EXHIBIT A

Butano State Park Forest Health Project

Project Plans and Specifications

Introduction:

The San Mateo Resource Conservation District (RCD), in collaboration with California State Parks Santa Cruz District (State Parks), was awarded CAL FIRE Forest Health Grant funding to conduct a mosaic of ecologically restorative forest health fuels reduction treatments on over 400 acres, strategically located throughout Butano State Park. Work will be conducted between **April 2023** and **November 2024**. *General Treatments* will include mechanical (391.3 acres) and manual (16 acres) understory vegetation removal to reduce the density and continuity of dead, dying, diseased, and overly dense vegetation and small diameter trees and to promote biodiverse ecosystems dominated by a mosaic of healthy vegetation representing various size and age-classes (Map 1). *Additional treatment* prescriptions have been identified in key locations to overlay the *General Treatments* by reducing the density of mid-range diameter and larger diameter dead, dying, diseased, and select live Douglas-fir trees (see the *Additional Treatments* section below). The key locations identified predominately overlap the General Treatment footprint, except in one location that adds approximately 7.8 acres of treatments, bringing the total acreage to be treated to approximately 415.1 acres (Map 1).

In the wake of the CZU Fire, CA State Parks, CAL FIRE, and SMRCD have sought to manage the ecosystems in Butano State Park in a manner that will promote health and resilience. The mission of CA State Parks is "To provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation." For the purposes of this project and treatments under the Forest Health Grant, this mission will be accomplished through a combination of ecologically restorative treatment types, shaded and non-shaded fuel breaks, and treatment activities including manual and mechanical thinning.

Environmental Compliance for the project was achieved through a Project Specific Analysis (PSA) and Addendum, under the California Vegetation Treatment Program Programmatic Environmental Impact Report (CalVTP PEIR). The PSA/Addendum approved a total of2103 acres of treatments, 415.1 acres of which will be implemented under this contract. The CalVTP permitting mechanism establishes a set of Standard Project Requirements (SPR's) and Mitigation Measures (MMs) that implementing agencies, including contractors, are responsible for following. SPR's were considered and built into the *Operational Specifications* listed below.

Project Site and Location:

This project will occur entirely within Butano State Park in San Mateo County. Butano State Park is a state-managed recreational property containing hiking, camping, and day-use facilities utilized by the public. Approximately 310.5 acres of mechanical and manual treatments are located within the Coastal Zone, which is identified as Environmentally Sensitive Habitat Area (ESHA) by the California Coastal Commission and may have additional requirements during project implementation (e.g., heavy equipment approval).

Butano State Park was identified as a priority location for forest health fuels reduction treatments due to unhealthy forest characteristics identified by the collaborators, which left the landscape susceptible to disease, wildfire, and shifts in species composition due to the lack of low-intensity disturbance. In the Fall of 2020, the CZU Lightning Complex Fire (CZU Fire) burned through the park at varying intensities. Areas of the park that burned at a low intensity have been left with a high density of dead, dying, and diseased understory vegetation. Areas that burned at a high intensity may take decades to recover and may support different plant communities than were present pre-fire.

Project Treatments:

The treatment areas are predominately comprised of overstocked Douglas-fir dominated forests, second growth coast redwood dominated forests, and various dense shrub communities. Proposed mechanical treatment areas are accessible by roads and trails and are designed to expand treatment area connectivity on slopes predominately less than 35% and no greater than 50%. Manual treatment areas are located around sensitive infrastructure, sensitive ecosystems, or strategic ridgelines with access to trails or roads and in proximity to mechanized treatment areas (Map 1).

General Treatments may include masticators and chippers, in addition to manual equipment, which will be used to remove dense stands of understory vegetation (less than or equal to 8" DBH) and ladder fuels to achieve a condition that will result in a healthy overstory of mature trees with select retained juvenile trees and understory vegetation. Understory vegetation and shrubs under the drip lines of trees shall be cut and masticated leaving root systems intact for resprouting. Mechanical treatment crews may utilize chainsaws and/or various other mechanized tools or hand tools to cut, clear, or prune herbaceous or woody species and ladder fuels. A mosaic of understory vegetation will be retained for wildlife habitat.

Additional Treatments will include a component of manual and mechanical thinning in concert with decking logs, chipping and spreading, or chipping and hauling biomass within the project area The *Additional Treatment* units are located on slopes predominately less than 35% and are accessible via roads and trails, however, some understory conditions, such as a significant component of large downed trees, may limit mechanical accessibility throughout the treatment area, making a component of manual treatments expected in the *Additional Treatment* areas.

Operational Specifications:

The following specifications will act as the requirements for the Contractor to operate safely and efficiently while protecting and conserving sensitive resources and the beneficial uses of Butano State Park. These specifications were written to incorporate SPRs required by the CalVTP PSA/Addendum, which satisfies CEQA and Coastal Act compliance for this project.

General Specifications

1. A pre-designated Contractor foreman will be required to be on site at all times while the crew is working. The foreman must be able to address concerns from RCD, CA State Parks, CAL FIRE, supervised designees, adjacent landowners, and/or the public.

- 2. Operations may occur during daylight hours from 7:00 a.m. to 6:00 p.m., Monday through Friday. No operations holidays. Consideration will be given to weekend operations based upon project progression. Consideration will also be given to beginning operations at 6:00 a.m. should daylight and weather conditions warrant.
- 3. Operations are expected to occur from May 1st October 15th. Operations may also occur outside of this window with RCD or CA State Parks approval, if saturated soil conditions do not exist; if operations from appurtenant roads and staging areas can be conducted from a stable operating surface; and if requirements under **Operations from October 15th May 1st**, **Watercourse Protections, Waterbreaks**, and **Wildlife Protection Avoidance Measures** can be adhered to.
- 4. Mechanized operations will cease when the following precipitation thresholds are met, per California Red-legged Frog (CRLF) avoidance measures:
 - a. For 24 hours after a rain event defined as any precipitation resulting in \geq 0.2 inch -1 inches throughout the year to avoid dispersing CRF.
 - b. For 48 hours after a rain event defined as any precipitation resulting in 1.0 inch 2.0 inches throughout the year to avoid dispersing California red-legged frog.
 - c. For 72 hours after a rain event defined as any precipitation resulting in ≥ 2 inches.

California Red-legged Frog Precipitation Shut Down Periods for Mechanized Operations		
Precipitation Amount	Shut down period	
≥ .20 inch - 1 inch	24 hours	
1 inch - 2 inches	48 hours	
≥ 2 inches	72 Hours	

^{*} Handwork W/O track chippers may continue

- 5. Mechanized equipment operations shall not occur if, from 6:00 am to 6:00 pm the day prior to proposed operations, there is a National Weather Service (NWS) forecast average of rain 30% or greater for the day of proposed operations.
- 6. The Contractor will ensure that toilet and garbage disposal facilities are available for crews and are used in staging areas identified for operations.
- 7. The Contractor is responsible for assessing treatment areas to determine where traffic control may be needed. Masticated, chipped, or treated material of any kind should not make contact with any public road. If any masticated material contacts public roads, it should be cleaned up immediately.
- 8. The Contractor will be responsible for preserving survey markers and will replace damaged markers at their own expense using surveyors acceptable to the landowner.
 - a. The Contractor will also be responsible for any damage to property infrastructure or private property and will replace or repair these items at their own expense through means acceptable to RCD or CA State Parks.

- 9. Any appurtenant seasonal roads and staging areas shall be filmed ahead of active operations by RCD, CA State Parks, or their supervised designee, and the Contractor shall be responsible for returning the roads and staging areas to an "as good or better" condition following operations.
- 10. Contractor shall be responsible for maintaining a spill kit, that is adequate to manage any feasible spills, containing the following items:
 - a. Protective clothing or personal protective equipment to protect body parts most likely to be exposed to spilled hazardous substances.
 - b. Tools that clean up a spill, consisting of highly absorbent towels, pads and at least six(6), 3-inch x 10-foot-long spill absorbent socks.
- 11. Prior to beginning operations, RCD, CA State Parks, and/or their supervised designee will conduct a pre-operational meeting to discuss project implementation, special protection measures and any potential operational constraints regarding the conduct of this contract that may impact project completion; including, but not limited to: planned start date; on site inspections from RCD, CA State Parks, CAL FIRE, or their supervised designee; operating schedule, and order of project completion.
- 12. Special Treatment Zones and Equipment Exclusion Zones/Flagging and treatment
 - a. Special Treatment Zones (STZ's); Areas flagged with orange/white striped labeled "Special Treatment Zone" will require consultation with RCD, CA State Parks, or their designated on-site representative before conducting any work in proximity to these zones.
 - b. Equipment Exclusion Zones (EEZ's); Areas flagged with yellow and white striped flagging labeled "Equipment Exclusion Zone" restricts heavy equipment and track chippers from entering these zones except at designated sites flagged to cross a watercourse represented by a strip of white flagging and a strip of pink flagging placed together.
- 13. RCD, CA State Parks, and/or their supervised designee shall flag two example treatment mark areas for Contractor review at the pre-operational meeting.
- 14. Contractors and all heavy equipment operators are required to utilize *Avenza* software on phones or tablets capable of viewing PDF georeferenced operations maps provided by RCD and CA State Parks to identify the Contractors location, stay within project treatment areas or appurtenant infrastructure approved for operational use, and avoid sensitive resource areas.
 - a. RCD, CA State Parks, or their supervised designee will field verify the completion of these areas on an appropriate and timely basis.
 - b. Training will be provided to the Contractor on how to use Avenza software.

- 15. The Contractor shall prepare and keep record of a daily checklist made available at the request of RCD, CA State Parks, or their supervised designee that checks the following for daily operations:
 - a. Names of contractor's daily on-site operational personnel and equipment. Equipment with Hobbs hour meters will log daily meter readings.
 - b. Inspections around the equipment and staging area for any wildlife that may have decided to occupy the area, particularly CA Red Legged Frogs (CRF). If any CRF are found, operations at the location must stop and RCD, CA State Parks, or their supervised designee must be notified immediately. Contractor will not harm, harass, or injure CRF.
 - c. Inspections for any equipment leaks.
 - d. Ensure all water tanks for fire suppression are full.
 - e. Confirm that nesting bird, bat roost, and other necessary surveys are completed for the treatment areas proposed for operations that day if operating from February 1st to August 31st.
 - f. Record wind speed and relative humidity measurements at the beginning of operations, 12:00 p.m., and at the conclusion of operations each day.

Tree Treatments

The following section outlines the specific treatment prescriptions for the General Treatment and Additional Treatments (Table 1, Map 1).

Contractor Responsibility			
Tree Treatments	Acres	Within General Footprint	
General (Manual)	16.0		
General (Mechanical)	391.3		
OGRW Dead and Dying - Ben Reis Campground	7.8	No	
DF Overtake HW - Olmo Ranch House	26.0	Yes	
DF Dominant - Kiosk	7.8	Yes	
DF Dominant - Butano Fire Road	11.2	Yes	
Total Acreage Footprint	415.1		

Table 1: Treatment Acreage Breakdown by Treatment Prescription

<u>General Treatment Prescription (~407.3 acres [~16.0 Manual & ~391.3 Mechanical])</u>

 The treatment goal is to create a more healthy and diverse forest, comprised of approximately 100 - 200 healthy trees per acre through the reduction of understory vegetation and small diameter trees. Generally, remove dead, dying, and diseased trees and select live trees less than or equal (<) to 8 inches DBH. Healthy trees selected for retention that are less than 8 inches DBH will achieve an approximately 10-20 foot spacing where feasible.

- a. Where there are only stands made up of trees less than 8 inches DBH, these stands of smaller trees will be spaced approximately 10-20 feet apart. Healthy trees less ≤8 inches DBH will be favored over diseased trees ≤8 inches DBH to meet the spacing goal and maintain a shaded fuel break.
- b. All stump heights will be cut no higher than 6 inches above the ground. All cuts will be a flat or parallel cut to the ground and will have a smooth appearance with no frayed material visible.
- 2. Lopping and slash requirements for handwork where chipping is not feasible:
 - a. In treatment areas identified as handwork that are within 50 feet of a property line, road, water tanks, exposed water lines, water uptakes or other key infrastructure or assets identified by RCD, CA State Parks, or their supervised designee; slash height shall not exceed 12 inches in height.
 - b. In other treatment areas identified as handwork, slash height shall be treated to between 18-24 inches in height.
 - c. In handwork areas, all logs on the ground less than 16 inches in diameter shall be left with as few cuts as possible to put them into contact with the ground.
- 3. No cutting California buckeye (Aesculus californica), California nutmeg (Torreya californica), California Big leaf-maple (Acer macrophyllum), western sycamore (Platanus racemosa), box elder (Acer negundo var. californicum), Red elderberry (Sambucus racemosa) and blue elderberry (Sambucus cerulea), except where high concentrations of these species in the understory obstruct achieving fuel reduction goals or their removal is warranted for crew safety or proximity with respect to homes or other infrastructure assets including roads and staging areas, these areas should be identified by RCD, CA State Parks, or their designee.
- 4. Micro stands of untreated oak trees with a cluster radius of approximately 25 feet (50-foot diameter) shall be periodically maintained throughout the project area where feasible; and should be spaced approximately 75-150 feet apart depending on the steepness of slope related to exacerbation of fire behavior or proximity to key infrastructure and assets.
- 5. Damage to residual trees shall be minimized to the greatest extent feasible. If there is excessive damage to residual trees or shrubs, the contractor shall remove these specimens.
- 6. In areas designated for manual treatment, standing dead trees ≤16 inches DBH shall be removed. In areas designated for mechanical treatment, any standing dead trees ≤12 inches DBH shall be removed, unless otherwise flagged for retention. In areas at least 100 feet away high human occupancy areas (e.g., parking lots), at least 1 standing dead tree shall remain per acre.
- 7. All dead and downed trees <16 inches in diameter will be delimbed and processed by a masticator, chipper, or an otherwise agreed upon method; with the remaining trunks that

cannot be chipped left in place unless several trees have created a piled concentration. In this case, the remaining tree trunks will be separated by at least 10 feet from any other logs and left on site.

- a. Down dead trees >16 inches diameter may be masticated for access around treatment areas but, should remain in place where feasible unless they create a significant fire hazard and shall be separated by at least 10 feet from any other logs and left on site.
- b. Contractor shall consider maintaining an appropriate number of snags and downed woody debris within the treatment areas. Target snags should be approximately 1-2 per acre and similar for downed woody debris >16 inches in diameter.
- 8. A tree of any size considered a hazard and direct threat to personal safety or infrastructure may be removed with concurrence of the landowner.
- 9. RCD, CA State Parks, or their designee reserve the right to reasonably adjust tree treatments in areas where additional sensitive resources are identified and/or may adjust the treatment prescription as needed to meet specific conditions.

Additional Treatment Prescriptions

Some of the following *Additional Treatments* include decking logs in landings, some of which may require logs to be hauled a reasonable distance to a log landing identified by CA State Parks, RCD, or their supervised designee at the time of operations. Expected log landing locations will be identified prior to the bid tour. At this time, it is *estimated* that the Contractor should expect to move approximately 25-30 loads of logs (via short logger or 10-wheeler dump truck, or a combination) to be decked at a landing within reasonable proximity to the treatment areas. Please refer to the specifications below and Map 1 to identify units that may require log hauling.

Old Growth Redwood (OGRW) Dead & Dying – Ben Reis Campground (~7.8 acres)

- The treatment goal is to create a healthier forest and improve safety around the campground through the reduction of understory vegetation, small diameter trees, dead and dying trees, and select Douglas-fir. Generally, remove dead, dying, and diseased trees and select live trees < 8 inches DBH, remove all dead, dying, and diseased trees <16 inches DBH, and remove hazard trees of any size that are considered an immediate or direct threat to crew safety or campground use areas.
 - a. Damage to residual trees, especially redwoods, shall be minimized to the extent feasible. If there is excessive damage to residual trees or shrubs, the contractor shall remove these specimens.
 - b. Trees shall be felled directionally away from infrastructure and sensitive resources.
 - c. A component of understory vegetation and small diameter trees shall be retained for campground screening.
 - d. All stump heights for trees ≤18 inches DBH will be cut no higher than 6 inches above the ground. All stump heights for trees >18 inches DBH will be cut no higher than 12 inches above the ground. All cuts will be a flat or parallel cut to the ground and will have a smooth appearance with no frayed material visible.

- 2. Removed trees >16 inches that cannot be chipped can be left in place unless several trees have created a piled concentration. In this case, the remaining tree trunks will be separated by at least 10 feet from any other logs and left on site.
- 3. Removed trees >8 inches to \leq 16 inches will be delimbed and chipped into a chip van to be dumped and spread in select locations of the campground.
- 4. RCD, CA State Parks, or their designee reserve the right to reasonably adjust tree treatments in areas where additional sensitive resources are identified and/or may adjust the treatment prescription as needed to meet specific conditions.

Douglas-fir (DF) Overtaking Hardwood (HW) – Olmo Ranch House (~26.0 acres)

- The treatment goal is to create a healthier forest and promote the growth of larger hardwoods through the reduction of Douglas-fir and hazard trees, which are encroaching upon native hardwood stands. Generally, remove all Douglas-fir >8 inches to ≤36 inches DBH.
 - a. Retain approximately 1-2 selected Douglas-fir trees per acre that are >24 inches DBH.
 - Damage to residual trees, especially hardwoods and redwoods, shall be minimized to the extent feasible. If there is excessive damage to residual trees or shrubs, the contractor shall remove these specimens.
 - c. Trees shall be felled directionally away from infrastructure, the meadow, and sensitive resources.
 - d. All stump heights for trees ≤18 inches DBH will be cut no higher than 6 inches above the ground. All stump heights for trees >18 inches DBH will be cut no higher than 12 inches above the ground. All cuts will be a flat or parallel cut to the ground and will have a smooth appearance with no frayed material visible.
- Removed trees >16 inches shall be manufactured into logs for utilization (log lengths will be determined at the time of operations) and decked in landings identified by CA State
 Parks, RCD, or their supervised designee at the time of operations. Landings will be located within reasonable proximity to operations.
- Removed trees >8 inches to ≤16 inches will be delimbed and masticated or chipped.
 Trunks that cannot be chipped can be left in place unless several trees have created a piled concentration. In this case, the remaining tree trunks will be separated by at least 10 feet from any other logs and left on site.
- RCD, CA State Parks, or their designee reserve the right to reasonably adjust tree treatments in areas where additional sensitive resources are identified and/or may adjust the treatment prescription as needed to meet specific conditions.

Douglas-fir (DF) Dominant Stands – Butano Fire Road and Entrance Kiosk (~19.0 acres)

- The treatment goal is to create a more healthy and diverse forest through the reduction of select Douglas-fir trees that retains a variety of habitat characteristics and diameters. Generally, remove select Douglas-fir trees >8 inches to ≤36 inches DBH. Remove hazard trees of any size that are considered an immediate or direct threat to crew safety, park infrastructure, or recreational use areas.
 - a. Damage to residual trees shall be minimized to the extent feasible. If there is excessive damage to residual trees or shrubs, the contractor shall remove these specimens.
 - b. Trees shall be felled directionally away from infrastructure and sensitive resources.
 - c. A component of understory vegetation and small diameter trees shall be retained for campground screening.
 - d. All stump heights for trees ≤18 inches DBH will be cut no higher than 6 inches above the ground. All stump heights for trees >18 inches DBH will be cut no higher than 12 inches above the ground. All cuts will be a flat or parallel cut to the ground and will have a smooth appearance with no frayed material visible.
 - 2. Removed trees >8 inches:
 - a. In the Butano Fire Road Unit trees will be cut and decked at a log landing within reasonable proximity to the treatment unit that is identified by CA State Parks, RCD, or their supervised designee at the time of operations.
 - In the Entrance Kiosk Unit trees will be cut and chipped into a chip van and dumped at a location within the project area determined by RCD, CA State Parks, or their supervised designee within reasonable proximity to the unit; or manufactured into short logs and hauled to landings within a reasonable distance from the treatment area to be decked.
- 3. RCD, CA State Parks, or their designee reserve the right to reasonably adjust tree treatments in areas where additional sensitive resources are identified and/or may adjust the treatment prescription as needed to meet specific conditions.

Tree Pruning Treatments

- Conifer trees >8 inches DBH will be pruned (live and dead limbs) up to a maximum height of 8 feet, except next to public road surfaces where the maximum pruning height is 12 feet. No pruning will be done to a height greater than 33% of total tree height. Only dead limbs on hardwoods shall be pruned.
- 2. Conifer limbs may be pruned with a masticator, but pruned ends shall have a smooth appearance with no frayed material visible especially in areas visible to the public. Note: This may require follow-up handwork.
- 3. In areas where damage to secondary lateral hardwood limbs is expected due to mechanical mastication, hardwoods shall be pruned by hand using ANSI A300 standards to facilitate access for mastication equipment and minimize damage to hardwoods species. It is expected that the amount of handwork will be minimal and focused on a few key areas

occupied by larger coast live oaks. RCD, CA State Parks, or their designee will provide instruction on hardwood pruning techniques using recognized arboricultural guidelines as needed.

Understory Vegetation and Shrub Treatments

- 1. Understory vegetation and shrubs under the drip lines of trees shall be cut and masticated leaving root systems intact for resprouting except:
 - a. The contractor shall not masticate, or remove through handwork, hydrophytic riparian species such as (e.g., sedges [*Carex spp.*], rushes [*Juncus spp.*], western azalea [*Rhododendron occidentale*], red elderberry [*Sambucus racemosa*] and blue elderberry [*Sambucus cerulea*], and ferns [Pteridophyta]) unless there is a safety issue, and that species needs to be removed.
 - Where significant stands of California hazelnut (*Corylus cornuta*) exist, Contractor shall maintain a component of these shrubs at a spacing between 25 – 100 feet depending on frequency per acre, steepness of slope related to exacerbation of fire behavior, and/or proximity to key infrastructure and assets.
- 2. Outside of the drip line of retained trees and shrubs shall be cut and masticated leaving root systems intact for resprouting to achieve a horizontal crown separation of approximately 50-75 feet. Spacing may be closer to 50 feet on flatter ground and 75 feet on steeper ground or completely removed to provide defensible space when in proximity to infrastructure or near homes within treatment areas. Remaining clumps of shrubs should not exceed approximately 15-25 feet in diameter and will consist of healthy appearing specimens where feasible. At no time shall more than 66% of any contiguous stand of shrubs mapped in a single treatment polygon be removed (a minimum of approximately 35% retention and a target of approximately 50% retention will be left in a mosaic pattern to maintain a varied level of habitat continuity throughout the polygon).
 - a. Consideration shall be given to maintaining a diversity of understory vegetation and shrub species in these areas.
 - b. Shrubs will be retained in clumps or shrub islands and in a manner that breaks long sight distances and provide adequate cover for wildlife.
- 3. Woodrat nests shall receive a 5-foot buffer at minimum. The majority of living vegetation associated with woodrat nest complexes should remain.
- 4. Damage to residual understory vegetation and shrubs shall be minimized to the greatest extent feasible.
- 5. RCD, CA State Parks, or their designee reserve the right to reasonably adjust understory vegetation and shrub treatments in areas where additional sensitive resources are identified and/or may adjust the treatment prescription as needed to meet specific conditions.

Treated Vegetation within Treatment Areas

- 1. The residual masticated material shall remain uniformly spread to the extent feasible within the project area, shall not exceed a depth of approximately six inches (6") and should average approximately three inches (3"), and individual pieces shall not exceed two feet (2') in length or three inches (3") in maximum diameter to support regeneration in the understory.
- 2. Excessive residual masticated material shall not obstruct water flow in drainage features such as ditches and culverts. Such material shall be removed by the contractor prior to a forecasted 30% precipitation event or upon completion of operations, whichever occurs first.
- 3. Residual masticated material should be utilized to cover approximately 75% of any areas bared during operations and shall not be piled at the base of remaining trees or sensitive vegetation.
- 4. Upon completion of a treatment area the contractor shall ensure that all roads and trails are open and passable.
 - a. Scattered debris is acceptable on the trail surface but not to the point that it creates any significant tripping hazards.
- 5. Damage to residual trees and shrubs shall be minimized to the greatest extent feasible. If there is excessive damage to residual trees or shrubs, the contractor shall remove those specimens.
- 6. RCD, CA State Parks, or their designee reserve the right to reasonably adjust treatments in areas where additional sensitive resources are identified and/or may adjust the treatment prescription as needed to meet specific conditions.

Acceptable Heavy Equipment

- 1. Excavator with a boom mounted masticating head capable of reaching a minimum distance of 20 feet.
- 2. Small, tracked tractor such as a skid steer or mini excavator with masticating head capable of working under 8-foot canopies.
- 3. Tracked wood chipper capable of handling material >16" DBH.
- 4. Chip van and 10-wheeler log truck for hauling wood chips and logs.
- 5. Other heavy equipment may be proposed for use by the Contractor and must be approved by RCD, CA State Parks, or their designee. To propose other heavy equipment, the Contractor should be prepared with equipment dimensions, weight, and photos of equipment.

General Provisions for Heavy Equipment

- 1. Heavy equipment shall not operate:
 - a. In any Watercourse and Lake Protection Zones (WLPZ), Special Treatment Zones (STZ), or Equipment Exclusion Zones (EEZ);
 - b. On unstable areas, as identified and flagged by a Registered Professional Forester (RPF) or their qualified designee, and shown on the operations map;
 - c. On any paved or chip-sealed surface, with the exception that heavy equipment with rubber tracks or excavators with street pads may operate on such surfaces;
 - i. The contractor shall be responsible for damage to surfaced roads resulting from heavy equipment use.
 - ii. The contractor shall be responsible for watering, installing waterbars, and grading dirt or rocked roads that have been impacted by the contractor's actions. Such roads shall be returned to their preoperational original condition.
 - iii. Heavy equipment operation shall cease if the activity generates a significant amount of dust that impedes visibility.
 - d. On any day where the rain forecast average is greater than 30% averaged hourly from 6:00 a.m. to 6:00 p.m.
 - e. 24 hours after a rain event defined as any precipitation resulting in 0.2 inches throughout the year to avoid dispersing California red-legged frog.
 - f. 48 hours if after a rain event defined as any precipitation resulting in 1.0 inches or greater throughout the year to avoid dispersing California red-legged frog.
 - g. On saturated soils as defined in 14CCR §895.1 (shown here for reference):
 - "Saturated Soil Conditions means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur. Indicators of saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing material during Mechanized Equipment Operations, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning of wheels or tracks that produces a wet slurry, or (5) inadequate traction without blading wet soil or surfacing materials."
 - h. Outside of the project boundary;
 - i. In any other area identified for heavy equipment exclusion on the operations map.
- 2. Leaking equipment shall not be allowed into the project area. If, during the course of operations, a fuel or hydraulic fluid leak is discovered, the machine shall stop, and the leak shall be contained and fixed immediately. Operations with that equipment shall not resume until the leak has been fixed. The contractor shall remove and dispose of any contaminated soil.
- 3. Care shall be taken to avoid damage to leave-trees. It is acceptable for some areas to remain untreated if treatment is likely to result in excessive damage to leave-trees.
- 4. Main line access trails shall be flagged by RCD, CA State Parks, or their designee in each unit for ingress and egress from the staging area to reduce disturbance needed. Contractors will

be required to install waterbars on these main line trails or any other area used for equipment access where disturbance warrants treatment following operations or prior to the winter period.

5. No heavy equipment shall be fueled within 65 feet of any watercourse.

Fire Safety

Contractor operations may be suspended at any time by CAL FIRE, RCD, CA State Parks, or their designee based on red flag warnings, high fire danger, Unit Preparedness Levels or when on-site conditions determine that the operation of the machine presents an elevated risk of starting a fire.

- 1. The Contractor will have fire tools available on-site during operations for firefighting purposes per PRC 4428:
 - a. No person, except any member of an emergency crew or except the driver or owner of any service vehicle owned or operated by or for, or operated under contract with, a publicly or privately owned utility, which is used in the construction, operation, removal, or repair of the property or facilities of such utility when engaged in emergency operations, shall use or operate any vehicle, machine, tool or equipment powered by an internal combustion engine operated on hydrocarbon fuels, in any industrial operation located on or near any forest, shrubland, or grass-covered land between April 1st and December 1st of any year, or at any other time when ground litter and vegetation will sustain combustion permitting the spread of fire, without providing and maintaining, for firefighting purposes only, suitable and serviceable tools in the amounts, manner and location prescribed in this section.
 - b. On any such operation a sealed box of tools shall be located within the operating area, at a point accessible in the event of fire. This fire toolbox shall contain: one backpack pump-type fire extinguisher filled with water, two axes, two McLeod fire tools, and enough shovels so that each employee at the operation can be equipped to fight fire.
 - c. One or more serviceable chainsaws of three and one-half or more horsepower with a cutting bar 20 inches in length or longer shall be immediately available within the operating area, or, in the alternative, a full set of timber-felling tools shall be located in the fire toolbox, including one crosscut falling saw six feet in length (chainsaw acceptable), one double-bit axe with a 36-inch handle (single bit axe acceptable), one sledge hammer or maul with a head weight of six, or more, pounds and handle length of 32 inches, or more, and not less than two falling wedges.
 - d. Each passenger vehicle (including side-by-sides, UTVs, etc.) used on such operation shall be equipped with one shovel and one axe, and any other vehicle used on the operation shall be equipped with one shovel. Each tractor used in such operation shall be equipped with one shovel.
 - i. As used in this section:

- 1. "Vehicle" means a device by which any person or property may be propelled, moved, or drawn over any land surface, excepting a device moved by human power or used exclusively upon stationary rails or tracks.
- 2. "Passenger vehicle" means a vehicle which is self-propelled, and which is designed for carrying not more than 10 persons including the driver, and which is used or maintained for the transportation of persons but does not include any motortruck or truck tractor.
- 2. The Contractor shall provide and be responsible for operating and maintaining the following for initial ignition attack and fire suppression:
 - a. A full 500-gallon water buffalo trailer with a water pump and minimum 50-foot fire hose both attached to the trailer to be within reasonable proximity to operations at all times.
 - i. The mobile motorized pump shall be capable of reaching and dispensing a minimum of 250 gallons of water to all areas of active equipment operations within 5 minutes of fire ignition.
 - ii. If the Contractor is operating more than one crew out of different staging areas, the Contractor shall provide one of these units for each crew.
 - iii. CA State Parks will arrange for a water source for the Contractor to keep a 500gallon water buffalo trailer full of water.

AND

b. Heavy equipment conducting mastication shall have a foam fire suppression system built in.

OR

- c. A side-by-side off-highway utility vehicle with appropriate firefighting tools that include a shovel, Mcleod, Pulaski, and a chainsaw with a minimum 20-inch bar, fire extinguisher, and first aid kit. In addition, the side by side off highway utility vehicle shall carry an ATV/UTV skid unit that, at minimum, is equivalent to a Mercedes Wick-100 4H or Wick SI 250 Pump/Motor and a ³/₄" x 50' Rubber Booster Hose on a Manual Reel.
 - i. CA State Parks will arrange for a water source for the Contractor to keep a ATV/UTV skid unit full of water.

Contractor may propose an alternative method that meets or exceeds these standards.

3. Treatment areas shall be walked prior to operations to determine if there are any potential ignition hazards such as rocks, metal objects, or highly combustible fuel sources. The Contractor should adjust operational schedules to operate in these areas when fire hazard risks are the lowest, such as early morning.

- 4. Each vehicle or piece of heavy equipment shall be outfitted with a minimum 5 lb. Class ABC fire extinguisher, and/or a 2.5-gallon air pressurized gallon Class A water fire extinguisher, and/or a 5-gallon backpack pump physically attached to the heavy equipment or truck in an accessible location to respond to any possible ignitions. Heavy Equipment with foam fire suppressions system built in meets this requirement.
- 5. Spark arrestors are required for all mechanized tools.
- 6. Smoking is restricted to non-vegetated areas.
- 7. During times when vegetation is flammable, a minimum of 2-hour fire watch is required each day following conclusion of mechanized operations. Fire watch may include time spent conducting routine end-of-day equipment maintenance.
- 8. Immediate Fire Suppression Station (IFSS): A five-gallon backpack pump, Mcleod hand tool, and shovel shall be strategically staged within 250 feet of any mechanized mastication operations for ground crew or spotters to immediately extinguish any ignition.
- 9. If the relative humidity is at or below 20% and/or winds are at or above 15 mph at the end of the workday, Fire Watch patrol shall be required on site during and at least 3 hours after operations if mechanized mastication equipment has been operating.
 - a. Contractor shall have a Kestrel handheld monitor (or equivalent) to monitor wind and relative humidity and shall take readings at the beginning of operations, 12:00 p.m., and at the conclusion of operations each day. Contractor shall maintain a record of readings as part of the daily operational checklist.
- 10. CAL FIRE, RCD, CA State Parks, or their designee, reserves the right to restrict operating hours or operations in total during critical fire weather.

Ground Disturbing Activities within Treatment Areas

- 1. Ground disturbance shall be minimized to the greatest extent feasible. Berms, ruts, and other operator caused ground disturbance over 12 inches in height/depth shall be smoothed out to original contours before leaving the immediate work area.
- 2. Equipment shall operate parallel to the slope (up and down the fall line) to the greatest extent feasible.
- 3. The cutting or mulching head of the masticator shall be kept at or above the duff layer and not into mineral soil to the greatest extent feasible.
- 4. Equipment shall not enter areas outside of the designated project areas unless authorized by RCD, CA State Parks, or their designee.

- 5. Upon completion of a treatment area the contractor shall ensure that roads are left open and passable by the public with respect to all possible users.
 - a. Scattered debris is acceptable on seasonal roads but not to the point that it creates any significant road hazards for vehicles or users.

Operations from October 15th – May 1st

- 1. If Contractor obtains approval to operate from October 15th to May 1st no operations on saturated soils conditions as defined below may occur:
 - a. Saturated soil is defined as soil and/or surface material pore spaces that are filled with water to such an extent that runoff is likely to occur. Indicators of saturated soil conditions may include but are not limited to:
 - i. areas of ponded water,
 - ii. pumping of fines from the soil or road surfacing material during operations,
 - iii. loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts,
 - iv. spinning or churning of wheels or tracks that produces a wet slurry, or
 - v. inadequate traction without blading wet soil or surfacing materials.
 - b. In addition, operations on appurtenant roads or staging areas may only occur from a stable operating surface as defined below:
 - vi. A surface that can support vehicular traffic and that routes water off the road surface or into drainage facilities without concentrating flow in ruts (tire tracks), pumping of the roadbed, or ponding flow in depressions. A stable operating surface shall include paved roads, structurally sound road base, unsaturated hard packed seasonal roads, and all must be appropriate for intended use.

Watercourse Protections

1. All Class I and II watercourses will have the watercourse and lake protection zone (WLPZ) flagged where treatment activities are proximal to WLPZ based on the following table:

WLP2 Width (it) – Distance from top of bank to the edge of the protection zone				
< 30 % Slope	75	50	Sufficient to prevent the degradation of	
30-50 % Slope	100	75	downstream beneficial uses of water.	
>50 % Slope	150	100	Determined on a site-specific basis.	

WLPZ Width (ft) - Distance from top of bank to the edge of the protection zone

Source: 14 CCR Section 916.5 [936.5, 956.5] (February 2019 version)

2. All Class III watercourse centerlines within proximity to where operations will occur have watercourse centerlines flagged in blue with yellow and white striped equipment exclusion zone flagged to protect the watercourse based on the table below (EEZ) buffer. Handwork may occur within the EEZ zone.

Equipment Limitation Zones in *Feet		
Class III Watercourses	<30%	>30%
	25	50

* Feet = Measured along the ground based on slope

- Heavy equipment used in project operations shall not be serviced or fueled within 65 feet of a watercourse or in any locations where servicing will allow, grease, oil, or fuel to pass into lakes or watercourses. Contractor shall maintain a spill response kit within reasonable proximity to equipment operations.
- 3. Equipment shall be checked each day for any signs of leaks and if discovered, shall be repaired immediately.
- 4. Operations shall not place, discharge, dispose of, or deposit in such a manner as to permit to pass into waters of the state, any substances, or materials, including, but no limited to, soil, silt, bark, slash, sawdust, or petroleum in quantities which may cause harm to fish, wildlife, beneficial functions of riparian zones, or the quality and beneficial uses of water.
- 5. All staging areas and fueling or maintenance of vehicles and equipment shall occur outside of sensitive habitat areas and at least 65 feet from any water body, drainages (including storm drains) or riparian habitat.
 - a. No petroleum products, chemical, silt, fine soil, or any substance or material deleterious to sensitive species shall be allowed to pass into or be placed where it could enter a stream channel.
 - Any spills of hazardous materials shall be cleaned up and/or removed immediately. Any such spills shall be reported to RCD, CA State Parks, or their supervised designee.
 - c. Major vehicle maintenance, repairs, and washing shall be done off-site.
 - d. Chainsaw fueling shall occur on service roads and only where spills can be easily cleaned and at least 65 feet away from streams, bridges, or other areas that can transport spilled materials into natural waterways.

Waterbreaks

- Waterbreaks shall be installed or reinstalled in their original locations and original configuration on appurtenant seasonal roads or staging areas used by the Contractor following operations and prior to October 15th on any year that operations occur.
 - a. Contractors must have an appropriate piece of heavy equipment to construct waterbars on site, such as an appropriately sized excavator with a bucket, backhoe, or front-end loader with a hydraulically controlled box scraper on site a month prior and following the winter period (October 15th May 1st).
 - b. Additional erosion control measures may be implemented as determined by RCD, CA State Parks, or their designee.

- i. This shall include seeding with sterile varieties of barley and utilizing predominantly weed free rice straw for additional erosion control measures as deemed appropriate where bare areas have been created during operations. Contractor should be in contact with RCD, CA State Parks, or their designee for the appropriate amounts of these erosion control materials to be kept on site during the winter period.
 - 1. Stockpiles of these materials shall be kept dry and at minimum placed on raised pallets and covered with a tarp that is secured over these materials.
- c. Erosion control measures shall be implemented between October 15th and May 1st, prior to sunset if the National Weather Service forecast predicts a 30% or greater chance of rain within the next 24 hours.
- d. No mechanized operations will occur within 24 hours following a rain event of 0.2 inches or greater for protection of Red Legged Frog upland migration.
- e. No mechanized operations will occur within 48 hours following a rain event defined as any precipitation resulting in 1.0 inches or greater throughout the year to avoid dispersing California red-legged frog.
- 2. Where waterbreaks need to be additionally placed following operations, they shall be placed similarly to other existing waterbreaks. At minimum, waterbreaks placed shall be placed at an approximate 45-degree angle, be cut diagonally to a minimum 6 inches into the firm roadbed or disturbed area, have a continuous firm embankment of at least 6 inches in height, and a width of 6 inches immediately adjacent to the lower edge of the waterbreak cut-out flow.
- 3. If the installation of additional waterbreaks cannot be accomplished by heavy equipment due to inability to access a site, then hand-dug waterbreaks may be constructed with less than the requisite 6 inches above grade and 6 inches below grade where appropriate but must be functional and maintain a 6-inch-wide outlet.
- 4. Waterbreaks shall be located to allow water to be discharged into some form of vegetative cover, duff (forest floor detritus), slash, rocks, or less erodible material wherever possible, and shall be constructed to provide for unrestricted discharge at the lower end of the waterbreak so that water will be discharged and spread in such a manner that erosion shall be minimized.
- 5. Waterbreaks may be located and adjusted outside of the maximum waterbreak spacing specified at the discretion of RCD, CA State Parks, or their supervised designee in order to reduce any potential impacts and allow for the beneficial use of water. The waterbreaks shall be situated in a manner as to allow water to drain into stable soil configurations.

6. Waterbreak spacing shall conform with the table below. The waterbreak spacing may also be adjusted by RCD, CA State Parks, or their designee to create a greater level of protection than identified under general soil stabilization measures.

Maximum Distance Between Waterbreaks Measured in *Feet			
U.S. Equivalent Measure Road or Trail Gradient in percent			
10% or less	11-25%	26-50%	>50%
100	75	50	50

* Feet = Measured along the ground based on slope

a. Where vegetation is not adequate to act as a sediment filter at waterbreak outlet locations that have the potential to discharge sediment to a watercourse, the Contractor shall armor the road drainage outlets with slash, chunks of wood, rock, or other methods in consultation with RCD, CA State Parks, or their designee.

Biological Resource Avoidance Measures

- 1. Worker Environmental Awareness Training: All crew members and contractors are required to receive training from a qualified RPF or biologist prior to beginning treatments. The training will describe the appropriate work practices necessary to effectively implement the biological SPRs and mitigation measures and to comply with the applicable environmental laws and regulations.
- 2. If any California Endangered Species Act (CESA) or Federally Endangered Species (ESA) listed plant or animal is encountered, operations shall cease in proximity, and the area shall be avoided. RCD, CA State Parks, or their designee shall be notified immediately.
- 3. Nesting bird and bat roost surveys are required from February 1st to August 31st and shall be conducted within 7 days of any mechanical or manual treatment areas by RCD qualified personnel, CA State Parks qualified personnel, a qualified RPF, or qualified wildlife biologist. Additional wildlife surveys may be required seasonally, as determined by RCD, CA State Parks, or their qualified designee.
 - a. Areas where nesting birds and/or bat roosts are found to occur shall have a buffer zone flagged in orange glo of 250 feet depending on the species needs. RCD qualified personnel, CA State Parks qualified personnel, a qualified RPF, or qualified wildlife biologist reserve the right to increase or decrease the buffer size as appropriate based on topography.
 - b. Disturbance of nests/dens/roosts/nest cavities shall be avoided. If the Contractor identifies an active nest/den/roost/nest cavity, a buffer of 100 feet should be immediately established between the construction activities and the active nest/den/roost/nest cavity so that nesting activities are not interrupted, and RCD and/or CA State Parks staff should be notified. RCD qualified personnel, CA State Parks qualified personnel, a qualified RPF, or qualified wildlife biologist reserve the right to increase or decrease the buffer size as appropriate based on topography.

- 4. **Woodrats and woodrat nests** receive a 5–foot buffer at minimum. The majority of living vegetation associated with woodrat nest complexes should remain, where feasible.
 - a. Woodrat nests may only be removed, if necessary, to access a portion of a treatment area otherwise inaccessible or reasonably pass from one treatment polygon to another.
 - b. Nest removal shall be avoided during the breeding season, if feasible (January 1st September 30th). If woodrat nests must be removed during the breeding season, they will be slowly removed by hand to determine if young are present. If young are present the nest material shall be replaced, and the nest left alone for 2-3 weeks at which time the nest can be rechecked to verify that young are capable of independent survival before proceeding with nest dismantling. RCD qualified personnel, CA State Parks qualified personnel, CAL FIRE, a qualified RPF, or qualified wildlife biologist shall be notified to determine if young are present prior to removal.
- 5. **California Red-legged Frog (CRF) -** mechanized operations will cease when the following precipitation thresholds are met:
 - a. 24 hours after a rain event defined as any precipitation resulting in \geq 0.2 inch -1 inches throughout the year to avoid dispersing CRF.
 - b. 48 hours after a rain event defined as any precipitation resulting in 1.0 inch 2.0 inches throughout the year to avoid dispersing California red-legged frog.

California Red-legged Frog Precipitation Shut Down Periods for Mechanized Operations		
Precipitation Amount	Shut down period	
≥ .20 inch - 1 inch	24 hours	
1 inch - 2 inches	48 hours	
≥ 2 inches	72 Hours	

c. 72 hours after a rain event defined as any precipitation resulting in \geq 2 inches.

* Handwork W/O track chippers may continue

d. During the dispersal season from October 1 through April 15, pre-treatment visual surveys will be performed daily by a qualified RPF, biologist, or biological monitor, prior to implementation of any treatment activities (i.e., mechanical, manual, and herbicide) within 300 feet of Class I or Class II streams and within or adjacent to other sensitive habitat areas (e.g., wet intermittent streams, wet seeps). If a California red-legged frog is found during pre-treatment surveys or enters the project site during treatment activities, all work will stop within a non-disturbance buffer of 100 feet around the individual unless it is determined by the qualified RPF or biologist that a different sized buffer is appropriate to avoid disturbance, injury, or mortality. Treatment activities will cease within the buffer until the animal leaves on its own and the occurrence will be reported to the qualified biologist, and USFWS.

 A full list of biological resource avoidance measures can be found in the Butano State Park Forest Health Project PSA/Addendum: https://bof.fire.ca.gov/media/aouho1dl/butanostateparkforesthealthproject_psaaddendum_noattachments_ada.pdf

Archaeological Resources

1. If evidence of archaeological or cultural resources are discovered during project operations, all operations will cease in the vicinity of the potential resource, a 100-foot buffer will be implemented, and the area shall be avoided. RCD, CA State Parks, their supervised designee, or an archaeologist must be notified immediately. RCD, CA State Parks, their supervised designee, or an archaeologist may increase or decrease the buffer as deemed appropriate.

Forest Pathogens

- 1. All hand equipment including boots will be sanitized and heavy equipment hosed off prior to, and following, operations in areas where the spread of forest diseases are possible.
- 2. Each time equipment or vehicles leave or arrive at the site, the equipment or vehicles should be inspected by operations personnel for soil, host plant debris (leaves, twigs, and branches). Soil, or Host plant debris should be removed from equipment and vehicles prior to their arrival or departure. This applies to all equipment and vehicles associated with the operation, including heavy equipment, equipment transport trucks and trailers, pick-up trucks, employee's personal vehicles, etc.
- 3. After working in an infested area, remove or wash off accumulations of soil, mud, leaves, twigs, and other organic debris from shoes, boots, vehicles and heavy equipment, etc. before traveling to an area that is not infected with forest pathogens. Lysol® or a bleach solution should be used to disinfect shoes and boots after cleaning.
- 4. Disease host species, or disease infected trees should only be chipped back into areas where infected or host species are already present to avoid and minimize the risk of spreading disease.
- 5. Diseased material of any kind (i.e., firewood or logs) should not be transported out of project areas as part of this project without observing the requirements for transport of material within a quarantine area or zone of infestation.
- 6. Additional information for treatment of diseased material and/or transport can be found at the following links for these forest diseases:
 - a. Sudden Oak Death: https://www.suddenoakdeath.org/wpcontent/uploads/2014/12/forestry-08-10-with-new-2014-map.pdf
 - b. Pitch Canker: https://ufei.calpoly.edu/pitch-canker-task-force-management/

Invasive Species

- 1. Invasive species should only be chipped back into areas where the same species are already present to avoid and minimize the risk of spread.
- 2. Equipment, tools, boots etc. must all be cleaned of dirt and debris before arriving on site to prevent import of weed seed into the project areas.

Flagging Key

- 1. **Blue and white striped flagging** Water Course and Lake Protection Zones (WLPZ) for Class I and II watercourses.
- 2. **Blue flagging** Marks the centerline of a Class III watercourse. May also be utilized to mark the location of a waterbreak that needs to be constructed. The location of the waterbreak will be designated by placing a flag at the waterbreak inlet and an additional flag at the waterbreak outlet.
- 3. **Pink glo and black striped flagging** Equipment Exclusion Zone. Utilized for the protection of wood rats' nests or to restrict operations of heavy equipment within 30 feet of a Class III watercourse or other sensitive resources.
- 4. **Orange and white stripped flagging** Special Treatment Zone. Contractor shall contact RCD, CA State Parks, or their designee for more information on these zones and these zones shall not be entered without permission.
- 5. *Pink glo* Identifies a potential hazard to equipment or people.
- 6. **Orange glo** Identifies areas of retention for sensitive vegetation or sensitive wildlife resources.
- 7. **Solid pink glo flagging accompanied by solid white flagging** Special instructions to the Contractor written on the white flagging in black permanent pen. May also indicate an approved location to cross a Class III watercourse with heavy equipment or a track chipper.
- 8. **Yellow flagging with the words "SKID TRAIL" on it** Location where heavy equipment may travel off-road to access treatment areas or hazard trees marked for removal. Each unit will have main line skid trails identified prior to operations where heavy equipment may travel to and from a staging area for refueling to reduce ground disturbance.
- Orange flagging with the words "TRUCK ROAD" on it Location where vehicles licensed for use on county roads and state highways may travel. Predominantly utilized to identify appropriate locations of seasonal or winterized road use as a staging area for contractors.

- 10. *Solid blue accompanied by solid white and either SKID TRAIL (yellow) or TRUCK ROAD (orange) flagging* – Stream crossing approved for equipment use indicated by appropriate color yellow SKID TRAIL or orange TRUCK ROAD.
- 11. *Black and yellow flagging* Caution, Wasp or Bee's nest.
- 12. *Red flagging* Indicates a potential property boundary or bound of operations.

