods only in the area of the resource, as described here). If not avoidable, MM Cultural-2 shall be implemented. After work is completed, all cultural resource delineators (e.g., flags or fencing) shall be removed in order to avoid potential vandalism, unauthorized excavation(s), etc.</p> <p>Midpen shall contact and consult with local Native American groups identified by the Native American Heritage Commission and request input on Tribal Cultural Resources within the project areas if any prehistoric resources are identified during pre-activity surveys and impacts to these resources cannot be avoided or minimized (such as through the use of hand tools). The Midpen Project Manager shall have the discretion to consult, depending on the potential impacts anticipated from the Program activity. Information on the proposed activity, the results of the information review(s) and field inventory, and any Native American input shall be reported in a Memo to the File with the implemented mitigation measures based on anticipated impacts.</p> <p>MM Cultural-2: Treatment of Unavoidable Resources</p> <p>For any resources either discovered during implementation of activities (per IPMP BMP 26) or found during pre-activity surveys under MM Cultural-1 and that cannot be avoided, recordation, additional archaeological testing, Native American consultation (if pre-historic), and data recovery shall be implemented. Data recovery for any significant cultural resources that cannot be avoided or preserved in place shall be guided by a Treatment Plan, to be submitted to Midpen for approval and completion.</p> <p>Impacts shall be assessed for the installation of new permanent infrastructure under the Wildland Fire Pre-Plans near a built-environment historic feature, landscape, or district. The new infrastructure shall either be relocated if an effect is likely or data recovery implemented in accordance with a Treatment Plan (as previously discussed).</p> <p>A report of the findings and resource interpretation, disposition of any recovered cultural materials, and recommendations for future resource protection shall be completed and filed with Midpen, interested Native Americans, the California Historical Resources Information System (if pre-historic), and the Northwest Information Center.</p>	
<p>Impact Cultural Resources-2: Disturbance of human remains, including those interred outside of formal cemeteries. Several Program activities, in particular use of heavy equipment for vegetation removal and installation of new firefighting infrastructure, have some potential to directly disturb human remains. Areas near perennial creeks in lowland valleys have a higher potential for encountering human remains than other areas, such as along peaks and ridgelines. MM Cultural-3 requires work to halt within 50 feet of the discovery of human remains, coordination with the County Coroner’s office, and appointment of a Most Likely Descendent. The impact on human remains due to disturbance would be reduced to less than significant with implementation of mitigation.</p>	<p>Potentially significant</p>	<p>MM Cultural-3: Human Remains</p> <p>If human remains and associated or unassociated funerary objects are exposed during vegetation management, work within 50 feet of the discovery shall be halted and the find protected from further disturbance in accordance with Midpen protocols for resource protection. The County Coroner or Medical Examiner shall be notified immediately and, in the event of the determination that the human remains are Native American remains, notification of the Native American Heritage Commission shall be undertaken to obtain a most likely descendant (MLD) (PRC § 5097.98) for treatment recommendations. Midpen, the archaeological consultant, and the MLD shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Section 15064.5[d]). The agreement shall take into consideration the appropriate removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects.</p>	<p>Less than significant</p>

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
<p>Impact Cultural Resources-3: Adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. Implementation of the Program has the potential to significantly impact known and previously undiscovered prehistoric resources eligible for listing in the California Register of Historic Resources (CRHR), which could also be considered tribal cultural resources. Midpen requires worker training and halting work within 50 feet of a cultural resource discovery until it can be assessed (IPMP BMP 26; Contract Conditions), in the absence of mitigation measures, this BMP alone is not likely sufficient to reduce potential impacts and would not reduce impacts caused by prescribed burns. Impacts could be potentially significant. MM Cultural-1 requires a desktop review, a pre-activity survey, and avoidance or evaluation of found resources. MM Cultural-2 requires data collection in accordance with a Treatment Plan if any resources cannot be avoided. Implementations of these measures would reduce impacts on cultural resources to less than significant. MM Cultural-3 would ensure that Native American human remains, if discovered, are properly addressed in accordance with law. The impact would be reduced to less than significant with implementation of these mitigation measures.</p> <p>Midpen sent notification letters regarding the Program to eight Native American tribes on May 23, 2020. No tribes requested formal notification of projects within the Program area per AB 52. Midpen is engaged in informal consultation with the Amah Mutsun Tribal Band. The Tribe’s representatives expressed interest in the PFP component of the Program and requested to be informed when preparation of the detailed PFP begins.</p>	Potentially significant	<p>Implementation of the Treatment Plan shall be undertaken by Midpen, and any findings shall be submitted in a report to the MLD and filed with the California Historical Resources Information System, NWIC.</p> <p>MM Cultural-1: Pre-Activity Surveys and Avoidance of Impacts to Cultural Resources (see above) MM Cultural-2: Treatment of Unavoidable Resources (see above) MM Cultural-3: Human Remains (see above)</p>	Less than significant
4.6 Geology and Soils			
<p>Impact Geology and Soils-1: Direct or indirect potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) Strong seismic ground shaking; iii) Seismic-related ground failure, including liquefaction; or iv) Landslides. The Program area is located within earthquake fault zones and Midpen lands are also designated as zones of required investigation under the Seismic Hazards Mapping Act. Seismic ground shaking events are unpredictable and the potential occurrence of such events coinciding with Program activities is minimal. The proposed Program involves implementation of various vegetation management activities and does not include any substantial new structures or operational activities that could create or exacerbate a ground shaking risk to the surrounding population. Implementation of Program activities would not cause an increased risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, or seismic related ground failure, including liquefaction. Refer to Impact Geology and Soils-3 below for discussion of landslides impacts.</p>	Less than significant	No mitigation measures are required.	N/A
<p>Impact Geology and Soils-2: Substantial soil erosion or the loss of topsoil. Manual and mechanical methods, prescribed herbivory, and prescribed burning could result in erosion and loss of topsoil. BMP IPMP 28 requires that erosion control measures be implemented before or</p>	Potentially significant	MM Geology-1: Prescribed Herbivory Land and Trail Control	Less than significant

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
<p>after vegetation treatment near sites with loose or unstable soils, on steep slopes (greater than 30 percent), where a large percentage of the groundcover would be removed, or near aquatic features that could be adversely affected by an influx of sediment. MM Geology-1 requires implementation of design features to minimize creation of livestock trails and congregation of livestock in any one location. MM Geology-2 requires that prescribed burns are performed outside of perennial streams and intermittent streams, riparian forest, and woodlands and requires a 50-foot buffer be maintained around perennial and intermittent streams when the prescribed burn is proposed upslope on slopes greater than 35 percent to reduce impacts from erosion contaminating nearby riparian areas or waterbodies. MM Geology-3 requires use of existing facilities for fire lines where they occur, implementation of erosion control measures during and after prescribed burns, follow up inspections, and restoration actions for new fire lines. Implementation of these measures would minimize the potential adverse impacts to less than significant.</p>		<p>Livestock will be used for vegetation management to reduce the use of chemical herbicides, to control invasive vegetation, and to promote the growth of native vegetation. Methods shall be implemented to reduce the potential creation of prescribed herbivory trails and erosional features, including the following:</p> <ul style="list-style-type: none"> • Limit or prohibit prescribed herbivory within 100 feet of lakes/reservoirs, creeks, streams, riparian corridors, and wetlands, using fencing or natural features to prevent livestock from entering streams and riparian areas, depending upon a qualified professional's assessment. The following measures would be considered by the qualified professional and implemented where appropriate: <ul style="list-style-type: none"> – In riparian areas, livestock shall be excluded from the top of bank of a defined channel by installing fencing on the edge of riparian canopy where topography does not naturally exclude access. – Water and feed troughs shall be installed away from natural water sources. – In wetlands, livestock shall be excluded only where the percent cover of vegetation is low. • Implement methods, which could include rotating or providing multiple feeding areas to minimize excessive congregation of animals in any one location for too long, as determined by a qualified professional. • Limit the number of animals in a particular-sized area using the stocking-rate equation taking into account days assumed to graze, slope, yield of the land, number of animals, weight of animals, and other appropriate factors. • Conduct surveys of the prescribed herbivory area during active grazing; identify if trails or other erosion features are forming. • Ensure there are appropriate rest periods between active prescribed herbivory in any one area to allow regrowth of plants and appropriate amounts of residual dry matter (RDM) to remain on the ground to achieve desired vegetation-management objectives. • If prescribed herbivory trails or damaged areas form, the bare area shall be remediated by decompacting the soil and discontinuing prescribed herbivory in the area until the trails are revegetated, as determined by a qualified professional. • Excessive livestock grazing on steep slopes (generally slopes with more than 35 percent grade) shall be discouraged or avoided using the methods described above (e.g., water and feed trough locations, stocking-rate equation) or fencing where determined appropriate by a qualified professional. • During surveys of active prescribed herbivory, conduct ongoing surveillance of installed erosion control features around riparian areas and any fences installed. • Repair damaged fencing or erosion-control features as necessary. <p>MM Geology-2: Erosion Control and Slope Stability Measures</p> <p>In addition to Midpen's erosion-control measures (IPMP BMP 28), control measures shall be implemented to ensure vegetation management does not result in erosion, loss of topsoil, or slope instability in areas where work could expose bare soils or create loss of root-soil matrix strength. If groundcover or native mulch/organic matter is determined to be less than 70 percent following work or work is proposed to occur on steep slopes (over 35 percent slope), then control measures, as identified here, shall be implemented as determined appropriate by the qualified personnel.</p> <p>Prior to conducting work in any given area under any management action that could result in erosion or slope instability (e.g., prescribed burns, tree removal, weed removal, or forest treatments that could reduce the groundcover and expose soil, or for infrastructure creation such as new roads, pipelines, or water storage tanks) the area shall be inspected for existing signs of erosion or slope instability (e.g., rills, slumped soil). Depending on the slope and the downslope resources (roads that could be impacted if a slope failed, waterbodies or habitat that could be impacted from erosion, important habitat, etc.), erosion and slope stabilization measures shall be determined prior to implementation of work, based on the list below. Generally, if an action would expose soils (leaving groundcover or native mulch/organic matter less than 70 percent), then measures to protect soils, minimize erosion, and prevent slope instability shall be implemented. The measures to be implemented shall depend on the site's specific characteristics and the type and extent of vegetation management work to be performed. The</p>	

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<p>inspection and determination of appropriate measures shall be made by qualified personnel with knowledge and experience (a person with a qualified SWPPP developer [QSD] or a qualified SWPPP practitioner [QSP]) in the application of erosion and slope-stabilization control measures through training or field experience with control measure installation. The qualified personnel shall memorialize in writing their field observations and corresponding recommendations regarding installation of control measures.</p> <p>General Control Measures</p> <p>The following measures shall be considered for implementation and required as determined appropriate by the qualified personnel during work as applicable:</p> <ul style="list-style-type: none"> • Minimize areas to be disturbed to the greatest extent feasible. • Shut down use of heavy equipment, skidding, and truck traffic when soils become saturated and unable to support the machines. • No substantial ground disturbing work (e.g., use of heavy equipment, pulling large vegetation) shall occur during rain events and 48 hours after a rain event, defined as 0.5 inch of rain within a 48-hour or greater period, using the NOAA website as the official record for rain events. <p>Reduced Groundcover Control Measures</p> <p>The following measures shall be considered for implementation and required as determined appropriate by the qualified personnel during work if the activity may leave less than 70 percent of groundcover or native mulch/organic material and as applicable:</p> <ul style="list-style-type: none"> • Sow native grasses and other herbs 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: <ul style="list-style-type: none"> – 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 – Following the removal of invasive plants from stream banks to prevent sediment movement into watercourses and to protect bank stability. • Sediment control devices, if installed, shall be certified weed-free, as appropriate. Sediment control devices shall be inspected daily during active construction to ensure that they are in good repair and working as needed to prevent sediment transport into the waterbodies (and repaired as needed). <p>Once work is completed, the areas shall be inspected as needed and as accessible but at least annually until groundcover exceeds 70 percent and it is clear that significant erosion and slope instability are not occurring. At that time, erosion control and slope stability devices may be removed at the discretion of District staff.</p> <p>Steep Slopes Control Measures</p> <p>The following measures, in addition to the ones described above, shall be considered for implementation and required as determined appropriate by the qualified personnel during work conducted on steep slopes (greater than 35 percent) and as applicable:</p> <ul style="list-style-type: none"> • Avoid use of heavy equipment on slopes greater than 35 percent unless specialized equipment is used that does not impact slope stability. 	

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • Prescribed and pile burns shall be performed outside of perennial and intermittent streams and of riparian forest/ woodland. A 50-foot buffer around perennial and intermittent streams shall be maintained when the burn is proposed upslope of the stream on slopes greater than 35 percent. • Avoid installation of cleared areas, including spur roads or staging areas, on steep slopes, particularly over 50 percent slope, where feasible. Where not feasible, implement appropriate design and control measures including but not limited to those identified in <i>Low-Volume Roads Engineering</i> (Keller & Sherar, 2003) or other suitable engineering guidance, such as: <ul style="list-style-type: none"> – Locate roads on well-drained soils and slopes where drainage moves away from the road – Provide adequate surface drainage – Avoid wet and unstable areas (seeps, springs, etc.) – Use the natural topography to control or dictate the ideal location of road or cleared area (e.g., staging area); use saddles, follow ridges, use bench areas, etc. <p>In areas of steep slopes (greater than 35 percent) that are located above infrastructure or sensitive habitat, a geologist shall perform an assessment if intensive tree removal (e.g., eucalyptus removal) is proposed to evaluate whether erosion and/or slope instability could occur from tree removal. Recommendations provided in the assessment shall be implemented as needed to ensure that slope instability does not occur. Recommendations could include measures such as stabilizing slopes with mats or natural materials after tree removal and replanting to bind soils.</p> <p>MM Geology-3: Fire Lines During Prescribed Burns</p> <p>The following measures shall be implemented during prescribed burns to reduce erosion from fire lines:</p> <ul style="list-style-type: none"> • Use existing barriers such as roads, trails, or wet lines as fire lines. If new fire lines must be established for a prescribed burn, fire lines shall be restored as described below. • Restore fire lines upon completion of the burn if they are not used again (unless they are existing roads, trails, or other permanent elements). Utilize erosion-control measures, such as sediment traps, during restoration to reduce sedimentation impacts. Complete restoration activities within one month after a fire line is created unless the fire line is planned to be used during another burn within one year. Restore all fire lines that do not use existing infrastructure (i.e., roads, trails, or other permanent elements) within one year of use. Rehabilitation methods may include use of a hydromulch with locally collected, genetically appropriate, native species; pulling duff, litter, and cut material back over lines; and/or distribution of locally chipped fuels on the lines. • Design prescribed burn boundaries to avoid gullies and highly erodible soils to the fullest extent possible. 	
<p>Impact Geology and Soils-3: Instability of a geologic unit or soil that could potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. Use of manual and mechanical techniques, prescribed herbivory, and prescribed burning would result in removal of vegetation and trees, which would cause soil instability and loss of root strength. Soil instability and loss of root strength could cause slope failure and increased landslide risks. Creating VMAs, installing fire lines, using heavy equipment, and clearing of access roads would remove vegetation and disrupt soils which could lead to increased landslide risk. Implementation of IPMP BMP 28 would reduce some risks but risks could still remain. MM Geology-2 and MM Geology-3 would minimize the potential for landslides to occur during or after Program activities are completed. Implementation of these measures would minimize the impacts to less than significant.</p>	Potentially significant	<p>MM Geology-2: Erosion Control and Slope Stability Measures (see above)</p> <p>MM Geology-3: Fire Lines During Prescribed Burns (see above)</p>	Less than significant
<p>Impact Geology and Soils-4: Impacts from expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), or corrosive soil, creating substantial direct or indirect risks to life or property. Expansive soils may be present in Ravenswood OSP and Stevens Creek Shoreline Nature Area where saturated bay mud occurs. New infrastructure may be constructed in these areas, which could create risk to infrastructure or property if located on an expansive soil.</p>	Potentially significant	<p>MM Geology-4: Soil Assessment for Construction of New Water-Supply Pipelines</p> <p>The following soil-assessment measures shall be implemented to ensure significant risks to life or property do not occur as a result of water-supply pipeline construction in an expansive soil in Ravenswood OSP or Stevens Creek Shoreline Nature Area:</p>	Less than significant

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Implementation of MM Geology-4 would reduce the impact to less than significant level through conducting soils assessments prior to construction of new infrastructure and incorporating design standards to reduce the potential risk associated with soil expansion. Implementation of mitigation would minimize the impacts to less than significant.		<ol style="list-style-type: none"> 1. Consult GIS data to determine if expansive soils may be present within the proposed construction site. 2. Conduct a field assessment using a proven scientific test or method, such as a soil expansion index test, to verify presence of expansive soils on the site. 3. If verified to be present, determine if the expansive soils can be avoided through design specifications. If appropriate design measures cannot be utilized to avoid expansive soils, no excavated soil shall be used for fill during construction; instead, clean fill soils with a low expansion potential shall be used. 	
Impact Geology and Soils-5: Soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. No septic tanks or alternative wastewater disposal system would be installed as part of the Program. No impact would occur.	No impact	No mitigation measures are required.	N/A
Impact Geology and Soils-6: Direct or indirect impacts on a unique paleontological resource or site or unique geologic feature. No unique paleontological resources have been recorded within the Program area. Pleistocene alluvium has a moderate potential to yield paleontological resources within the Program area and the largest deposits are found in Sierra Azul and Rancho San Antonio OSPs. Several additional OSPs that contain Pleistocene alluvium only feature a small amount of this geologic unit and these areas are not likely to yield unique paleontological resources. Vegetation removal would not disturb soil depths in excess of shrub or tree roots. The potential for ground-disturbing activities to uncover, much less destroy, a unique paleontological resource, is unlikely.	Less than significant	No mitigation measures are required.	N/A
4.7 Greenhouse Gas Emissions			
Impact GHG-1: Generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment. GHG emissions associated with the Program implementation would be generated from emissions from mechanical equipment and vehicles, emissions from pile burning, and emissions from prescribed burning (Table 4.7-7). The majority of the GHG emissions are caused by the proposed prescribed burning activities. No thresholds for GHGs apply to the Program areas. GHG emissions impacts from implementation of the Program would be significantly increased through prescribed burning and would be potentially significant. Prescribed burning is becoming a more frequently used tool to reduce fuel loads and to improve ecosystem health in ecosystems that are adapted to periodic, low-intensity fire. The comparative GHG emissions of a catastrophic wildland fires in an area that did not previously benefit from reduced fuel loads due to VMA activities and prescribed fire are not quantifiable but are assumed to be much greater than the emissions from prescribed burning. MM Air Quality-2 requires consideration and implementation of measures to minimize prescribed burn and pile burn emissions, when and where appropriate. The impact would remain potentially significant and unavoidable.	Potentially significant	MM Air Quality-2: Burn Emission Reduction Techniques (see Section 4.3: Air Quality above)	Potentially significant and unavoidable
Impact GHG-2: Conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. The Program would be consistent with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions, including 2017 Scoping Plan, California Forest Carbon Plan, 2017 CAP, Midpen’s Resource Management (RM) Polies, and San Mateo, Santa Clara, and Santa Cruz County’s General Plans policies. The purpose of the Program is to reduce wildland fire risk, which could reduce GHG emissions and increase carbon sequestration over the long term.	Less than significant	No mitigation measures are required.	N/A

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
4.8 Hazards, Hazardous Materials, and Wildland Fire			
<p>Impact Hazards-1: Significant hazard to the public or the environment through emission of or exposure to hazardous materials. Manual, mechanical, and chemical treatment options associated with the Program would result in activities that could require the transportation, use, and storage of herbicides, fuel, and other hazardous chemicals (see Table 4.8-3). Midpen would comply with all relevant regulatory requirements pertaining to the handling of hazardous materials, including herbicides. In addition, Midpen requires implementation of BMPs (IPMP BMPs 7, 9, 10, 34, 35; MO Manual Section 13.010, 14.005 17.005 and 17.006; Safety Manual Sections 1.6.5 and 1.6.6; Contract Conditions) to minimize the potential for adverse impacts to non-target species (i.e., humans, animals, and special-status species). Treatment options that require the transportation, use, and storage of hazardous materials associated with the Program would not result in the exposure of the public or environment to adverse conditions associated with the use of these materials. Impacts from emissions of or exposure to hazardous materials would be less than significant with implementation of BMPs.</p>	Less than significant	No mitigation measures are required.	N/A
<p>Impacts Hazards-2: Hazard to the public or the environment on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Three hazardous-materials sites listed on government databases remain open on Midpen lands at Sierra Azul OSP, Miramontes OSP, and Ravenswood OSP. Program activities are unlikely to occur around the Cooley Landing site at Ravenswood OSP. The VMP would involve some fire-management activities in and around the area of the former Almaden AFS in Sierra Azul OSP and the Madonna Creek Ranch site in Miramontes OSP. Disturbance of contamination at listed sites could pose a significant hazard to the public, workers, or the environment. Midpen would comply with all relevant regulatory requirements pertaining to the handling of asbestos-containing material. Furthermore, MM Hazards-1 requires preparation of a map showing the areas of residual contamination within the sites listed on government databases (e.g., former Almaden AFS) prior to any fire-management activities and avoidance of all contaminated areas unless they are remediated in the future and no hazardous materials remain. Implementation of MM Hazards-1 and compliance with applicable regulations would reduce the impacts on workers and the environment from existing hazards to less than significant.</p>	Potentially significant	<p>MM Hazards-1: Avoidance of Contaminated Sites</p> <p>To prevent exposure of workers to hazards or release of contamination into nearby waterways or clean soils, the following shall be conducted prior to any work within the boundary of any known contaminated sites or contaminated sites listed on government databases (e.g., the former Almaden AFS, Madonna Creek Ranch):</p> <ul style="list-style-type: none"> Existing data and reports on the areas of contamination and remediation, or the SFBRWQCB, shall be consulted and a map prepared identifying any areas with residual contamination (e.g., lead paint, asbestos, petroleum) that are still present after remediation. This map shall be updated at least annually if any fire management activity is proposed in the area. The areas identified on the map as containing residual contamination shall be avoided either entirely (e.g., no cutting or entrance into site) or ground disturbing activities avoided (e.g., vegetation cutting allowed), depending upon a determination made by qualified personnel. 	Less than significant
<p>Impact Hazards-3: Safety hazard or noise related to project area located within an area covered by an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, affecting people residing or working in the project area. The majority of Midpen lands are not located within an airport land use plan or within the vicinity of a private airstrip. Ravenswood OSP is within 2 miles of the Palo Alto Airport, but it is not within the airport influence area. No impact would occur.</p>	No impact	No mitigation measures are required.	N/A
<p>Impact Hazards-4: Impairment of implementation or physical interference with an adopted emergency response plan or emergency evacuation plan. Fire management activities such as prescribed burning or conducting roadside mowing may require lane or full road closures that could interfere with evacuation along designated routes on Midpen lands. Hindering evacuation and emergency response could be a significant impact. MM Transportation-1 requires Midpen to make provisions to allow emergency responders through any work area or to clearly designate alternate routes. Implementation of MM Transportation-1 would ensure that unattended authorized work vehicles are not parked in such a way that blocks the road when there are no operators in attendance to move them and that the fire district and emergency response agencies have prior</p>	Potentially significant	MM Transportation-1: Emergency Responders and Access (see Section 4.12: Transportation below)	Less than significant

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
notification of temporary access road closures. Impacts would be less than significant with mitigation.			
<p>Impacts Hazards-5: Exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Some vegetation management activities could increase some risks of wildland fire ignition and spread during the actual performance of work, which requires the use of vehicles and equipment that could ignite a fire through generation of sparks or heat. Certain parts of Midpen lands could be more susceptible to fire ignition and spread, such as areas on steep slopes, south-facing slopes, and areas where significant fuel is found (e.g., dead trees and thick understories of weeds). Pile and prescribed burns also have a higher potential for starting a wildland fire, if the burns were to become uncontrolled, although this risk is very low and happens extremely rarely in practice. Midpen would implement several fuel spill prevention BMPs (Maintenance Operations Manual Sections 14.005 and 13.010; Safety Manual Sections 1.6.5 and 1.6.6). Workers would not be permitted to smoke on Midpen lands, except in certain designated areas (LU Regulations 404.2). Midpen implements strict practices for operation of equipment and ensures that staff and contractors are trained in fire prevention and suppression techniques in the event operation of equipment ignites a fire (MO Manual Section 13.005; Safety Manual Chapter 1.7.0.0). Activities that could cause sparks within Midpen lands are required to cease during extreme fire weather (RM Policy WF-1). MM Hazards-2 and MM Hazards-3 require implementation of several measures to reduce risk of wildland fires associated with pile burning and prescribed burning. Impacts of exposing people or structures to a significant risk of loss, injury, or death involving wildland fires would be less than significant with implementation of BMPs and mitigation measures.</p>	Potentially significant	<p>MM Hazards-2: Fire Risk Reduction for Stockpiling and Pile Burning</p> <p>The following measures shall be implemented to reduce hazards associated with pile burning:</p> <ul style="list-style-type: none"> • Pile burning shall only be allowed on days when fire is less likely to spread (e.g., wind speeds are less than 15 mph). • Piles shall not be constructed in areas where burning cannot be safely controlled, such as bottoms of steep, vegetated hills. • Piles shall be set back from roads and trails at a distance specified by Midpen to minimize risk to recreationalists and other users. • All requirements of the BAAQMD or MBARD shall be met, including any permit, notification, and reporting requirements. • Public notification shall be provided at least 24 hours in advance of a burn to individuals within one mile and at trailheads and access roads leading to the area with piles proposed for burning. The public notification shall include current contact numbers to the appropriate burn coordinator. <p>MM Hazards-3: Safety Around Prescribed Burns</p> <p>Trails and Midpen-Owned or Managed Roads</p> <p>Midpen-owned or managed roads and trails shall be closed to public recreational and other unaffiliated private vehicle (e.g., County or private landowner vehicles on Midpen managed but not owned land) access within at least 500 feet of the outermost edges of a prescribed burn (or less with Burn Boss and Midpen concurrence). Midpen-owned or managed roads and trails shall be posted and blockaded with temporary fencing or the like. Notices of closures shall be posted at the trail heads or road entrances and on Midpen’s website. Additional measures, such as staffing trail head closures, can be implemented as needed.</p> <p>Public Roads</p> <p>If possible, public roads within 500 feet of the outermost edges of a prescribed burn shall be closed in coordination with the appropriate agency (e.g., Caltrans). In the event this is not feasible due to volume of traffic or lack of alternative routes, a Traffic Control Plan shall be prepared and adopted in coordination with the appropriate agency. The Traffic Control Plan shall be designed to allow safe passage along roads adjacent to a prescribed burn and shall include the following at a minimum:</p> <ul style="list-style-type: none"> • Requirement to coordinate with local law enforcement (e.g., County Sheriff, California Highway Patrol). • Installation of temporary signage at intervals ahead of and adjacent to the prescribed burn indicating that a prescribed burn is in progress. • Use of flaggers to slow traffic during the burn or stop traffic if wind conditions shift, resulting in smoke crossing the road. 	Less than significant
<p>Impact Hazards-6: Exacerbation of wildland fire risks due to slope, prevailing winds, or other factors, that could expose project occupants to pollutant concentrations from a wildland fire or the uncontrolled spread of a wildland fire. Some activities, including prescribed burning and use of vehicles and equipment, could increase the risk of wildland fire ignition during implementation of the activity, which could be considered significant. Midpen would comply with applicable policies and regulations to minimize wildland fire risk by requiring implementation of Midpen fuel spill prevention measures and IPMP BMPs, preparation of Smoke Management Plans, and avoidance of activities that could spark a fire during extreme fire weather. MM Hazards-2 requires implementation of several measures to reduce risk of wildland fire associated with pile burning. These measures would reduce risk of activities associated with activities starting a wildland fire to less than significant.</p>	Potentially significant	<p>MM Hazards-2: Fire Risk Reduction for Stockpiling and Pile Burning (see above)</p>	Less than significant

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
<p>Impact Hazards-7: Installation or maintenance of roads, fuel breaks, emergency water sources, power lines or other utilities that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Several activities proposed under the Program would involve installation, construction, or maintenance of infrastructure, such as fuelbreaks, roads, and water tanks or pipelines. The VMAs and proposed firefighting infrastructure would minimize spread of wildland fires and aid in firefighting efforts. The infrastructure, once installed, would not exacerbate fire risks and would be beneficial. The potential environmental impacts of installing and constructing the proposed infrastructure are analyzed throughout this EIR under the VMP and Wildland Fire Pre-Plan. Mitigation measures are identified as applicable to minimize impacts to less than significant.</p>	Potentially significant	<p>MM Aesthetics-1: Reduction of Visual Impacts from Scenic Roads, Corridors, Trails, and Viewpoints from VMAs (see Section 4.2: Aesthetics above)</p> <p>MM Aesthetics-2: Guidelines for Design of Roads, Landing Zones, or Staging Areas (see Section 4.2: Aesthetics above)</p> <p>MM Air Quality-1: Fugitive Dust Control Measures for Infrastructure Installation (see Section 4.3: Air Quality above)</p> <p>MM Air Quality-3: Asbestos Management (see Section 4.3: Air Quality above)</p> <p>MM Biology-1: Training, Monitoring, and Reporting (see Section 4.4: Biological Resources above)</p> <p>MM Biology-2: Special-Status Plants (see Section 4.4: Biological Resources above)</p> <p>MM Biology-3: Compensatory Mitigation for Impacts to Special-Status Plants (see Section 4.4: Biological Resources above)</p> <p>MM Biology-4: Invasive Plants and Soil Pathogens (see Section 4.4: Biological Resources above)</p> <p>MM Biology-5: Invasive Plant Detection and Response (see Section 4.4: Biological Resources above)</p> <p>MM Biology-6: San Francisco Garter Snake Protection Measures (see Section 4.4: Biological Resources above)</p> <p>MM Biology-7: California Red-Legged Frog Protection Measures (see Section 4.4: Biological Resources above)</p> <p>MM Biology-8: Foothill Yellow-Legged Frog Protection Measures (see Section 4.4: Biological Resources above)</p> <p>MM Biology-9: Western Pond Turtle Protection Measures (see Section 4.4: Biological Resources above)</p> <p>MM Biology-10: California Giant Salamander, Santa Cruz Black Salamander, and Red-Bellied Newt Protection Measures (see Section 4.4: Biological Resources above)</p> <p>MM Biology-11: Nesting Bird Protection Measures (With the Exception of Marbled Murrelet) (see Section 4.4: Biological Resources above)</p> <p>MM Biology-12: Marbled Murrelet Nest Protection Measures (see Section 4.4: Biological Resources above)</p> <p>MM Biology-13: Special-Status Insect Host Plant Protection (see Section 4.4: Biological Resources above)</p> <p>MM Biology-14: Salmonid Protection Measures (see Section 4.4: Biological Resources above)</p> <p>MM Biology-15: Monarch Butterfly Overwintering Aggregation Protection (see Section 4.4: Biological Resources above)</p> <p>MM Biology-17: Sensitive Natural Communities (see Section 4.4: Biological Resources above)</p> <p>MM Biology-18: Compensatory Mitigation for Impacts to Sensitive Natural Communities (see Section 4.4: Biological Resources above)</p> <p>MM Biology-19: Wetlands and Other Potentially Jurisdictional Aquatic Resources (see Section 4.4: Biological Resources above)</p> <p>MM Biology-20: Significant and Heritage Tree Ordinances (see Section 4.4: Biological Resources above)</p> <p>MM Cultural-1: Pre-Activity Surveys and Avoidance of Impacts to Cultural Resources (see Section 4.5: Cultural and Tribal Cultural Resources above)</p> <p>MM Cultural-2: Treatment of Unavoidable Resources (see Section 4.5: Cultural and Tribal Cultural Resources above)</p> <p>MM Cultural-3: Human Remains (see Section 4.5: Cultural and Tribal Cultural Resources above)</p> <p>MM Geology-1: Prescribed Herbivory Land and Trail Control (see Section 4.6: Geology and Soils above)</p> <p>MM Geology-2: Erosion Control and Slope Stability Measures (see Section 4.6: Geology and Soils above)</p> <p>MM Geology-4: Soil Assessment for Construction of New Water-Supply Pipelines (see Section 4.6: Geology and Soils above)</p> <p>MM Hazards-1: Avoidance of Contaminated Sites (see Section 4.8: Hazards, Hazardous Materials, and Wildland Fire)</p> <p>MM Hydrology-1: Water Quality Protection During Waterway Crossing or Work Near Waterbodies (see Section 4.9: Hydrology and Water Quality below)</p>	Less than significant

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		MM Noise-1: Noise Restrictions (see Section 4.10: Noise below) MM Transportation-1: Emergency Responders and Access (see Section 4.12: Transportation below)	
Impact Hazards-8: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Prescribed burns have the potential to change the soil profile, resulting in the top layer eroding in the short-term before new growth comes back, which could increase slope instability. MM Geology-2 and MM Geology-3 require installation of erosion control measures to stabilize the soils and use of existing facilities for fire lines where they occur to reduce the potential for landslides, which would reduce impacts to less than significant.	Potentially significant	MM Geology-2: Erosion Control and Slope Stability Measures (see Section 4.6: Geology and Soils above) MM Geology-3: Fire Lines During Prescribed Burns (see Section 4.6: Geology and Soils above)	Less than significant
4.9 Hydrology and Water Quality			
Impact Hydrology-1: Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or substantially alter the existing drainage pattern of the area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or off site. Vegetation management activities would result in some minor modification to the hydrologic conditions in the Program area. Water quality impacts from sedimentation and siltation of waterbodies or waterways would occur primarily from the actions associated with vegetation treatments and non-native shrub and understory removal. Sedimentation can increase downstream turbidity, which is considered a water quality impact. Sediment runoff can carry heavy metals (e.g., mercury, arsenic and copper) and nutrients (e.g., phosphorus and nitrogen), and biological pathogens (e.g., coliform, cryptosporidium, and giardia). Several waterways and waterbodies that currently do not meet water quality objectives under Section 303(d) are located within and surrounding Midpen lands. The impaired waterbodies and waterways are included in Table 4.8-3. MM Geology-1 requires that prescribed herbivory not be located within 100 feet of a waterbody or waterway. MM Geology-2 and MM Geology-3 require implementation of additional erosion control measures to avoid or minimize erosion associated with sedimentation of waterways or waterbodies specifically where groundcover would be reduced to less than 70 percent. MM Hydrology-1 includes measures that pertain to stream or other waterway crossings that could be needed on a rare occasion when working on FRAs. Implementation of these measures would reduce impacts on water quality to less than significant.	Potentially significant	MM Geology-1: Prescribed Herbivory Land and Trail Control (see Section 4.6: Geology and Soils above) MM Geology-2: Erosion Control and Slope Stability Measures (see Section 4.6: Geology and Soils above) MM Geology-3: Fire Lines During Prescribed Burns (see Section 4.6: Geology and Soils above) MM Hydrology-1: Water Quality Protection During Waterway Crossing or Work Near Waterbodies Vehicles and heavy equipment shall avoid instream crossings. On rare occasions, such as to perform work to create or maintain FRAs, equipment may need to access off an existing road into a treatment area through a waterbody. If instream (waterway) crossings must occur because no other options for access are reasonably available, the crossing shall be performed when the stream is dry and soils are not saturated. The crossing shall be performed in a way that does not result in any permanent alteration of the stream bank or bed (e.g., choosing areas with stable soils and the least slope or with vegetation to protect the bed and bank). If water is flowing or the stream has flow or saturation, temporary plates or the equivalent shall be installed from bank to bank for equipment access across the waterway. If an instream crossing that could impact the bank or bed or riparian vegetation is needed, the crossing shall only be performed after and in accordance with the appropriate 1602 Streambed Alteration Agreement from CDFW and Section 404 and 401 Clean Water Act permits. All soils shall be restored after the instream crossing and banks revegetated, as needed, after the work is completed, in accordance with permits.	Less than significant
Impact Hydrology-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Program may impede sustainable groundwater management of the basin. The majority of Midpen lands are located upgradient of the Santa Clara Valley groundwater basin and no substantial groundwater basins are located beneath Midpen lands. The Santa Clara subbasin (Basin 2-009.03) is rated as high priority under the Sustainable Groundwater management Act (SGMA). Valley Water is the groundwater sustainability agency (GSA) for the Santa Clara subbasin, which is sustainably managed through the comprehensive activities described in Valley Water's 2016 Groundwater Management Plan. Midpen currently does not use groundwater because of limited groundwater production capabilities in the area. Implementation of the Program would not result in impacts related to depletion of groundwater supplies nor the implementation of Valley Water's 2016 Groundwater Management Plan.	Less than significant	No mitigation measures are required.	N/A
Impact Hydrology-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) substantially increase the rate or amount of surface runoff	Potentially significant	MM Geology-2: Erosion Control and Slope Stability Measures (see Section 4.6: Geology and Soils above) MM Hydrology-1: Water Quality Protection During Waterway Crossing or Work Near Waterbodies (see above)	Less than significant

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<p>in a manner which would result in flooding on- or off-site; ii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iii) impede or redirect flood flows.</p> <p>Physical alteration of streams or rivers and substantial increase of impervious surface are not proposed for the Program. However, unintentional alteration of streams or rivers could occur from landslides or debris flows resulting from vegetation management activities or from sedimentation caused by erosion. The minor addition of impervious surface from proposed infrastructure would occur as a part of Program implementation. Implementation of prescribed burns could expose soils and potentially alter drainage patterns through increased surface runoff. Surface water flows may also increase in areas where new or expanded roads and wildland fire infrastructure are added. MM Geology-2 and MM Hydrology-1 would be implemented to reduce impacts to less than significant.</p>			
<p>Impact Hydrology-4: Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. The Program covers a hilly, mountainous, primarily inland area, which precludes the chance of the area being inundated by tsunami. Midpen participates in flood protection programs throughout the region. Risk of tidal flooding is prevalent in Ravenswood and Stevens Creek OSPs; however, vegetation management and soil disturbing activities are not proposed for these areas under the VMP. Seiche events are not likely to occur within Midpen lands due to site elevation and distance from the Pacific Ocean and San Francisco Bay.</p>	Less than significant	No mitigation measures are required.	N/A
<p>Impact Hydrology-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. All surface waterbodies identified in Table 4.8-3 downstream of Midpen lands could be impacted by additional contaminants as a result of Program implementation. Increased contamination of an impaired waterbody or waterway, such as additional sedimentation in San Gregorio Creek or San Francisquito Creek, would conflict with the Basin Plan. A small portion of Midpen lands are located within the Santa Clara subbasin and are subject to Valley Water’s 2016 Groundwater Management Plan goals and strategies. As discussed under Impact Hydrology-2, Program activities would not result in impacts related to depletion of groundwater supplies. MM Geology-1, MM Geology-2, and MM Geology-3 require implementation of additional erosion control measures to minimize erosion associated with specific Program activities including prescribed herbivory, prescribed burns and pile burns near waterways or waterbodies, and creation of new fire lines. MM Hydrology-1 requires that instream crossings be avoided to the greatest extent feasible. Implementation of these measures would reduce impacts on Basin Plan to less than significant.</p>	Potentially significant	<p>MM Geology-1: Prescribed Herbivory Land and Trail Control (see Section 4.6: Geology and Soils above) MM Geology-2: Erosion Control and Slope Stability Measures (see Section 4.6: Geology and Soils above) MM Geology-3: Fire Lines During Prescribed Burns (see Section 4.6: Geology and Soils above) MM Hydrology-1: Water Quality Protection During Waterway Crossing or Work Near Waterbodies (see above)</p>	Less than significant
4.10 Noise			
<p>Impact Noise-1: Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the program in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Use of mechanical tools, chemical application and prescribed burning equipment, generators, and other heavy equipment could generate daytime noise that exceeds general acceptable noise levels established by the counties where Midpen lands are located. If unnecessarily excessive noise is generated near sensitive receptors, it has the potential to conflict with local noise standards. MM Air Quality-3, MM Air Quality-4, MM Hazards-3, and MM Noise-1 require that the appropriate buffer distances are established when implementing prescribed burning and operating certain types of equipment near sensitive receptors. Noise can also have impacts on biological resources. Refer to Section 4.4 for</p>	Potentially significant	<p>MM Air Quality-3: Asbestos Management (see Section 4.3: Air Quality above) MM Air Quality-4: Midpen Employee Protection from Prescribed and Pile Burn Air Pollutants (see Section 4.3: Air Quality above) MM Biology-11: Nesting Bird Protection Measures (With the Exception of Marbled Murrelet) (see Section 4.4: Biological Resources above) MM Biology-12: Marbled Murrelet Nest Protection Measures (see Section 4.4: Biological Resources above) MM Hazards-3: Safety Around Prescribed Burns (see Section 4.8: Hazards, Hazardous Materials, and Wildland Fire above)</p> <p>MM Noise-1: Noise Restrictions</p>	Less than significant

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a discussion of noise impacts on sensitive species, particularly marbled murrelet and nesting birds. These impacts are mitigated through MM Biology-11 and -12. Noise impacts would be reduced to less than significant with implementation of these measures.

Construction Hours

All construction hours identified in the local noise ordinances shall be followed.

Buffer Zones (Santa Clara and Santa Cruz counties)

Buffer zones shall be established to reduce noise at sensitive receptors to the maximum extent feasible to reduce noise to the conditional limits identified by Santa Clara and Santa Cruz counties’ noise ordinances.

The buffer zone distances are shown below that identify the distances needed for noise levels to remain below 75 dBA L_{eq} for work occurring less than 10 days, and below 60 dBA L_{eq} for work occurring for 10 days or longer in Santa Clara County and below 75 dBA Leq for Santa Cruz County. These distances do not need to be implemented where it is not technically feasible to implement them per the applicable noise ordinances that requires that noise must only be reduced where it is possible to do so (i.e., Santa Clara County Noise Ordinance, or considering the necessity of the work in Santa Cruz County).

A violation of the noise ordinances would only occur where the noise exceeded the conditional limits set by the jurisdiction, but there is a feasible way to reduce that noise (e.g., placing a chipper within 50 feet of a receptor when it could feasibly be placed 100 feet away is a violation, but using a chainsaw to cut a large hazard tree within 50 feet of a sensitive receptor would not be a violation assuming no other feasible methods to remove that tree are available).

Equipment	Approximate Buffer Between Equipment and Sensitive Receptors (feet) – for Work Occurring in One Location for Less Than 10 Days (Not to Exceed 75 dBA L _{eq}) in Santa Clara County or for any work duration in Santa Cruz County	Approximate Buffer Between Equipment and Sensitive Receptors (feet) – for Work Occurring in One Location for 10 Days or Longer (Not to Exceed 60 dBA L _{eq}) in Santa Clara County
Chipper	100	568
Tractor	90	506
Generator/ water pump	71	402
Chainsaw/ excavator	64	358
Skid steer	--	284
Backhoe/ brushcutter	--	254
Fire engine/ crane	--	226
Leaf blower	--	201
Pickup truck	--	179
Power pole saw	--	80

Minimization Measures and Disturbance Coordinator

If these restrictions are not implementable between the receptors and a given location, Midpen shall notify the resident or contact at the sensitive receptor within one week of conducting the activity to schedule the activity. Activities shall be coordinated to minimize disturbance to the receptor, such as conducting the work when no one is there. Engineering controls could also be used, if feasible, to keep noise levels below 75 dBA Leq for work occurring in one location for less than 10 days

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		or 60 dBA Leq for work occurring in one location for 10 days or longer. Midpen shall designate a disturbance coordinator to address any noise complaints under these circumstances. The noise coordinator can be the person performing the work.	
Impact Noise-2: Generate excessive groundborne vibration or groundborne noise levels. No equipment that could generate a substantial amount of vibration, such as an impact pile driver or compactor, would be used. Ground vibration from heavy equipment and trucks dissipates within a close distance of the source. Equipment and trucks would rarely be used within 10 feet of buildings. Activities would be temporary and periodic. The impact from vibration would be less than significant.	Less than significant	No mitigation measures are required.	N/A
Impact Noise-3: For a program located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the proposed program could expose people residing or working in the project area to excessive noise levels. The majority of Midpen lands are not located within an area with an airport land use plan or within the vicinity of a private airstrip. Ravenswood OSP is within 2 miles of the Palo Alto Airport but is not within the airport influence area. Implementation of the Program would not result in excessive noise levels for receptors in the area from being located within an adopted airport land use plan or near public airports or private airstrips.	No impact	No mitigation measures are required.	N/A
4.11 Recreation			
Impact Recreation-1: Increase the use of existing recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated or necessitate construction or expansion of recreational facilities. Activities proposed as part of the Program would involve prescribed burning and use of equipment and vehicles that may result in trail and road closures, limiting recreational opportunities within Midpen lands, which could increase use of other recreational facilities resulting in deterioration. Closures would not affect a substantial number of recreationalists or substantially limit use of Midpen lands due to the relatively small subset of the overall quantity of roads and trails that would be closed at any one time. Various activities could alter the visual character of some areas, potentially affecting the recreational experience if the visual character is significantly degraded or availability of recreational areas diminished on Midpen lands to the level that recreationalists would significantly increase use of other facilities leading to deterioration. Smoke and other related safety hazards caused by prescribed burns could impact the experience of recreationalists. Midpen requires use of warning signs or trail closure signs during operation of heavy equipment, as well as a spotter to warn the equipment operator of and control visitors around equipment (MO Manual Section 08.016; Safety Manual Sections 1.6.5.15 and 1.6.5.16). Implementation of MM Hazards-3 would reduce impacts from hazards to recreationalists from prescribed burns. The impacts on the recreational experience and availability of recreational areas to the extent that other resources would be used would be less than significant with mitigation.	Potentially significant	MM Hazards-3: Safety Around Prescribed Burns (see Section 4.8: Hazards, Hazardous Materials, and Wildland Fires above)	Less than significant
4.12 Transportation			
Impact Transportation-1: Increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) or conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities. Roads and intersections would not be modified, redesigned, or require maintenance as a part of the Program. No changes to the use of existing roadways would occur. Prescribed burn (staging or smoke) and roadside fuelbreak construction	Potentially significant	MM Hazards-3: Safety Around Prescribed Burns (see Section 4.8: Hazards, Hazardous Materials, and Wildland Fire above)	Less than significant

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Impact Description	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
or maintenance could temporarily impact traffic through lane or road closures. Implementation of MM Hazards-3 would reduce traffic impacts to less than significant.			
Impact Transportaiton-2: Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). During typical vegetation management activities, the maximum number of workers would be 30. Average daily, one-way vehicle trips throughout the year would range from approximately 6 trips to 60 trips (or less). The net new, average daily number of one-way vehicle trips associated with the Program could increase nominally but would not exceed the screening threshold of 110 trips per day. Impacts would be less than significant.	Less than significant	No mitigation measures are required.	N/A
Impact Transportation-3: Inadequate emergency access. Fuelbreaks adjacent to identified evacuation routes and designated Wildland Type 3 routes would be created and maintained as a part of the Program, allowing for safer and more efficient emergency access. As part of the Program, firefighting infrastructure, including access roads and staging locations, would be improved upon and potentially created in areas where adequate access is lacking. Several of the methods and activities proposed as part of the Program, including prescribed burning and mowing, could require lane or full road and trail closures that could slow or prevent emergency access into or through Midpen lands. MM Transportation-1 requires Midpen to implement provisions to allow access for emergency responders across or through any work site. Implementation of mitigation would ensure that emergency vehicles are provided access resulting in a less than significant impact.	Potentially significant	<p>MM Transportation-1: Emergency Responders and Access</p> <p>The following measures shall be implemented to ensure emergency access is maintained:</p> <ol style="list-style-type: none"> 1. At least one week prior to temporary lane or full closure of a public road, Midpen shall contact the appropriate emergency response agency/agencies with jurisdiction (e.g., CalTrans, County, City) to ensure that each agency is notified of the closure and any temporary detours in advance. 2. In the event of an emergency, roads (public roads, and Midpen-owned or managed roads) or access trails blocked or obstructed by activities shall be cleared to allow emergency vehicles to pass. 3. During temporary lane or road closures on public roads, Midpen shall use flaggers equipped with two-way radios. During an emergency, flaggers shall radio to the crew to cease operations and reopen the public road to emergency vehicles. 4. In work areas, all vehicles and equipment shall be parked so the road is not blocked or obstructed when there is no operator present to move the vehicle. 	Less than significant