SFPUC Alameda Creek Watershed
Mission Peak (Grazing Unit 22)
Alameda and Santa Clara Counties, California

Hetch Hetchy
Regional Water System
Services of the San Francisco Public Utilities Commission

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February 3, 2026

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Acronyms

AUMs	animal unit months
AUY	animal unit year
BMP	Best Management Practices
Cal-IPC	California Invasive Plant Council
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Database
EDRR	Early Detection and Rapid Response
EBRPD	East Bay Regional Park District
FR	Federal Register
GU	Grazing Unit
GUMP	grazing unit management plan
ID	identification
IPM	Integrated Pest Management
Grazing Unit 22	Mission Peak
GU-22	Mission Peak
NRCS	Natural Resources Conservation Service
NNIP	non-native invasive plant
PG&E	Pacific Gas & Electric Company
RMP	Rangeland Management Plan
RDM	residual dry matter
SFPUC	San Francisco Public Utilities Commission
SCU	Santa Clara Unit
USFWS	United States Fish and Wildlife Service
WMP	Watershed Management Plan

1. Introduction

1.1 Purpose of Grazing Unit Management Plan

This grazing unit management plan (GUMP) outlines the existing conditions and the rangeland management goals for the Mission Peak (Grazing Unit 22 [GU-22]) lease. This document establishes management expectations between the San Francisco Public Utilities Commission (SFPUC) and the tenant for the grazing unit and guides program operations and capital improvements to achieve the SFPUC's Rangeland Management Plan (RMP) goals. This GUMP is consistent with and informed by the watershed-wide RMP, the Alameda Watershed Management Plan (WMP) and the Water Enterprise Environmental Stewardship Policy in which the SFPUC commits to proactively managing the watersheds in a manner that maintains the integrity of natural resources, restores habitats for native species, and enhances ecosystem function.

1.2 Rangeland Management Program

The SFPUC developed the Alameda Creek Watershed RMP to document the rangeland management program for livestock grazing for the SFPUC-owned and -managed grazing units of the Alameda Creek Watershed. The RMP establishes a rangeland management program that is consistent with plans and policies that apply to management of SFPUC watershed lands, as well as with current best practices in rangeland management.

The goals of the SFPUC rangeland management program are to:

- Protect and improve water quality;
- Preserve and enhance the health of ecological systems;
- Reduce the threat of wildland fire by decreasing fuel densities;
- Adaptively manage the RMP lands based on new information and conditions;
- Provide a basis for consistent management of the RMP lands; and
- Support an economically and ecologically sustainable grazing operation.

1.3 Rangeland Management Plan Objectives

To achieve these goals, the RMP outlines broad management objectives to protect water quality and natural resources. These objectives include the following:

- Maintain sufficient vegetative residual dry matter (RDM) to protect soil and water quality.
- Minimize negative impacts to sensitive aquatic habitats such as riparian and spring systems.
- Implement rangeland management practices that preserve and protect special-status species and their habitats.
- Maintain or improve native species biodiversity.
- Monitor and control non-native invasive plant (NNIP) and wildlife populations.
- Reduce the risk of introduction or spread of plant diseases, particularly from human activities.

- Reduce sediment sources to riparian habitats associated with road systems and insufficient vegetative cover.
- Reduce risk of introducing livestock- and wildlife-related pathogens into waterways of the RMP lands.

The RMP also includes the following objectives to promote effective administration of the grazing units:

- Use the results of monitoring and routine inspections to adaptively manage the RMP lands.
- Effectively communicate and implement rangeland management goals and expectations with the RMP grazing tenant(s).
- Consult with SFPUC rangeland staff and RMP grazing tenant(s) during the development of any policies that would change the management of RMP lands.
- Implement cost-sharing rangeland improvement projects between the SFPUC and its grazing tenant(s) in the RMP lands.
- Use grazing to manage wildland fuel loads.

2. Lease Overview

2.1 Mission Peak Lease, Grazing Unit 22

The Mission Peak lease covers Grazing Unit 22 (GU-22), which consists of approximately 3,057 acres in the southwestern portion of the SFPUC Alameda Creek Watershed, west of Calaveras Reservoir (Figure 1). The lease is bordered by several SFPUC grazing units (Haynes Gulch, Calaveras Reservoir), Calaveras Reservoir, and private lands (primarily rangelands). The grazing unit is located on the eastern slopes of Mission Peak. Elevations in GU-22 range from 818 feet to 2,510 feet above sea level. The slopes are flat in the western portion of the grazing unit and steep in the eastern portion approaching Calaveras Road and Calaveras Reservoir. The primary access to the lease is via Calaveras and Weller roads (county roads). The grazing unit contains a total of three fields, two on the east side of Weller Road and one to the west of Weller Road. The two fields east of Weller Road include a small processing field adjacent to the corrals in the northern tip of the grazing unit and one larger field south of the processing field. The field west of Weller Road is the 300 Acre Field. Wool Ranch was purchased by the SFPUC and added to GU-22 in 2020, and the former Monument Peak (GU-24) grazing unit on the northwest border of GU-22 was joined with GU-22 in 2022.

2.2 Environmental Conditions

The Mission Peak grazing unit contains primarily flat to east-facing slopes that extend from soft undulating hilltops to steep slopes above Calaveras Reservoir. One perennial waterway (unnamed) runs from the west near Weller Road to the east, terminating at Calaveras Reservoir. A couple of springs feed this waterway. Other waterways include intermittent and ephemeral drainages that primarily run west to east. Many of the drainages on the east aspect of the ridge have seeps or springs associated with them. Ponds in the grazing unit appear to be fed by surface runoff and stream flow. Few wetlands are present in the grazing unit, apart from wetlands associated with the perennial waterway mentioned above. Vegetation of the grazing unit includes annual grassland, sagebrush shrub, oak savanna, and oak woodland. Oak woodland is most dominant on the steep drainages above Calaveras Reservoir in the

northeastern portion of the grazing unit. In the northwest where the added former GU-24 parcel is located, vegetation is predominantly annual grassland dominated by storksbill (*Erodium* sp.), with limited valley and blue oak woodlands in the bottoms of the two drainages in the eastern portion of the former GU-24 section. Rock walls run through the northwest portion of the grazing unit and likely marked property lines at one point in time.

Adjacent to Weller Road, a long ditch or canal was cut across the grazing unit from the north to end at the head waters of the most southern drainage. The ditch was an attempt to capture any surface runoff and redirect it to the drainage leading to a large pond (PA226). The ditching effort caused a large gully to form, delivering sediment to the drainage and downstream pond. The large in-stream pond (PA226) was likely excavated beyond the depth of the residual clay soil layer, probably intercepting bedrock or a more porous soil layer that prevents the pond from holding water very late in the season.

2.3 Easements

In the added former GU-24 parcel in the northwest and new (2020) Wool Ranch additions, the existing grazing tenant has an existing access easement and lease permit. Private land and Mission Peak Regional Preserve (East Bay Regional Park District [EBRPD]) lands are located north of the grazing unit. There is an access easement on the main Weller Road (a gated Santa Clara County road near the intersection with Felter Road), which is used as the main access road for various communications companies that maintain towers on Monument Peak and Mount Allison as well as access to EBRPD land in the north. Pacific Gas & Electric Company (PG&E) overhead electrical transmission lines run in the north/south direction on the eastern side of the grazing unit. Adjacent landowners, the EBRPD, and the various utility companies may drive through, inspect, or maintain infrastructure on the grazing unit at any given time, but should not have a regular effect on the grazing operations within the grazing unit.

2.4 Grazing Operation

The Mission Peak grazing unit is grazed year-round (as of 2025) with cows and calves. In December, replacement heifers are put into a 300-acre field and branded using the small corral in the field. After branding they are allowed to graze in the rest of the grazing unit. In June, they are processed in the holding fields and corrals in the northeastern portion of the grazing unit. Some cows remain on the grazing unit year-round.[1]

The tenant of this parcel runs cow and calf pairs on the lease as well as on the adjacent private lands.

2.5 Stocking Rates

From 1998 to 2015, recorded stocking rates for the grazing unit (before additional property was added) averaged approximately 929 animal unit months (AUMs), or 2.3 acres per AUM (27.4 acres per animal unit year [AUY]). Estimated grazing capacity and stocking rates for the Mission Peak grazing unit were determined using Natural Resources Conservation Service (NRCS) soil productivity rates adjusted by vegetative cover and a fall RDM target of 1,000 pounds per acre. The baseline grazing capacity for the Mission Peak grazing unit is 1,929 AUMs and will be

[1] Fields, Russell (Fields Livestock), grazing tenant, SFPUC Sunol Park, Mission Peak, Black Mountain, and Frog Pond grazing units, in-person communications with former URS Rangeland Ecologist Dina Robertson, 2014.

adjusted annually by the SFPUC based on forage productivity, infrastructure updates, RDM levels, and vegetation condition.

The northwest section of the grazing unit (the added former GU-24) is open on all sides to the surrounding private rangelands and therefore stocking rates are unknown.

3. Biological Conditions

3.1 Habitat Conditions

The Mission Peak grazing unit contains multiple springs and riparian areas, particularly in the southern portion of the grazing unit. There is a rich assemblage of native riparian species, including elderberry (*Sambucus* sp.), sycamore (*Platanus racemosa*), California bay (*Umbellularia californica*), and buckeye (*Aesculus californica*). Sycamore woodland inhabits the northeastern corner of the grazing unit; most trees are mature with no seedlings or saplings present. Oak, bay, and buckeye recruitment occurs naturally onsite; there are areas of mass germination of oak seedlings in specific areas, notably in cattle trails and erosional zones, but no saplings are present. Some spring and riparian areas are prone to cattle traffic and feral pig wallowing. Many troughs overflow straight into riparian corridors; in some places this is ecologically beneficial, but in other places the overflow attracts cattle and pigs. Some older troughs are located within riparian areas and springs are unfenced or have damaged spring boxes.

3.2 Special-Status Species

The species known to occur in the grazing unit that are subject to regulation by the State of California and the federal government are listed in Table 1. There are some large shrub land areas on southeast aspect slopes that are ideal for Alameda whipsnake (*Masticophis lateralis euryxanthis*). The stock ponds, springs, vernal pool, and streams offer suitable breeding and dispersal habitat for California red-legged frog (*Rana draytonii*) and California tiger salamanders (*Ambystoma californiense*). The grazing unit contains United States Fish and Wildlife Service (USFWS) designated critical habitat for Alameda whipsnake and California red-legged frog and proposed critical habitat for foothill yellow-legged frog (*Rana boylii)*.

In addition to the species in Table 1, this grazing unit has occurrences of two plant species identified by the East Bay Chapter of the California Native Plant Society (CNPS) as locally Rare, Unusual, and Significant[2]: California helianthella (*Helianthella californica* var. *californica*) and Howell's bluegrass (*Poa howellii*). They are listed as Rank A2 and are significant because in Alameda County they are in decline; reach their range limit; and/or occur in habitats that are limited, isolated, or threatened. Plants with this status are within the purview of the Stewardship Policy[3] and may be monitored and managed by SFPUC staff. Springsnails (*Pyrgulopsis stearnsiana*), a spring-dependent species that is sensitive to water quality, have been documented in the springs in the grazing unit.

[2] Database of Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties: https://ebcnps.org/ebrare-plant-database/.
[3] San Francisco Public Utilities Commission, Water Enterprise Environmental Stewardship Policy, June 27, 2006.

Table 1 Special-Status Species Observed in Mission Peak (GU-22)

Common Name	Scientific Name	Listing Status[1]
Wildlife/Fisheries		
Alameda whipsnake	*Masticophis lateralis euryxanthis*	FT, CH, ST
California red-legged frog	*Rana draytonii*	FT, CH, SSC
California tiger salamander	*Ambystoma californiense*	FT, ST
Western pond turtle	*Actinemys marmorata*	FPT, SSC
Golden eagle	*Aquila chrysaetos*	BGEPA, MBTA, SP
Western burrowing owl	*Athene cunicularia*	MBTA, SC, SSC
Plants		
Narrowleaf milkweed	*Asclepias fascicularis*	Host plant for the FPT Monarch butterfly
Santa Clara red ribbons	*Clarkia concinna* ssp. *automixa*	CRPR 4.3

[1] Sources:
California Natural Diversity Database (CNDDB), "State and Federally Listed Endangered, Threatened, and Rare Plants of California" and "Special Animals List," California Department of Fish and Wildlife, Sacramento, CA, July 2025;
Lake, Dianne, Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties (web application), Berkeley, California, 2025; East Bay Chapter of the California Native Plant Society (a nonprofit organization), https://ruspdb.ebcnps.org/cgi-bin/ebrare/ebrare.cgi, accessed July 2025.

Federal Status:
CH = Critical Habitat
FT = Federally listed as threatened
FPT = Federally proposed for listing as threatened
Western pond turtle is proposed to be listed as threatened as of October 2023; pending finalization (88 Federal Register [FR] 68370)
Monarchs are proposed to be listed as threatened as of December 2024; pending finalization (89 FR 100662)
BGEPA = Bald and Golden Eagle Protection Act
MBTA = Migratory Bird Treaty Act

California (State) Status:
ST = State listed as threatened
SC = State candidate for listing as endangered
SP = Fully protected. A fully protected species may not be taken or possessed at any time, except as specified in the Fish and Game Code.
SSC = Species of Special Concern

California Rare Plant Rank and Threat codes:
4.3 = Plants of limited distribution – Watch list; Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Special-status species monitoring by SFPUC staff is ongoing and GUMPs are updated as new occurrences are documented.

3.3 Native Vegetation Objectives

The Alameda WMP outlines general native vegetation goals that include the following:

- Protect, conserve, and enhance wetlands and riparian communities.
- Protect and restore unique, local, and/or indigenous plant species to maintain biodiversity and specialized habitat values.

- Manage grasslands and rangelands to balance, wherever possible, wildlife habitat values, the restoration of native perennial species, and the reduction of fuel loads and noxious weeds.
- Manage shrub communities to reduce fuel loads, prevent soil erosion and sedimentation, improve wildlife habitat access and use, and control invasive plants.
- Manage woodlands and forests to maintain healthy, vigorous, and diverse stands with a multiplicity of age and size classes.

Specific native vegetation strategies that apply to this grazing unit are listed in Table 2.

Table 2 Objectives and Strategies for Managing Native Vegetation

Objectives from the RMP	Grazing Unit Strategy
OBJECTIVE 1: Maintain sufficient RDM to protect soil and water quality.	• Stabilize erosional slumps through seeding and/or temporary cattle exclusions (such as caging planted oaks). • Install temporary and/or permanent cattle exclusion fencing around erosional features or areas where vegetation is limited and soil is exposed from grazing and where soils are susceptible to erosion or slumping (within and adjacent to riparian areas or mature trees used by cattle for shade) or other impacts (e.g., compaction). Allow sufficient time for vegetation to recover prior to resuming grazing.
OBJECTIVE 2: Minimize negative impacts to sensitive aquatic habitats such as riparian and spring systems.	• Distribute mineral feeders in uplands, away from roads, riparian corridors, and mature trees. • Repair water infrastructure and relocate water systems away from riparian and spring areas. • Temporarily exclude cattle from riparian corridors or strategically protect seedlings to enhance woody recruitment. • Exclude cattle and pigs from undeveloped springs, seeps, and west trough overflow areas.
OBJECTIVE 3: Maintain or improve native species biodiversity.	• Maintain a mosaic of habitats, including woodland, shrubland, and serpentine grassland, through grazing practices that increase recruitment of oak and sycamore species, protect mature native trees, decrease the risk of catastrophic fire, and maintain desired plant community composition and extent. • Strategically protect riparian seedlings, which appear abundant in riparian and spring areas.
OBJECTIVE 4: Use the results of monitoring and routine inspections to adaptively manage the RMP lands and meet RMP goals.	• Conduct annual monitoring of soil, vegetation, and infrastructure, and use the information to adapt rangeland management as needed. • Utilize monitoring data to adapt rangeland management practices as needed. • Perform routine inspections of infrastructure, including livestock water systems, roads, fencing, and corrals, to document that they are functioning as intended.

3.4 Non-Native Invasive Plants

SFPUC's Integrated Pest Management (IPM) program focuses on:

- Protecting rangeland productivity by reducing NNIPs that negatively impact forage quality; or
- Protecting high value habitat and ecosystem services by reducing the introduction or spread of NNIPs and plant pathogens.

A reconnaissance-level survey of NNIP species was conducted in 2009 and 2020 in the watershed.[4] This survey was spatially limited to select areas (along roads and other places more easily reached by foot) and not all species were identifiable at the time of the surveys. In 2025, SFPUC staff conducted a survey to update occurrences and priorities for management. Table 3 lists NNIPs identified in the lease during the 2009 and 2020 surveys, the 2025 staff survey, and discussions with the current tenant and SFPUC grazing manager. Species detections noted during periodic site visits may or may not have coincided with the optimal timing to identify certain NNIP species. The table also includes the California Invasive Plant Council (Cal-IPC) rating and the invasion curve level.[5] The SFPUC prioritizes NNIP management actions (i.e., prevention, eradication, or containment) based on invasion curve levels 1 through 4, which depict the area infested over time.

As in most grazing units in the watershed, NNIPs are typically associated with disturbed areas in GU-22, including roads, corrals, holding and processing fields, and pond embankments. Purple starthistle (*Centaurea calcitrapa*) has increased over time from south northward through the grazing unit[6] and is being actively managed by the tenant and the SFPUC.[7] In the added former GU-24 parcel in the northwest, a large population of stinkwort (*Dittrichia graveolens*) was observed, particularly in a drainage swale along Weller Road just north of the grazing unit boundary in 2015. Due to the proximity of the grazing unit to a well-traveled road, it is likely that other NNIP infestations will continue to be an issue.

[4] Nomad Ecology, *Non-indigenous Plant Species Inventory and Mapping Alameda Watershed, Alameda and Santa Clara Counties, California*, Prepared for the SFPUC, 2009; and Nomad Ecology, *2020 Alameda Watershed Invasive Plant Report*, Prepared for the SFPUC, 2020.
[5] Department of Primary Industries, *Invasive plants and animals: policy framework*, Victoria Department of Primary Industries, Melbourne, Australia, 2010.
[6] Fields, Russell (Fields Livestock), grazing tenant, SFPUC Sunol Park, Mission Peak, Black Mountain, and Frog Pond grazing units, in-person communications with former URS Rangeland Ecologist Dina Robertson, 2013.
[7] Fields, Russell (Fields Livestock), grazing tenant, SFPUC Sunol Park, Mission Peak, Black Mountain, and Frog Pond grazing units, in-person communications with AECOM Biologists Tierra Groff and Holly Stover, 2022.

Table 3 Non-Native Invasive Plants Managed in Mission Peak (GU-22)

Common Name	Scientific Name	GU-22 Invasion Curve Level[1]	Cal-IPC Rating[2]
Artichoke thistle	*Cynara cardunculus* subsp. *flavescens*	1	Moderate
Barb goatgrass	*Aegilops triuncialis*	1	Moderate
Bermuda buttercup	*Oxalis pes-caprae*	2	High
Cape ivy	*Delairea odorata*	1	Moderate
Fennel	*Foeniculum vulgare*	2	High
French broom	*Genista monspessulana*	1	High
Fuller's teasel	*Dipsacus sativus*	1	Moderate
Harding grass	*Phalaris aquatica*	2	High
Himalayan blackberry	*Rubus armeniacus*	2	High
Mediterranean lineseed	*Bellardia trixago*	4	Moderate
Medusahead	*Elymus caput-medusae*	4	Moderate
Poison hemlock	*Conium maculatum*	3	Moderate
Purple starthistle	*Centaurea calcitrapa*	2	Moderate
Stinkwort	*Dittrichia graveolens*	3	Moderate
Tocalote	*Centaurea melitensis*	3	High
Whitetop	*Lepidium latifolium/ L. draba*	2	Moderate / High
Woolly mullein	*Verbascum thapsus*	4	Limited
Yellow starthistle	*Centaurea solstitialis*	3	High

IPM = Integrated Pest Management
SFPUC = San Francisco Public Utilities Commission

[1] Non-Native Invasive Plants (NNIP) Management Approach by Level on Invasion Curve:
1. Prevention: SFPUC IPM will conduct Early Detection and Rapid Response (EDRR) surveys.
2. Eradication: SFPUC IPM will treat to eradicate.
3. Containment: SFPUC IPM will treat to protect high value resources or to eradicate isolated populations.
4. Widespread: SFPUC IPM will focus on long-term management and asset-based protection.

[2] California Invasive Plant Council (Cal-IPC) ratings (Cal-IPC 2024) rate NNIPs based on dispersal rate and environmental impact (https://www.cal-ipc.org/plants/inventory/).

To help reduce NNIPs, expectations of tenants include the following:

- Attend an annual SFPUC training regarding NNIP Best Management Practices (BMP).
- Report to the SFPUC any new observations of Bermuda buttercup (*Oxalis pes-caprae*), fennel (*Foeniculum vulgare*), Harding grass (*Phalaris aquatica*), Himalayan blackberry (*Rubus armeniacus*), purple starthistle, whitetop (*Lepidium latifolium/ L. draba*), or barb goatgrass (*Aegilops triuncialis*).
- When cattle are transported onto the grazing unit, notify the SFPUC Rangeland Manager and as feasible implement appropriate BMPs such as:

- Provide weed-free forage or pelletized feed (approved by the SFPUC) to cattle for at least three days before transport onto the grazing unit
- Utilize a transitional pasture within the grazing unit
- Decontaminate vehicles and equipment entering the grazing unit according to the SFPUC's decontamination policy

3.5 Nuisance Wildlife

Wild boar (*Sus scrofa*) soil disturbance was observed during the 2022 visit to incorporate Wool Ranch into the existing Mission Peak grazing unit. The numbers of California ground squirrel (*Otospermophilus beecheyi*) and concentration of burrows observed in GU-24 in 2015 was the highest observed in the SFPUC grazing unit lands. This may be due in part to the very low vegetation cover and the rock outcrops that provide suitable burrow sites and observation points from which ground squirrels can view potential threats from prey.

4. Rangeland Infrastructure

A detailed grazing infrastructure survey of the watershed was conducted from 2013 to 2015, and in 2022 on Wool Ranch parcel. Staff updated the survey in 2025 (Figure 2). The number, condition, and location of various types of infrastructure such as barns, corrals, springs, and troughs were assessed and are summarized in this section along with recommendations.

4.1 Roads

Roads – GU-22 has 1.4 miles of paved and 15 miles of unpaved vehicle-accessible roads (Figure 2). Weller Road is the only paved road in the grazing unit. Access to and within the grazing unit is primarily via Calaveras and Weller roads, as well as unpaved roads such as Power House Road and Jessie's Shortcut Road. In general, roads in the grazing unit are passable and in good condition. However, roads are occasionally blocked by felled trees that need to be removed. Weller Road is a paved restricted access road with a locked gate a short distance from Calaveras Road. Most of the roads in the eastern portion of the grazing unit are very steep and impassable when wet, and are graded annually by SFPUC staff, a contractor, and/or the grazing tenant.

In the northwest section of the grazing unit (the added former GU-24 parcel), Weller Road is an improved dirt road often maintained by adjacent landowners (as observed in January 2015). Weller Road enters the grazing unit from the south and exits through the northern boundary. There are two unimproved dirt roads that spur off Weller Road and exit the eastern boundary of the former GU-24 section of the grazing unit. A dirt road connects the two spur roads in the middle. The southernmost spur road is poorly maintained and has deep rill erosion in many sections. A third short section of improved road spurs off Weller Road and exits the western boundary headed toward the communication towers on Monument Peak.

Recommendations – The steep roads, particularly in the eastern half of the grazing unit, require periodic maintenance to ensure water is diverted from the road correctly and does not lead to excessive erosion. Installation of rolling dips on the roads is recommended. Roads are currently graded as needed by SFPUC staff, contractors, and/or the grazing tenant.

4.2 Fences

Fences – GU-22 contains many miles of perimeter and cross fencing. Much of the fencing installed by the tenant along Weller Road is new and in excellent condition. Portions of the perimeter fence along Calaveras Road, particularly in the southeast side of the grazing unit, are missing wire, leaning over heavily, or otherwise will need repair or replacement soon. In August and September 2020, the Santa Clara Unit (SCU) Lightning Complex fires burned a section of the newly acquired Wool Ranch, which further damaged the fence on Calaveras Road. To date, new fencing was added along the northern and northwest boundaries following the fires, but fencing along the southern half of the eastern boundary is still in poor condition and should be replaced.

In the northwest corner of the grazing unit where the newly (2022) added former GU-24 parcel is located, there is very incomplete perimeter fencing. Perimeter fencing only occurs on a portion of the western boundary. There is no interior cross fencing dividing the grazing unit into separate fields in this area. Partially collapsed rock walls are located throughout the grazing unit, some of which run near or in the general direction as the property boundary, but none of which would contain any cattle to an area.

Recommendations – The perimeter fence along Calaveras Road requires maintenance in locations and needs to be replaced in some areas, particularly in the southeast Santa Clara County portion of the grazing unit. In general, fence lines should be routinely checked prior to shipping in cattle or following significant rain/windstorms. Fence lines along Calaveras Road should be regularly checked as above and repaired immediately if cattle are utilizing the pasture or prior to introducing cattle to the field. In addition, fencing along the southern half of the eastern boundary is still in poor condition and should be replaced. Gates and fence braces should be periodically maintained, checked, adjusted, greased, and/or painted as needed or once every two years. Gates and fences may also be advertently or inadvertently damaged by the public that frequents Calaveras Road. These gates and fences therefore may need periodic repair/replacement.

The northwest corner of the grazing unit is not bounded by a functional perimeter fence, so perimeter fencing should be installed to delineate the SFPUC property boundary and associated rangeland program.

4.3 Corrals and Barns

Corrals and Barns – There are three tenant-owned corrals in the grazing unit. One (CO0037) is in the northern holding field along Calaveras Road, the second (CO0038) is located off Weller Road (300 Acres Field), and the third (CO0039) is located off Weller Road on the new Wool lease portion on the northern property boundary of GU-22.

Recommendations – Should the former GU-24 section of the grazing unit in the northwest be operated independently of the adjacent private ranchland south of the grazing unit, then a new corral may be necessary to process cattle.

4.4 Water Sources

Water Sources – Many springs are present in the grazing unit, with most occurring on the steep eastern portion of the ridgeline. Many of these contribute water to troughs and intermittent to perennial flow to the adjacent streams. West of Weller Road a productive spring called the Wool Flat Spring (SP0137) maintains flow in the creek that flows from the western portion of the grazing unit to Calaveras Reservoir in the east. Most water troughs in the grazing unit are fed by

spring developments. There are signs that some springs in the eastern portion of the grazing unit that once emerged from the ground higher on the hillside have since dried up. Spring boxes had to be built at locations lower on the hillslope where spring water was emerging from the ground at that point in time. One trough (TR086) on Weller Road in the middle of the grazing unit is fed by stream water diverted from the outfall of a culvert. The corral (CO0037) and associated trough in the holding field near Calaveras Road is fed by an adjacent well (WL0023) and water tank (TK0033).

A pond assessment was conducted on the closest pond (PA226) in the event a property survey indicates it falls within the SFPUC property. Both ponds appear to dry up during the summer months depending on the water year.

GU-22 contains eight ponds, all of which were assessed between May and June of 2012 and 2013 (Table 4).

Table 4 2012-2013 Pond Assessment Results for Mission Peak (GU-22)

Pond ID	Pond Condition	Water Source
PA099	Moderate condition. Gully erosion from upstream pond enters this pond. There is a lot of California ground squirrel activity around the pond. Erosion is present around the edges of the pond.	Surface runoff, stream flow
PA104	Good condition. The embankment is good but has California ground squirrel burrows. The pond looks as if it rarely overflows.	Surface runoff, stream flow
PA107	Moderate condition. This is a low-capacity pond. The spillway has many California ground squirrel burrows but is in excellent condition.	Surface runoff
PA129	Poor condition. The embankment has been compromised in the center and gully erosion below has delivered sediment to the drainage and a dry pond downstream (PA099). There is also gully erosion upstream of the pond. A water tank and trough supply most of the water for the field.	Surface runoff
PA157	Poor condition. This is a steep-sided pond with an eroded crumbly embankment that has a high concentration of invasive plant species and lots of squirrel burrows. The spillway is currently working, but a cattle trail over the embankment will likely become the new overflow point.	Stream flow, surface runoff
PA226	Good condition. This pond has low RDM and lots of bare, thin, rocky soils. The pond does not overflow. An adjacent landowner states that the pond was dug too big and deep. They hit a sandstone layer and the pond never holds water long. The pond receives a fair amount of sediment input from the stream.	Stream flow, shallow concentrated flow, sheet flow
PA248	Poor condition. This is an ephemeral pond.	Surface runoff
PA254	Good condition.	Surface runoff

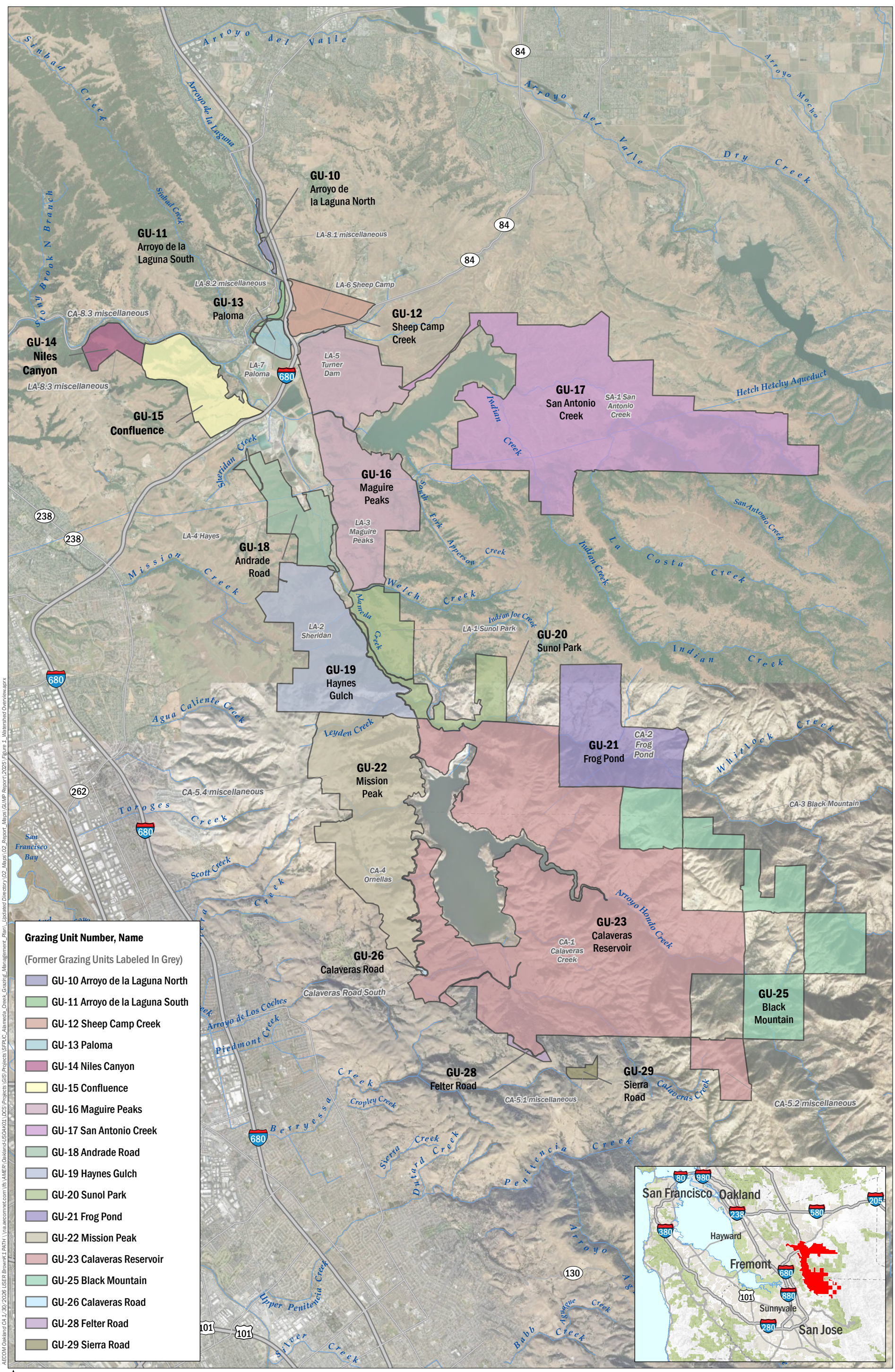
ID = identification

Recommendations – An additional water source could be provided by accessing the former Calaveras Dam Replacement Project well and distributing troughs in the northwest portion of the grazing unit.

5. Grazing Unit Management

This GUMP outlines the existing conditions and management goals for the lease to guide the long-term rangeland management of the grazing unit. Annual monitoring, inspections, and tenant meetings will be used to adapt the management based on seasonal variation and rangeland health. The SFPUC will conduct annual inspections of each grazing unit to evaluate infrastructure condition, rangeland health, and biological considerations relative to the goals of the RMP. In addition, the SFPUC will conduct rangeland monitoring, including periodic composition monitoring and RDM monitoring in specified plots. The annual inspection and monitoring data will be summarized to share with the tenant and inform the Annual Operating Plan.

Each year, the SFPUC Rangeland Management Team will meet with the tenant to review the rangeland condition, document issues, and discuss goals for the grazing unit. The Rangeland Management Team includes the Rangeland Manager, the Watershed Resources Manager, the Senior Integrated Pest Management Specialist, the Senior Biologist, and the Watershed Forester. Based on this discussion, the SFPUC will develop an Annual Operating Plan that outlines specific management objectives for the following year. The Annual Operating Plan will document current monitoring and rangeland assessment data, outline stocking rates based on forage production and rangeland condition, and summarize annual management objectives for grazing infrastructure improvements, Managed Riparian Areas, NNIP management, and environmental stewardship. The SFPUC will prioritize investments in infrastructure and operations based the RMP goals and conditions in the grazing units across the watershed.



San Francisco Water Power Sewer

AECOM

Figure 1: SFPUC Alameda Creek Watershed Grazing Unit Overview

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0 1,900 Feet

AECOM

SFPUC Grazing Unit Boundary

Fence
Secondary highway
Paved road
Unpaved road
Trail

Intermittent stream
Pond

Grazing Infrastructure

Mission Peak (GU-22): All corrals are tenant-owned.
The water source for trough TR0259 is on adjacent private property.

Barn
Corral
Spring

Stream Diversion
Tank (functioning)
Trough (non-functioning or unknown)
Trough (functioning)
Well

Location of grazing unit within SFPUC Watershed Lands

Sources: AECOM, 2025; ESRI Imagery, 2025; SFPUC, 2025; Rangeland Conservation Science, 2025.

Hetch Hetchy Regional Water System
Services of the San Francisco Public Utilities Commission

Figure 2: GRAZING UNIT 22 MISSION PEAK

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