
Appendix A – Tables and Figures

Table 1	Vegetation Management Activities
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Figure 1	Vicinity Map
Figure 2	Action Area

Table 1. Vegetation Management Activities

Unit ID	Acres	Vegetation Density	Prescription	Structures Present	Highway	Disposal
0	0.77	Light	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes		Chip and scatter or haul if needed
1	3.31	Light	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Chip and scatter or haul if needed
2	0.19	Light	Thin oaks to reduce ladder fuels, remove dead material, prune to 8' Concentrate on enlarging existing openings.	No		Jackpot pile downslope and leave
3	0.03	Light	Thin oaks to reduce ladder fuels, remove dead material, prune to 8' Concentrate on enlarging existing openings.	Yes		Jackpot pile downslope and leave
4	0.63	Light	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes		Chip and haul
5	2.48	Moderate	Thin oaks to reduce ladder fuels, remove dead material, prune to 8' Concentrate on enlarging existing openings.	No		Jackpot pile and leave.
6	0.28	Light	Thin oaks to reduce ladder fuels, remove dead material, prune to 8' Concentrate on enlarging existing openings.	No		Chip and haul
7	0.96	Light	Thin oaks to reduce ladder fuels, remove dead material, prune to 8' Concentrate on enlarging existing openings.	No	Unit abuts Highway, mow brush, cleanup w/ saws	Jackpot pile and leave.
8	1.01	Light	Thin oaks to reduce ladder fuels, remove dead material, prune to 8' Concentrate on enlarging existing openings.	No	Unit abuts Highway, mow brush, cleanup w/ saws	Chip and haul
9	1.49	Moderate	Thin oaks to reduce ladder fuels, remove dead material, prune to 8' Concentrate on enlarging existing openings.	No	Unit abuts Highway, mow brush, cleanup w/ saws	Jackpot pile and leave.
10	0.69	Moderate	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Chip and haul
11	1.38	Dense	Dense north-facing canyon oak woodland. Remove approximately 50% of stems smaller than 10". Prune all branches to 8' height.	No		Pile and burn. Pile only in flagged locations

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Unit ID	Acres	Vegetation Density	Prescription	Structures Present	Highway	Disposal
12	1.55	Dense	Dense north-facing canyon oak woodland. Remove approximately 50% of stems smaller than 10. Prune all branches to 8' height.	No		Pile and burn. Pile only in flagged locations
13	2.62	Dense	Dense north-facing canyon oak woodland. Remove approximately 50% of stems smaller than 10. Prune all branches to 8' height. Remove cut material.	No	Unit abuts Highway, mow brush, cleanup w/ saws	Pile and burn.
14	0.05	Moderate	Thin oaks to reduce ladder fuels, remove dead material, prune to 8' Concentrate on enlarging existing openings.	No		Chip and haul
15	0.68	Moderate	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Chip and haul
16	1.02	Moderate	Prune all branches to 8' height, remove all dead material in canopy	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Chip and haul
17	3.70	Dense	Thinned around 1993. Remove brush and dead, spray stumps, leave most large trees. Prune all branches to 8' height, limb large shrubs, target gullies.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Drag to and chip on lower road. Haul chips offsite
18	2.13	Dense	Thinned around 1993. Remove brush and dead, spray stumps, leave most large trees. Prune all branches to 8' height, limb large shrubs, target gullies.	No		Drag to and chip on lower road. Haul chips offsite
19	4.26	Dense	Thinned around 1993. remove brush and dead, spray stumps, leave most large trees. Prune all branches to 8' height, limb large shrubs, target gullies.	No		Drag to and chip on lower road. Haul chips offsite
20	0.66	Moderate	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes		Jackpot pile and leave.
21	0.67	Moderate	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Jackpot pile and leave.
22	0.30	Dense	Use tractor-mounted brush mower to clear 10' past downslope road edge. Clean up after mower w/ saws.	No	Unit abuts Highway, mow brush, cleanup w/ saws	Leave mower chips, remove prunings
23	0.82	Moderate	Dense north-facing canyon oak woodland. Remove approximately 50% of stems smaller than 10. Prune all branches to 8' height. Remove cut material.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Pile/burn in eastern 1/3 of unit, chip/haul westside

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Unit ID	Acres	Vegetation Density	Prescription	Structures Present	Highway	Disposal
24	0.46	Moderate	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes		Jackpot pile and leave.
25	0.59	Moderate	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes		Jackpot pile and leave.
26	0.28	Light	Clear up to 100' of structure where practical. Clearing to include, removal of overhanging limbs, dead trees & brush, (ladder fuels), pines and scrub oaks. Prune branches to 8' height.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Chip and haul
27	1.09	Light	Thin oaks to reduce ladder fuels, remove dead material, prune to 8' Concentrate on enlarging existing openings.	Yes		Chip around structure, pile/burn downslope
28	0.19	Light	Remove brush, dead trees and reduce ladder fuels. Spray stumps, leave most large trees. Prune all branches to 8' height, limb large shrubs, target gullies.	No		Chip and haul
29	1.84	Dense	Dense north-facing canyon oak woodland. Remove approximately 50% of stems smaller than 10. Prune all branches to 8' height. Remove cut material.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Drag to and chip on lower road. Haul chips offsite
30	0.46	Moderate	Dense north-facing canyon oak woodland. Remove approximately 50% of stems smaller than 10. Prune all branches to 8' height. Remove cut material.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Drag to and chip on lower road. Haul chips offsite
31	2.60	Dense	Dense north-facing canyon oak woodland. Remove approximately 50% of stems smaller than 10. Prune all branches to 8' height. Remove cut material.	Yes	Unit abuts Highway, mow brush, cleanup w/ saws	Drag to and chip on lower road. Haul chips offsite
32	1.43	Dense	Remove brush, dead trees and reduce ladder fuels. Spray stumps, leave most large trees. Prune all branches to 8' height, limb large shrubs, target gullies.	No		Pile and burn
33	0.81	Dense	Remove brush, dead trees and reduce ladder fuels. Spray stumps, leave most large trees. Prune all branches to 8' height, limb large shrubs, target gullies.	No		Chip and haul
34	2.19	Dense	Remove brush, dead trees and reduce ladder fuels. Spray stumps, leave most large trees. Prune all branches to 8' height, limb large shrubs, target gullies.	No		Pile and burn

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Unit ID	Acres	Vegetation Density	Prescription	Structures Present	Highway	Disposal
35	2.63	Dense	Dense north-facing canyon oak woodland. Remove approximately 50% of stems smaller than 10. Prune all branches to 8' height. Remove cut material.	No	Unit abuts Highway, mow brush, cleanup w/ saws	Drag to road and chip
36	2.30	Dense	Remove brush, dead trees and reduce ladder fuels. Spray stumps, leave most large trees. Prune all branches to 8' height, limb large shrubs, target gullies.	No	Unit abuts Highway, mow brush, cleanup w/ saws	Create piles every 100', pile and burn.

**Table 2
Federally Listed, Proposed, and Candidate Species With Potential to Occur in the Vicinity of LO**

Scientific Name	Common Name	Federal Status	Preferred Habitat	Likelihood of Occurrence
Amphibians				
<i>Ambystoma californiense</i>	California tiger salamander, central population	T	Annual grasslands and grassy understory of valley-foothill hardwood habitats need underground refuges, need vernal pools, stock ponds or other seasonal water sources for breeding.	Not likely to occur. There is no suitable breeding habitat for the California tiger salamander present at the action area (Biosearch Associates 2005). The distance to the closest breeding site is greater than the expected dispersal distance for this species (USFWS 2005). Several known CNDDDB occurrences are documented from within the Lick Observatory USGS quadrangle, however all occurrences are at less than 3,000 feet, the proposed action will occur at 4,200 feet or higher. The action area lacks the primary constituent elements required for the species namely suitable breeding habitat, upland habitat adjacent to suitable breeding habitat and suitable upland dispersal habitat.
<i>Rana aurora draytonii</i>	California red-legged frog	T	Distinct habitat requirements that combine both specific aquatic and riparian components. The adults require dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2 1/3-foot deep) still or slow moving water. The largest densities of California red-legged frogs are associated with deep-water pools with dense stands of overhanging willows (<i>Salix</i> spp.) and an intermixed fringe of cattails (<i>Typha latifolia</i>). Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat during winter.	Not likely to occur. No riparian vegetation associated with slow-moving water is present in the action area. The distance to the closest breeding site is greater than the expected dispersal distance for the species. There are no documented occurrences of California red-legged frog within the CNDDDB 9 quad review area (CNDDDB 2005). The action area does not overlap with the proposed critical habitat for this species.

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Scientific Name	Common Name	Federal Status	Preferred Habitat	Likelihood of Occurrence
Reptiles				
<i>Masticophis lateralis euryxanthus</i>	Alameda whipsnake (=striped racer)	T	Typically found in open, dry habitats, including scrubland, prairie, woodland and desert habitats. Specifically found in chaparral—northern coastal sage scrub and coastal sage. Although home ranges of Alameda whipsnakes are centered on shrub communities, they venture up to 500 feet into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland. Found from seal level to approximately 6,020 feet.	Not likely to occur. There are no documented occurrences of Alameda whipsnake within the CNDDDB 9 quad review area (CNDDDB 2005). Open, dry habitat on the south-facing slope of Mount Hamilton provide suitable habitat for the San Joaquin whipsnake. Alameda whipsnakes generally avoid dense vegetation (Stebbins 1972). The action area is not located within proposed critical habitat for this species.
Birds				
<i>Brachyramphus marmoratus</i>	Marbled murrelet	T	Occurs year-round in marine subtidal and pelagic habitats from Oregon border to Point Sal, Santa Barbara County. In summer forages close to shore; in non-breeding season forages farther from shore. Breeders require mature, coastal coniferous forest for nesting and nearby coastal waters for feeding. The estimated 2,000 breeding individuals in California are largely concentrated on coastal waters off Del Norte and Humboldt Counties (about 75% of the population), and in lesser numbers off San Mateo and Santa Cruz Counties (about 14%).	Not likely to occur. There are no known occurrences of the marbled murrelet within the CNDDDB 9 quad review area (CNDDDB 2005). The appropriate habitat characteristics are not present in the action area, which is located approximately 30 miles from the ocean.
<i>Haliaeetus leucocephalus</i>	Bald eagle	T	Winters throughout most of California at lakes, reservoirs, river systems, and some rangelands and coastal wetlands on protected cliffs and ledges. Also nests on bridges and buildings in urban areas. Nests are normally built in the upper canopy of large trees, usually conifers.	Not likely to occur. There are no documented occurrences of bald eagles within the CNDDDB 9 quad review area (CNDDDB 2005). The appropriate habitat characteristics are not present in the action area. There are no lakes, reservoirs, river systems, or protected cliffs and ledges near the proposed action.

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Scientific Name	Common Name	Federal Status	Preferred Habitat	Likelihood of Occurrence
<i>Sterna antillarum</i> (= <i>albifrons</i>) <i>browni</i>	California least tern	E	California least terns nest in colonies on relatively open areas, beaches, salt evaporation ponds, seasonal alkali marshes, pavement and other areas kept free of vegetation by natural scouring from tidal action. Tidal salt marshes near tidal sloughs; perennial inhabitant of tidal salt marshes of the greater San Francisco Bay.	Not likely to occur. There are no documented occurrences of California least terns within the CNDDDB 9 quad review areas (CNDDDB 2005). The appropriate habitat for this species is not located within the action area. There area no tidal marshes or bays located within 25 miles of the action area.
Mammals				
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	E	Found in grassland and scrubland communities, which have been extensively modified by humans with oil exploration, wind turbines, agricultural practices, and/or grazing.	Not likely to occur. There is one documented occurrence of the San Joaquin kit fox within the CNDDDB 9 quad review areas (CNDDDB 2005). This occurrence is documented from 1975 and is approximately 15 miles from the action area. Grassland and savannah habitat occur in the action area, and the species could occur as a vagrant, but this would be considered an extremely rare event (Biosearch Associates 2005).
Fish				
<i>Hypomesus transpacificus</i>	Delta smelt	T	Know from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. Spawn occurs in shallow, fresh or slightly brackish water upstream of the mixing zone. They have been collected from estuarine waters up to 14 ppt (parts per thousand) salinity. For a large part of their one-year life span, delta smelt live along the freshwater edge of the mixing zone (saltwater-freshwater interface), where the salinity is approximately 2 ppt.	No potential to occur. There are no aquatic communities located within the action area.

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Scientific Name	Common Name	Federal Status	Preferred Habitat	Likelihood of Occurrence
<i>Onchorhynchus mykiss irideus</i>	Central valley steelhead	T	Pacific Ocean, spawns in coastal streams and rivers, over gravel beds. Pool depth, volume, amount of cover, and proximity to gravel for spawning play key roles.	No potential to occur. There are no aquatic communities located within the action area.
<i>Onchorhynchus mykiss irideus</i>	Central California coast steelhead	T	Pacific Ocean, spawns in coastal streams and rivers, over gravel beds. Pool depth, volume, amount of cover, and proximity to gravel for spawning play key roles.	No potential to occur. There are no aquatic communities located within the action area.
<i>Oncorhynchus tshawytscha</i>	Central Valley spring run chinook salmon	T	Pacific Ocean, spawns in coastal streams and rivers, over gravel beds. Pool depth, volume, amount of cover, and proximity to gravel for spawning play key roles.	No potential to occur. There are no aquatic communities located within the action area.
<i>Oncorhynchus tshawytscha</i>	Central Valley fall/late fall-run chinook salmon	C	Pacific Ocean, spawns in coastal streams and rivers, over gravel beds. Pool depth, volume, amount of cover, and proximity to gravel for spawning play key roles.	No potential to occur. There are no aquatic communities located within the action area.
<i>Oncorhynchus tshawytscha</i>	Winter run chinook salmon, Sacramento River	E	Pacific Ocean, spawns in coastal streams and rivers, over gravel beds. Pool depth, volume, amount of cover, and proximity to gravel for spawning play key roles.	No potential to occur. There are no aquatic communities located within the action area.
Invertebrates				
<i>Euphydryas editha bayensis</i>	Bay checkerspot butterfly	T	Habitat exists on shallow, serpentine-derived or similar soils that support the plants on which the caterpillars (larvae) feed. The primary larval host plant is dwarf plantain (<i>Plantago erecta</i>). In many years, the larvae require a second host plant, purple owl's clover (<i>Castilleja densiflora</i> or <i>C. exserta</i>), when the plantain dries up.	Not likely to occur. There are nine documented occurrences of the Bay checkerspot butterfly within the CNDDDB 9 quad review area (CNDDDB 2005). The majority of the occurrences are known from Morgan Hill and Santa Teresa Hill quads. However one occurrence is located within the Lick Observatory quad. Neither the host plant nor appropriate habitat characteristics are present within the action area.

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Scientific Name	Common Name	Federal Status	Preferred Habitat	Likelihood of Occurrence
Plants				
<i>Castilleja affinis ssp. neglecta</i>	Tiburon Indian paintbrush	E	A hemiparasitic perennial herb that is typically found in valley and foothill grasslands on serpentinite soils. This species is known from Napa, Marin and Santa Clara Counties. It bloom from April through June and is known from elevations ranging from 200 to 1,300 feet. This species is only known from six locations.	Not likely to occur.. There are two documented occurrences of Tiburon Indian paintbrush within the CNDDDB 9 quad review area (CNDDDB 2005). Both occurrences are from the Morgan Hill quad. The action area is located at approximately 4,200 feet above sea level and well above the known occurrence elevations. The appropriate habitat characteristics are not present in the action area.
<i>Ceanothus ferrisiae</i>	Coyote ceanothus	E	Typically found in chaparral, valley and foothill grassland/serpentine and coastal scrub. Known to occur in Santa Clara County only at elevations of 390 to 1,500 feet. Blooms from January to May.	Not likely to occur. There are four documented occurrences of the coyote ceanothus located within the CNDDDB 9 quad review area (CNDDDB 2005). The appropriate habitat characteristics are not present in the action area. The action area is located at approximately 4,200 feet above sea level and is well above the known occurrence elevations.
<i>Chorizanthe robusta var. robusta</i>	Robust spineflower	E	Most occurrences extirpated. Occupied habitats include openings within cismontane woodland, coastal dunes, and sandy or gravelly coastal scrub. Found at elevations ranging from 10 to 980 feet.	Not likely to occur. There is one documented occurrence of robust spineflower within the CNDDDB 9 quad review area (CNDDDB 2005). This occurrence is possibly extirpated. The action area is located at approximately 4,200 feet above sea level and well above the known occurrence elevations. The appropriate habitat characteristics are not present in the action area.

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Scientific Name	Common Name	Federal Status	Preferred Habitat	Likelihood of Occurrence
<i>Dudleya setchellii</i>	Santa Clara Valley dudleya	E	A perennial herb found in valley and foothill grassland, cismontane woodland; endemic to rocky and serpentine soils of Santa Clara County. Occurs at elevations ranging from 200 to 1,500 feet.	Not likely to occur. There are 33 documented occurrences from within the CNDDDB 9 quad review area (CNDDDB 2005). Thirty-two occurrences are within the Santa Teresa Hills, San Jose East and Morgan Hill quads. There are no occurrences within the Lick Observatory quad. The appropriate habitat characteristics are not present in the project area. The action area is located at approximately 4,200 feet above sea level and is well above the documents elevation of this species.
<i>Lasthenia conjugens</i>	Contra Costa goldfields	E	Grows in vernal pools within open grassy areas in woodlands and valley grasslands from sea level to 1,500 feet. Currently, 22 populations are believed to be extant in Mendocino, Napa, Marin, Contra Costa, Alameda, Solano and Monterey counties.	Not likely to occur. There is one extirpated occurrence of the Contra Costa goldfield documented within the CNDDDB 9 quad review area. The appropriated habitat characteristics are not present in the action area. The proposed action is located at approximately 4,200 feet above sea level and is well above the documented elevation of this species.
<i>Streptanthus albidus</i> ssp. <i>albidus</i>	Metcalf Canyon jewel-flower	E	Valley and foothill grassland; endemic to Santa Clara County. Found in relatively open areas in dry grassy meadows on serpentine soils; also on serpentine balds. Occurs at elevations ranging from 150 to 800 feet.	Not likely to occur. There are 10 documented occurrences of the Metcalf Canyon jewel flower within the CNDDDB 9 quad review area (CNDDDB 2005). The appropriate habitat characteristics are not present in the action area. The proposed action is located at approximately 4,200 feet above sea level and is well above the documented elevation of this species.

Federal Endangered Species Act

E- Endangered

T- Threatened

C- Candidate for listing status

Source: CNDDDB records and USFWS species lists for the Lick Observatory, San Jose East, Calaveras Reservoir, Mount Day, Eylar Mountain, Isabel Valley, Mount Sizer, Morgan Hill, and Santa Theresa Hills 7.5-minute USGS quadrangles.