

MEMORANDUM

To: Brigitte Shearer, Parks and Recreation
Director, City of Belmont

From: John Baas, WRA

cc:

Date: May 26, 2022

Subject: Draft Management Alternatives and Environmental Assessment for the Open Space
Management Plan as part of the Belmont Parks Recreation and Open Space Plan

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MANAGEMENT ALTERNATIVES

Introduction

The purpose of the Open Space Management Plan (OSMP) is to ensure the open space holdings of the City of Belmont (City) be maintained in perpetuity for the multi-benefits of recreation, plant communities and wildlife habitat, and hazard mitigation. The OSMP is a subset of the Parks, Recreation and Open Space Master Plan. The OSMP affirms objectives, policies, implementation actions that will allow the City to enhance how its open spaces are monitored, managed, maintained, and reported on. Following feedback from the PROS Advisory Committee, City of Belmont Parks and Recreation Commission, and community input during the winter and spring of 2022, the City and Consultants have grouped the identified objectives, policies, and implementation actions into three categories: 1) environmental sustainability; 2) balancing recreation uses and trail management; and, 3) natural hazard mitigation.

The City is currently considering a range of alternatives to the OSMP that reflect desired outcomes. The Base Plan includes the “must-have” objectives and policies, while the Recreation Emphasis Alternative and the Habitat Protection Emphasis Alternative include additional objectives and policies to supplement of the Base Plan. These alternatives are introduced below.

Base Plan

The Base Plan builds on existing City planning document objectives, policies, and implementation actions to protect sensitive resources, guide trail maintenance and manage recreation, and mitigate the risk of natural hazards. This approach implements best practices for comparable open space environmental sustainability through policies that promote viable and diverse native plants and wildlife, and protect and restore natural water courses. The Base Plan utilizes balanced recreation policies aimed at sustainable trail design and visitor safety. Additionally, this plan reinforces natural hazard mitigation through detailed policies that prioritize reducing the risk and severity of wildfire within City open spaces and adjacent residential areas, as well as regional planning and coordination.

Recreation Emphasis Alternative

The Recreation Emphasis Alternative would supplement the Base Plan by augmenting trail and recreational use policies and implementation actions. This approach ensures trails and supporting amenities are proactively adapted to meet growing community needs.

Habitat Protection Emphasis Alternative

The Habitat Protection Emphasis Alternative would enhance the Base Plan by including additional policies to prioritize the protection of native plant communities and wildlife. Under this alternative, additional resources may be focused on the enhancement of natural areas through habitat restoration.

Objective Comparison

TABLE 1: ENVIRONMENTAL SUSTAINABILITY OBJECTIVES

Topic	Objective	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
Environmental sustainability	ES1	Sustain and promote viable and diverse native plant communities that are characteristic of the region.		
	ES2	Maintain and promote healthy and diverse native wildlife populations.		
	ES3	Protect and restore natural water courses, wetlands, and hydrologic processes.		
	ES4	Use and document scientific knowledge of comparable open space resources and widely accepted and well documented resource management techniques as a basis for management decisions.		
	ES5	Expand ability to perform natural resource management.		

TABLE 2. BALANCED RECREATION USE OBJECTIVES

Topic	Objective	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
Balanced Recreation Use	BR1	Provide diverse, nature-dependent recreation activities in the city's open space areas.		
	BR2	Improve and maintain trails to be environmentally sustainable.		
	BR3	Facilitate and encourage multi-use compatibility on trails.		
	BR4	Enhance partnerships and programs aimed at improving recreation experiences.		

TABLE 3. NATURAL HAZARD MITIGATION OBJECTIVES

Topic	Objective	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
Natural Hazard Mitigation	NH1	Reduce the risk and severity of wildland fire and minimize the impact of fire suppression activities within City open spaces and adjacent residential areas.		
	NH2	Protect life and property from natural hazards, including neighboring communities during mitigation or hazard events.		
	NH3	Improve cooperative planning to respond to natural hazards.		

Policy Comparison

TABLE 4. ENVIRONMENTAL SUSTAINABILITY POLICIES

Objective	Policy	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
ES1: Vegetation Protection	P1	Limit trail construction, and facility development in riparian and other wetland areas (and associated buffers) to protect them from disturbance. Recreational, educational, and other programmatic activities should be conducted in previously developed areas, when possible, to minimize impacts to riparian/wetland areas.		
	P2	Monitor open space conditions with an emphasis on documenting the location, distribution, and abundance of special-status plants and plant communities, native grasses, wildflowers, and other native flora.		
	P3	Align or relocate, modify trails to avoid impacting sensitive habitats such as wetlands and areas where endangered species are present. Avoid aligning trails along the boundaries of sensitive habitats.		
	P4	Protect riparian ecosystems and habitat to maintain natural hydrologic process, water quality, and wildlife benefits. If necessary, enhance and restore riparian habitats to improve function.		

Objective	Policy	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
	P5	Protect common native plant species from disturbance, such as trampling, and disease, such as Sudden Oak Death.		
	P6	Monitor and control exotic or nuisance plant species.		
	P7			Preserve and enhance riparian, stream, and other wetland communities locally and in coordination with other agencies to continue providing important habitat networks.
ES2: Wildlife Protection	P8	Monitor sensitive terrestrial and aquatic wildlife species in terms of their presence/absence and potential to occur on City of Belmont open space lands.		
	P9	Avoidance of sensitive wildlife species, critical breeding or nesting seasons, and critical breeding or nesting habitats during trail or facility construction.		
	P10	Protect common native wildlife species from disturbance, and disease.		
	P11			Preserve and enhance native wildlife habitat locally and in coordination with other agencies to continue protecting important habitat networks.

Objective	Policy	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
ES3: Water Resources	P12	Protect surface and ground water from chemical contamination.		
	P13	Minimize unnatural soil erosion and sedimentation of waters and wetlands.		
ES4: Science-based management	P14	Develop performance measures when designing city projects for the purpose of open space management and collect monitoring data to evaluate project success.		
	P15	Designation and evaluation of trail improvement project proposals will be based the environmental sustainability and on best available data, including inventories of wildlife, and vegetation resources. The city will undertake site specific and programmatic efforts to extend and improve upon the biological data and recreational benefits underlying its decision-making criteria		
ES5: Expand ability	P16	Develop written agreements with volunteer groups to perform natural resource management tasks.		
	P17	The city will lead, coordinate, or partner with institutions, agencies, and organizations when conducting natural resource management activities.		

Objective	Policy	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
	P18			Expand volunteer restoration programs subject to established protocols to ensure optimal environmental protection.

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TABLE 5. BALANCED RECREATION POLICIES

Objective	Policy	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
BR1: Balanced Recreation Uses	P19	Trail access should be provided for a range of user capabilities and needs (including persons with physical limitations) in a manner consistent with State and Federal regulations. The Americans with Disabilities Act Accessibility Guidelines for Outdoor Developed Areas will inform trail improvement and maintenance where conditions permit.		
	P20	Design and improve trails to facilitate safe trail use by all visitors with a focus toward slowing travel speeds, having long sight lines, and establishing safe passing zones.		
	P21	The city may prohibit certain trail uses or apply increased trail use restrictions within certain areas to enhance safety, minimize conflicts between trail users, and protect natural resources in sensitive resource areas.		
	P22	Maintain high quality visitor experiences.		
	P23	Diversify recreation opportunities in the open space areas, subject to policies that apply to all users of these areas.		
BR2: Trail Management	P24	Authorized trailheads must include site and trail identifying signage, allowed uses, posted trail map, garbage can with securable lid, and a dog waste bag dispenser.		

Objective	Policy	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
	P25	Monitor and evaluate open space trail conditions on city open space lands to identify significant erosion, informally created trails, trail redundancy or otherwise unnecessary trail segments.		
	P26	Maintain trails by improving drainage, hardening, widening based on critical evaluations.		
	P27	Modification to any open space resources on open space lands is prohibited unless authorized personnel have given express approval to perform such tasks, including trail construction, improvement, closing, or decommissioning trails.		
	P28	Authorized trails must have wayfinding signage and associated naming conventions		
	P29		Evaluate opportunities to construct new trails that could connect with other regional trails, with existing city recognized trails, and by designating other trails not currently formally recognized as part of the city's open space trail system.	
BR3: User Compatibility	P30	To provide visitor opportunities to experience natural sounds, no amplified sounds - i.e. portable speakers - are allowed on open space lands unless expressly approved as part of a group activity permit.		

Objective	Policy	Base Plan	Recreation Emphasis Alternative Additions	Habitat Protection Emphasis Alternative Additions
	P31	On multiuse trails, the following etiquette rules apply: cyclists yield to all other trail users, pedestrians yield to equestrians. Downhill travel yield to uphill travel. Maintain safe speeds and announce yourself when passing.		
	P32	Use of Belmont open space lands is subject to the City's existing regulation where lands are open dawn to dusk. Nighttime use is prohibited.		
BR4: Enhance Partnerships	P33	Develop written agreements with volunteer groups to perform trail maintenance or construction tasks.		
	P34	Identify locations where trails can be improved or established in open space to connect the City and other open space areas neighboring Belmont, such as Sugarloaf Mountain and San Juan Canyon. Coordinate with San Mateo County and the city of San Mateo.		

TABLE 6. NATURAL HAZARD POLICIES

Objective	Policy	Base Plan	Recreation Emphasis Alternative	Habitat Protection Emphasis Alternative
NH1: Wildfire Hazards	P35	Reduction of wildfire fuel. Evaluate the potential to reduce forest fuel loading through the removal of smaller trees to reduce forest floor fuel buildup and ladder fuels.		
	P36	Prepare wildland fire response plans. Plans should identify appropriate fire suppression activities for open space lands in the event of a wildland fire, as well as first responders and any mutual aid agreements. Plans should include detailed maps of infrastructure such as roads, fuel breaks, structures, water sources (hydrants, water tanks, ponds), as well as sensitive natural and cultural resources to be avoided during fire suppression activities.		
	P37	Prohibit activities that have a high risk of sparking fires during periods of extreme fire hazard.		
	P38	Close open space areas of particular concern during extreme fire weather, as determined by San Mateo Consolidated Fire Department, and increase patrol levels where appropriate.		
NH2: Protect life and property	P39	Manage dead and dying trees to limit wind throw and falling trees and limbs.		
	P40	Manage severe erosion areas on hill slopes and near/within streams.		

Objective	Policy	Base Plan	Recreation Emphasis Alternative	Habitat Protection Emphasis Alternative
NH3: Improve cooperative planning	P41	Participate in county Fire Safe Councils and any relevant Community Wildfire Protection Plan (CWPP) efforts.		
	P42			Partner with abutting property owners to manage adjacent vegetation and fuel levels.

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Implementation Actions

Below are the recommended implementation actions for the Base Plan, with additional recommendations specific to the Recreation Emphasis Alternative and the Habitat Protection Emphasis Alternative. The Implementation actions are designed to accomplish one or more of the policies laid out in the Management Alternatives– policies are referenced by the policy number and the notation “P#”. These actions have been developed from the recommendations described in both the Environmental Assessment (attached) and Recreation Use Assessment (forthcoming).

Categorization Method

Each action has been categorized using the scale below to estimate the feasibility and ease of implementation. Additionally, actions that are written in bold type have been determined to be urgent due to environmental or social impacts outlined in the Environmental Assessment or the Recreation Use Assessment documents. These urgent actions should be prioritized for implementation regardless of the feasibility and or ease.

TABLE 7. CATEGORIES OF FEASIBILITY AND EASE OF IMPLEMENTATION OF RECOMMENDED ACTIONS.

Easy	Medium	Hard
These actions can be performed immediately under existing City programs, funding, or with minimal additional effort.	These actions require additional planning, equipment, staffing, funding – either internal or external, or other operational changes.	These actions may require substantial planning, interagency coordination, staffing, funding, or other operational changes.

Base Plan

TABLE 8. RECOMMENDED IMPLEMENTATION ACTIONS FOR THE BASE PLAN.

Topic	Easy	Medium	Hard
Environmental Sustainability	Provide educational materials on Sudden Oak Death (SOD) and information about how to minimize the spread of SOD at high use trailheads. (P5)	Realign, add drainage or otherwise improve trail sections identified in the Recreation Use Assessment as having “high” erosion levels. The Rambler Trail was identified as a top priority given its severity. Prioritize other trail segments for improvement and incorporate into a multi-year workplan. (P13/P26)	Periodically inventory trails and facilities to assess any impacts to watercourses, riparian areas, and wetlands, and prepare plans for protection or restoration, as appropriate. (P3)
	Implement seasonal restrictions on and vegetation management activities during nesting bird season. Work should be avoided during February 1 to August 31. (P9)	Implement an “early detection and response” protocol, as defined in the environmental assessment memorandum to monitor and control new or spreading exotic or undesirable species. Create an agreement and work plan with existing volunteer groups to perform the work in accordance with the protocol. (P6/P16)	Conduct protocol surveys for sensitive wildlife or plant species, as defined by the USFWS or CDFW, in areas where these species have at least moderate potential to occur, whenever conducting ground disturbing activities. (P2)
	Close trails due to wet conditions. Rain closure periods will be determined by city staff based on evaluation of conditions and forecasted weather patterns. (P13)	Actively seek additional funding sources to support natural resource management. (P17)	Improve trail stream crossings by either realigning the trail to prevent crossing the stream altogether or elevating the trail over the stream. (P3/P4/P9/P13)

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Topic	Easy	Medium	Hard
	Prohibition of dogs in water bodies. Dogs are not allowed to enter any water bodies, including streams and marshes, on open space lands. Messaging and signage and education should be developed. (P13)		
	Implement weather-related restrictions on ground disturbing activities like trail maintenance and construction activities. This type of work should be avoided prior to rain events. (P13)		
Balanced Rec Use	Increase education and enforcement of open space regulations including dogs on leash, speed limits, amplified sound, etc. (P23/P31)	Adopt or decommission legacy trails identified in the Recreation Use Assessment following further public outreach. (P20)	Develop policies for the use of e-bikes and other electric transportation devices on open space lands and trails. The city will study other local open space policies and conduct visitor outreach to determine the direction of these policies. (P21/P23)
	Periodically conduct visitor surveys to gauge experiences for all trail users. (P22)	Decommission redundant trail segments. Conduct de-compaction and revegetation where needed. (P1/P20)	Add calming features on trails to reduce speed, and add landings for respite, passing, and vistas. (P20)
	Clearly identify property boundaries of open space lands and develop an education and enforcement program for adjacent landowners conducting illegal modifications to open space lands (e.g. building trails to access open space lands from their house or neighborhood). (P27)	Develop a policy for managing organized group use of open space lands, such as camps, school field trips, exercise classes, etc. (P23)	
	Develop a standard trail naming policy for authorized trails. The naming policy will be adopted on all open space signage and messaging. (P28)		

Topic	Easy	Medium	Hard
	Update regulatory signage at trailheads to use a consistent design across City open space lands. (P1/P32)		
Natural Hazard	Continue fuel reduction treatments in previously treated areas in Waterdog Lake. (P35)	Develop annual fuel reduction treatment plan. (P36)	Inventory city open space lands to assess fuel loads and forest structure related to fire. Identify access issues and city and community or regional fire concerns. (P35)
		Encourage neighboring property owners to maintain adequate fire clearance around existing development. Consult with regulatory agencies to encourage that construction of new development maintains fire agency recommended setbacks for fire clearance between new development and city forest and woodland. (P41)	Conduct a field-based evaluation of fuel conditions in San Juan Canyon for possible reduction treatments. (P35)
		Actively seek additional funding sources to support wildfire hazard mitigation. (P35/P36)	Coordinate with fire agencies and neighboring communities to identify locations where additional fire suppression infrastructure is desirable and practical (e.g. hydrants, water tanks, helicopter zones, safety zones, fuel breaks, consistent with the incident command system. Work cooperatively with these groups to install needed infrastructure. (P36/P41)

Recreation Emphasis Alternative

TABLE 9. RECOMMENDED IMPLEMENTATION ACTIONS FOR THE RECREATION EMPHASIS ALTERNATIVE

Topic	Easy	Medium	Hard
Environmental Sustainability			
Balanced Rec Use		Designate existing connection routes or build new trails between open space areas and to other adjacent protected lands. (P29/P34)	
		Implement single-use and one-way trail segments in areas identified in the Recreation Use Assessment following sufficient public outreach. (P20)	
		Evaluate potential new nature-based recreation programming for open space lands. Specifically, collaborate with environmental educators or other groups to develop a series of docent led nature walks for a variety of audiences. (P23)	
Natural Hazard			

Habitat Protection Emphasis Alternative

TABLE 10. RECOMMENDED IMPLEMENTATION ACTIONS FOR THE HABITAT PROTECTION EMPHASIS ALTERNATIVE.

Topic	Easy	Medium	Hard
Environmental Sustainability	Engage volunteer groups to monitor plant and wildlife species using citizen science efforts like Audubon Christmas Bird Count or "bio-blitzes." (P5/P10)	Restore and expand native bunchgrass areas. (P2/P6/P18)	
		Install wildlife cameras at high activity locations or in riparian habitats to monitor wildlife presence. Coordinate with local agencies and non-profits (e.g. Felidae) to share wildlife camera data to support wildlife distribution study regionally. (P7/P17)	
		Install decontamination stations at high use trailheads to prevent the spread of SOD.	
Balanced Rec Use			
Natural Hazard			

ENVIRONMENTAL ASSESSMENT

1.0 Introduction

This memorandum provides an assessment of existing conditions pertaining to biological resources, recreation (including trail use), and wildfire hazards at Water Dog Park and San Juan Canyon Open Space in the City of Belmont, San Mateo County, California. Following the baseline information collected for these resources, management recommendations are provided to promote a balanced and fair approach that considers environmental protection, public health and safety, diverse recreation, and sustainability. This assessment was conducted by WRA, Inc. (WRA) at the request of the City of Belmont Parks and Recreation Department (City) to inform and support the parks, recreation, and open space (PROS) master planning process, particularly for the Waterdog Lake & Open Space and San Juan Canyon Open Space (Figure 1). This memorandum describes the results of the site visit, which assessed the open space areas for (1) the presence of sensitive biological communities, special-status plant species, and special-status wildlife species, (2) the potential for the site to support special-status plant and wildlife species.

In addition to documenting existing biological communities and sensitive habitats in both park units, WRA broadly assessed the baseline quality of such habitats located near the trails. This will enable the Parks Department to track and evaluate any changes in habitat quality, and implement management actions accordingly. Since this is a high-level planning effort intended to inform actions at a later time, there is no “project” in which impacts can be assessed. “Projects” include tangible actions undertaken by the City’s Parks Department and can be, but is not limited to: trail repair, trail building, constructing footbridges, pruning back vegetation along trails, sediment dredging, and vegetative fuels management.

Waterdog Lake & Open Space (Waterdog or WDL) is approximately 293 acres and features the following: trails which meander through chaparral, oak woodland, and riparian habitats; a viewshed of the San Francisco Bay; and Waterdog Lake at its center. San Juan Canyon Open Space (San Juan Canyon or SJC) is approximately 82 acres, located approximately ¾-mile west of Waterdog, across Ralston Way. This open space features similar habitats as Waterdog. Both open spaces are generally surrounded by single-family residential land use.



Figure 1. San Juan Canyon and Waterdog Lake Open Spaces

Waterdog Lake Open Space
Belmont, California



2.0 Regulatory Background

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and would apply to any future, ground disturbing actions to sensitive and common species that the city may choose to implement following adoption of the Open Space Management Plan (OSMP).

2.1 Special-Status Species

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). These Acts afford protection to both listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC), and National Marine Fisheries Service (NMFS) Species of Concern (SOC), are species that face extirpation if current population and habitat trends continue. U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFW special-status invertebrates are also considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under CEQA. In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Bat species designated as “High Priority” by the Western Bat Working Group qualify for legal protection under Section 15380(d) of the CEQA Guidelines. “High Priority” species are defined as “imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats”.

Plant species included within the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory, CNPS 2020) with California Rare Plant Rank (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under the CEQA. Some Rank 4 plant species meet the definitions of Section 1901 Chapter 10 of the Native Plant Protection Act or Sections 2062 and 2067 of the California Fish and Game Code (CFGC) that outlines CESA. However, the CNPS and CDFW strongly recommend that these species be fully considered during the preparation of environmental documentation related to CEQA. This may be particularly appropriate for the type locality of a Rank 4 plant species, for populations at the periphery of a species range, or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology or occurring on unusual substrates. A description of Ranks is provided below in Table 1.

TABLE 1. DESCRIPTION OF RANKS AND THREAT CODES

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

2.2 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are regulated under federal regulations (such as the Clean Water Act [CWA]), state regulations (such as the Porter-Cologne Act, the CDFW Streambed Alteration Program, and CEQA), or local ordinances or policies (such as City or County Tree Ordinances, Special Habitat Management Areas, applicable Local Coastal Programs, and General Plan Elements).

2.3 Waters of the United States

Section 404 of the CWA gives the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) regulatory and permitting authority regarding discharge of dredged or fill material into “navigable waters of the United States”. Section 502(7) of the CWA defines waters as “waters of the United States, including territorial seas.” Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term “waters of the United States” as it applies to the jurisdictional limits of the authority of the Corps under the CWA.

A summary of the definition of “waters of the U.S.” in 33 CFR 328.3 as published in 1986 includes:

- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (2) All interstate waters including interstate wetlands;
- (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) from which fish or shellfish are or could be taken and sold

- in interstate or foreign commerce; or (iii) which are used or could be used for industrial purpose by industries in interstate commerce;
- (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
- (5) Tributaries of waters identified in paragraphs (a) (1)—(4) of this section;
- (6) The territorial seas;
- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)—(6) of this section.

Areas not considered to be “waters of the United States” are exempted under the Preamble to the 1986 Rule and subject to a case-by-case analysis, including:

- (1) Non-tidal drainage and irrigation ditches excavated on dry land.
- (2) Artificially irrigated areas which would revert to upland if the irrigation ceased.
- (3) Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing,
- (4) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
- (5) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States (see 33 CFR 328.3(a)).

In the Corps Rivers and Harbors regulations (33 CFR Part 329.4), the term “navigable waters of the U.S.” is defined to include all those waters that are subject to the ebb and flow of the tide, and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

The limits of Corps jurisdiction under Section 404 as given in 33 CFR Section 328.4 are as follows:

- (1) *Territorial seas*: three nautical miles in a seaward direction from the baseline;
- (2) *Tidal waters of the U.S.*: high tide line (HTL) or to the limit of adjacent non-tidal waters;
- (3) *Non-tidal waters of the U.S.*: ordinary highwater mark or to the limit of adjacent wetlands; or
- (4) *Wetlands*: to the limit of the wetland.

The Corps has developed standard methods and data reporting forms contained in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement; Corps 2008) to determine the presence or absence of Waters of the U.S. The procedures described in the Corps Manual were used to identify wetlands and non-wetland waters in the Study Area that are potentially subject to regulation under Section 404 of the CWA.

2.4 Waters of the State

The Dickey Water Pollution Act of 1949 and Porter Cologne Act of 1969 established the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Board (RWQCB) districts in the State of California. The SWRCB and each RWQCB district regulates activities in Waters of the State, which include Waters of the U.S. Waters of the State are defined by the Porter-Cologne Act as “any surface

water or groundwater, including saline waters, within the boundaries of the state.” In addition, the SWRCB has adopted a wetland definition that is similar to, but slightly different from, that used by the Corps. The state definition as adopted in April 2019 and currently in effect, states that:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation.

The RWQCB regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act through the State Water Quality Certification Program. State Water Quality Certification is necessary for all projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State. In order for a Section 404 permit to be valid, Section 401 of the CWA requires a Water Quality Certification or waiver to be obtained. The Water Quality Certification (or waiver) determines that the permitted activities will not violate water quality standards individually or cumulatively over the term of the action. Water quality certification must be consistent with the requirements of the CWA, CEQA, the CESA and Porter-Cologne Act.

If a proposed project or portion of a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activity under its state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements. In these cases, a Water Quality Certification is not necessary under Section 401 of the CWA because federal jurisdiction does not apply.

2.5 Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of the CFGC. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, “on, or pertaining to, the banks of a stream;” therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

2.6 Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. The CDFW ranks sensitive communities as “threatened” or “very threatened” and keeps records of their occurrences in its Natural Diversity Database (CNDDDB, CDFW 2020). Sensitive plant communities are also identified by CDFW on their *List of California Natural Communities Recognized by the CNDDDB* (CDFW 2020). Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFW or USFWS must be considered and evaluated under CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in City or County General Plans or ordinances.

2.7 Relevant City of Belmont Policies

Policies relative to management and conservation of the city’s open space areas are found in the following planning documents:

- Belmont Parks and Open Space Plan (1992)
- City of Belmont General Plan, Parks and Conservation Elements (2017)
- The Western Hills Area Plan (1990)

2.7.1 Belmont Parks and Open Space Plan (1992)

Action focused recommendations from the 1992 Belmont Parks and Open Space Plan include the following:

- The preserved open space should be retained in a natural state for passive recreation, education, and aesthetic purposes.
- Vegetation management will be required to create and maintain native ecosystems and for fire control.
- Development should be limited to those types of facilities that support the intended passive uses, including trails, trailheads, signage, picnic areas, and small neighborhood parks.

Relevant policies from the 1992 Belmont Parks and Open Space Plan include the following:

- Assist the Fire Protection District to identify wildland fire hazard areas and develop fire access roads.
- Preserve large contiguous units of open space.
- Protect wildlife habitat by maintaining wildlife corridors and preserving habitat and corridors in new residential neighborhoods.

2.7.2 City of Belmont General Plan, Parks and Conservation Elements (2017)

Relevant goals and policies from the 2017 General Plan Parks and Conservation Elements (City of Belmont 2017) include the following:

- Continue to develop and support a balanced and integrated open space system reflecting a variety of considerations, including natural resource conservation, outdoor recreation, and public health

and safety, to ensure synergies between various open space components and compatibility with land use planning.

- Continue to designate and protect open space lands for the preservation of scenic areas, natural drainage ways, and plant and wildlife habitats; for outdoor recreation; and for public health and safety. See also policies in the Conservation and Safety elements.
- Maintain connectivity between large open spaces in Belmont and the region, including the Waterdog Lake area, San Juan Hills area, Sugarloaf Mountain, and the open space in the San Francisco Public Utility District's Crystal Springs watershed.
- Consistent with the San Juan Hills and Western Hills area plans, cluster development in the hillside areas of western Belmont in order to maintain contiguous habitat areas, minimize grading, and limit exposure to steep slopes and other sensitive areas. See also policies in the Land Use Element.
- Develop programs to control invasive plant species that threaten the natural resources.
- Continue programs to reduce the fire danger in the open space.
- Preserve and protect open space resources using various methods available to the City.
- Protect Belmont Creek from future encroachment through regulation, development review, conservation easements, or other appropriate actions.
- Seek to preserve the existing open space areas in the San Juan Hills and Western Hills, consistent with the Area Plans, especially on steep hillsides and sensitive habitat areas.
- Protect and maintain open space for the preservation of natural resources.
- Ensure that any improvements recommended for open space areas are appropriate for the type of open space and the use proposed.
- In portions of Belmont that include significant open space resources, use area plans to address the balance and interface between natural and developed areas.
- Reduce risk of wildland fire, ecological succession, and pathogen threats (such as Sudden Oak Death) through active maintenance of public spaces and education and enforcement of development standards on private property.
- Ensure that future acquisitions of open space land are compatible with the City's open space strategy and long-term interests.
- Protect and restore biological and ecological resources in Belmont, including sensitive wildlife species and their habitats.
- Support the protection, preservation, restoration, and enhancement of habitats of State or federally listed rare, threatened, endangered and/or other sensitive and special status species, and favor enhancement of contiguous areas over small, segmented remainder parcels.
- Continue to maintain, protect, restore, and enhance Belmont's ecologically important areas and seek to reduce impacts on them, including the creek corridors, the open space, and the wetlands around O'Neill Slough.
- To the greatest extent feasible, ensure that development does not disturb sensitive habitat and special status species by requiring appropriate and feasible mitigation measures.
- Maintain functional wildlife corridors and habitat linkage in order to contribute to regional biodiversity and the viability of rare, unique or sensitive biological resources throughout the city and region.
- In design and construction, require use of best practices that preserve natural resources, such as soil, trees, native plants, and permeable surfaces.
- Avoid light pollution and unnecessary glare by requiring development projects to use design features and shielding methods that cast outdoor light downward and minimize glare and to install the minimum amount of outdoor lighting necessary for safety and security.

- Encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation, and ensure the maximum number and variety of well-adapted plants are maintained.
- Goal 5.4 Preserve and restore Belmont's waterways and adjacent corridors as valuable community resources that serve as plant and wildlife habitats, groundwater recharge facilities, flood control and irrigation components, and connections between open space areas.
- Restore Belmont Creek to enhance ecological functions, biological resources, hydrology function, and flood control.
- Preserve, where possible, natural watercourses or provide naturalized drainage channels within the city. Where necessary and feasible, implement restoration and rehabilitation measures.
- Protect, restore, and enhance a continuous corridor of native riparian vegetation and wildlife habitat along Belmont's waterways, water bodies, and wetlands.
- Preserve and enhance the natural riparian environment along waterway corridors, including Belmont Creek, by minimizing environmental and visual impacts. See also Policy 4.5-2 in the Parks, Recreation, and Open Space Element.
- Preserve water quality by promoting the protection of Belmont's creeks and other natural water bodies from pollution.
- Continue to participate in the San Mateo Countywide Water Pollution Prevention Program.
- Encourage residents and businesses to use best management practices (BMPs) to reduce water pollutant loads that result from daily activities, such as using landscaping chemicals and fertilizers and repairing and washing cars outdoors.
- Require development projects to incorporate structural and non-structural best management practices (BMPs) to mitigate or reduce the projected increases in pollutant loads, in accordance with the NPDES permit guidelines.
- Ensure that the design and construction of new infrastructure elements does not contribute to stream bank or hillside erosion or creek or wetland siltation, and incorporates site design and source control BMPs, construction phase BMPs, and treatment control BMPs to minimize impacts to water quality.
- Implement water pollution prevention methods to the maximum extent practicable, supplemented by pollutant source controls and treatment.

2.7.3 The Western Hills Area Plan (1990)

Relevant goals and policies from the 1990 Western Hills Area Plan include the following:

- Encourage Open Space Protection: Encourage the preservation of open space in areas of scenic, natural resource, and recreational value, as well as areas that are geologically hazardous or steeply sloped. Assist private landowners in finding ways for them to manage and permanently preserve private open space.
- Preserve and maintain existing open space areas.

3.0 Methods

On March 8, 21, and 22, 2022 WRA biologists, Ivy Poisson and Brian Kearns, traversed over 10 miles of existing trails within the Study Area to:

1. Ground-truth vegetation communities obtained from the San Mateo County vegetation mapping dataset (2021)
2. Determine if existing conditions provide suitable habitat for special-status plant or wildlife species,
3. Determine the baseline conditions of habitat quality within view from the trails,
4. Conduct a qualitative trail assessment, and
5. Determine the open spaces' consistency with existing regulations and policies.

A list of incidental species observations was also compiled. Plant nomenclature follows the Jepson Flora Project (2022), except where noted. For cases in which taxonomic discrepancies occur between Baldwin et al. and the Inventory, precedence was given to the species classification used in the Inventory.

3.1 Sensitive Biological Communities

The San Mateo County vegetation mapping dataset (2021) was examined to provide baseline information on plant communities. Biological communities present in the Study Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Manual of California Vegetation* (Sawyer et al. 2009). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA, and other applicable laws and regulations. Each biological community is given a state or global ranking, ranging from 1 to 5. These rankings are defined below, with G indicating global status, and S indicating state status for California. State and/or global rankings of 1, 2, or 3 are considered sensitive.

- 1 **Critically Imperiled** — At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
- 2 **Imperiled** — At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- 3 **Vulnerable** — At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- 4 **Apparently Secure** — At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
- 5 **Secure** — At very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations and ordinances, and generally are ranked 4 or 5 on a global or state level. These communities may provide suitable habitat for some special-status plant or wildlife species and are discussed below. Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local

laws, regulations and ordinances. Applicable laws and ordinances are discussed above. Special methods used to identify sensitive biological communities are discussed below.

3.1.1 Wetlands and Waters

The Study Area was surveyed at a reconnaissance level to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFW were present. The assessment was based primarily on the presence of wetland plant indicators but may also include any observed indicators of wetland hydrology as defined by the Corps Manual (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2008). Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status of obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC) as given on the U.S. Department of Agriculture: National Wetland Plant List (Corps 2020). Evidence of wetland hydrology can include evidence such as visible inundation or saturation, surface sediment deposits, algal mats and drift lines, and oxidized root channels. Given that the site visits did not include a routine-level wetland delineation and was only reconnaissance level, soils were not examined in the field as part of this assessment. Streams were remotely mapped in ArcGIS using hydrologic modeling tools. Using the 2010 ARRA lidar dataset, streams were modeled using a 3-acre watershed with a nearest neighbor algorithm to determine flowlines.

3.2 Special-status Species

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database search. Database searches for known occurrences of special-status species was for the San Mateo and eight surrounding 7.5-minute U.S. Geological Survey (USGS) quadrangles. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Study Area:

- CNDDDB records (CDFW 2022)
- USFWS Information for Planning and Conservation Species (USFWS 2022)
- CNPS Inventory records (CNPS 2022)
- California Bird Species of Special Concern (Shuford and Gardali 2008)
- USFWS Critical Habitat Mapper (USFWS 2022)

Special status species are defined as federally or state listed species (threatened or endangered; FT, ST, FE, SE), CDFW Species of Special Concern (SSC) and CDFW Fully Protected (FP). In addition to federal and state listing status for plant species, species with a California Native Plant Society Rare Plant Ranking (CRPR) of 1 through 4 is also included in this report.¹ Bats are also given special consideration if they are listed by the Western Bat Working Group (WBWG) as Medium or High.²

¹ Definitions of CRPR ranking is available here: <https://www.cnps.org/rare-plants/cnps-rare-plant-ranks>

² WBWG "High" designation represents those species considered the highest priority for funding, planning, and conservation actions; "medium" designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats.

3.3 Habitat Quality

The overall habitat quality of the Study Area was evaluated based on the cover of native versus non-native plant species, presence and extent of invasive plant species, and extent of anthropogenic disturbance. General notes and observations of plant species composition were made throughout the Study Area by WRA biologists while traversing throughout the existing trail network, followed by a review of aerial imagery, in order to assign a general value to the Study Area. This assessment is qualitative in nature and should not be interpreted to be a comprehensive assessment of each biological community that is identified within the Study Area. The definitions of habitat quality ranking are listed below.

TABLE 2. HABITAT QUALITY CATEGORIES

<p>High Quality / Mostly Intact</p> <ul style="list-style-type: none"> • Vegetation is composed of greater than 75% native plant cover • Invasive species are generally absent based on visual estimates from the trail network • Visible evidence of vegetation trampling by trail users is absent or negligible
<p>Moderate Quality / Moderately Altered or Impacted</p> <ul style="list-style-type: none"> • Vegetation is composed of greater than 50% native plant cover • Invasive species are present but was observed to be less than 50 square feet based on visual estimates from the trail • Visible evidence of vegetation trampling by trail users is present but not extensive
<p>Low Quality</p> <ul style="list-style-type: none"> • Vegetation is composed of less than 50% native plant cover based on visual estimates from the trail • Invasive species are present, comprise more than 100 square feet, and is observed to be crowding out/negatively impacting native species within the vegetation community • Visible evidence of vegetation trampling by trail users is present but not extensive
<p>Low Quality / Extensively Altered or Impacted</p> <ul style="list-style-type: none"> • Vegetation is composed of less than 50% native plant cover based on visual estimates from the trail • This habitat features an invasive species as a dominant or codominant in the tree/shrub/herb stratum • Visible evidence of vegetation trampling by trail users is present and extensive

3.4 Trail Assessment

The purpose of the trail environmental condition assessments was to generally characterize environmental conditions on open space trails, which could be used to develop recommendations that could be implemented as part of the OSMP. A qualitative assessment of trail conditions on both existing mapped trails (those shown by City maps) and existing unmapped trails (those which are not shown on City maps) was made based on the level of erosion and vegetation impacts observed. Categories include high, medium, and low erosion; these categories are defined in Table 3 below, along with a representative photo of the category. Point data were collected along the existing mapped trail feature. In addition, WRA also noted if adjacent vegetation shows signs of impacts (trampling, what appears to be obvious/illegal vegetation trimming). Maps of trail conditions can be found in the *Recreation Use Assessment*.

TABLE 3. TRAIL CONDITION CATEGORIES

<p>High</p>	<p>High Erosion There are more than two deep ruts located along the length of the trail, and there are several observations that it significantly interferes with pedestrian and cycling activities where it causes trail users to create additional pathways to avoid this erosion feature. For this category, evidence of trail user impacts resulting from the erosion feature includes more than one of the following: trail widening, braided trails, unsanctioned trails, soil compaction, and vegetation trampling.</p>	
<p>Medium</p>	<p>Medium Erosion There are one or two noticeable ruts forming along the length of the trail, and there are some observations that it significantly interferes with pedestrian and cycling activities. For this category, evidence of trail user impacts resulting from the erosion feature includes one of the following: trail widening, braided trails, unsanctioned trails, soil compaction, and vegetation trampling.</p>	
<p>Low</p>	<p>Low Erosion There is a shallow rill forming along the length of the trail, but there are no observations that it significantly interferes with pedestrian and cycling activities. There is no evidence of trail users negatively impacting adjacent vegetation to avoid this erosion feature.</p>	

4.0 Results

4.1 Biological Communities and Vegetation Management

Non-sensitive biological communities in the Study Area include developed areas, coast live oak woodland (*Quercus agrifolia*, S4 G5), eucalyptus groves (*Eucalyptus* spp., not ranked), coyote brush scrub (*Baccharis pilularis*, S5 G5), California sagebrush scrub (*Artemisia californica*, S5 G5), chamise chaparral (*Adenostoma fasciculatum*, S5 G5), non-native annual grassland (not ranked), and developed. Sensitive biological communities include California bay woodland (*Umbellularia californica*, S3 G4), arroyo willow thickets (*Salix lasiolepis*, S3 G4), and California buckeye groves (*Aesculus californica*, S3 G3). **Figure 2** and **Figure 3** shows the location of each biological community for WDL and SJC, respectively. Descriptions for each biological community are provided below, the mapped extent of each biological community within each open space is identified in Table 4.

TABLE 4. BIOLOGICAL COMMUNITIES WITHIN THE STUDY AREA

Biological Community ¹	Natural Community ³	Waterdog (acres)	San Juan Canyon (acres)	% of Study Area
Non-Sensitive⁴				
broadleafed upland forest	coast live oak woodland	146.75	48.59	52.1
broadleafed upland forest	eucalyptus groves	1.59	0.05	0.4
coastal scrub	coyote brush scrub	18.82	18.45	9.9
chaparral	California sagebrush scrub	22.84	-	6.1
chaparral	chamise chaparral	52.01	-	13.9
chaparral	mixed shrub	8.97	-	2.4
valley and foothill grassland	non-native annual grassland	8.78	4.93	3.7
developed ²		0.84	2.07	0.8
Sensitive⁴				
broadleafed upland forest	California bay woodland	22.62	-	6.0
riparian woodland	arroyo willow	7.23	5.87	3.5
riparian woodland	California buckeye groves	1.70	1.68	0.9

¹Holland (1986), ²Biological community not described in Holland (1986), ³Sawyer et al. (2009), ⁴Determination based on the *List of California Sensitive Natural Communities* (CDFW 2021)

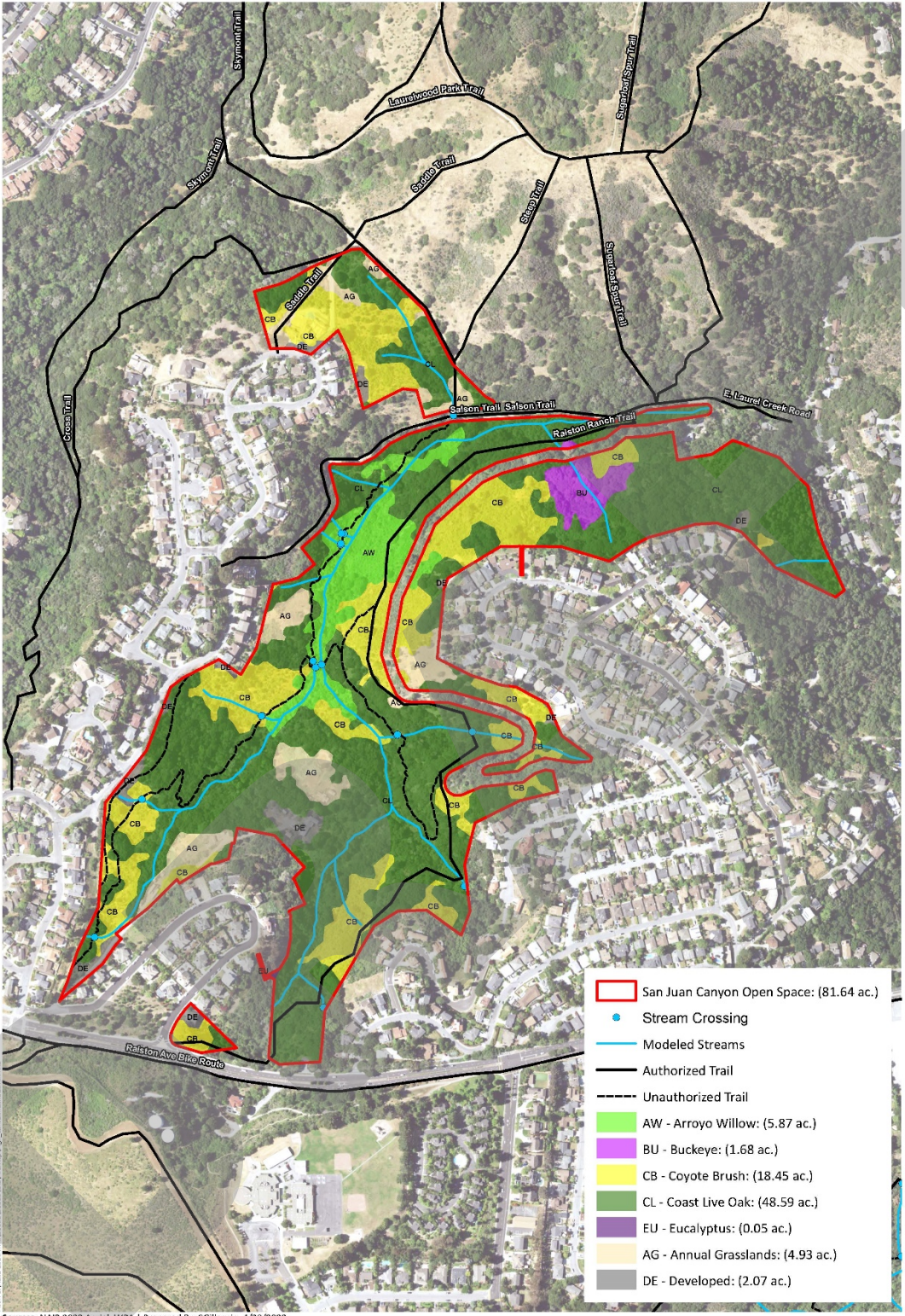


Figure 2. San Juan Canyon Open Space Land Cover Types

San Juan Canyon Open Space
Belmont, California





Figure 3. Waterdog Lake & Open Space Land Cover Types

Waterdog Lake Open Space
Belmont, California

Coast live oak woodland (*Quercus agrifolia*, S4 G5) are known from the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Mendocino County south to San Diego County. This vegetation community is typically located on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al. 2009). Within the Study Area, coast live oak woodlands occupy approximately 194 acres, or 51.8 percent. Coast live oak woodlands are generally found in the cooler, north-facing slopes in Waterdog and throughout San Juan Canyon. Dominant species in the tree layer include coast live oak, California bay, and California buckeye, with coast live oak comprising greater than 50 percent of the relative cover in this stratum, with less than 30 percent relative cover of California bay. Most stands contain a relatively dense and well-developed tree canopy reducing the density of a shrub layer to scattered individuals. Shrub species observed in the coast live oak woodlands include poison oak (*Toxicodendron diversilobum*), snowberry (*Symphoricarpos albus*), sticky monkey flower (*Diplacus aurantiacus*), coyote brush, toyon (*Heteromeles arbutifolia*), elderberry (*Sambucus nigra* ssp. *caerulea*), and blueblossom (*Ceanothus thyrsiflorus*). The herbaceous layer is dominated by a mix of shade tolerant native herbs and non-native, invasive forbs. Native species includes but is not limited to the following: common yarrow (*Achillea millefolium*), California mugwort (*Artemisia douglasiana*), miner's lettuce (*Claytonia perfoliata*), soaproot (*Chloragalum pomeridianum*), bee plant (*Scrophularia californica*). Non-native herbaceous species include oat grass (*Avena fatua*), ripgut brome (*Bromus diandrus*), scarlet pimpernel (*Lysimachia arvensis*), and sow thistle (*Sonchus asper*).

Eucalyptus groves (*Eucalyptus* spp., not ranked) are known from the Coast Ranges and Central Valley, typically as planted woodlands and shelterbelts to buffer coastal winds and provide shade. These groves are not described in Holland (1986), but are included in Sawyer et al. (2009), which describes eucalyptus groves as *Eucalyptus globulus* Semi-Natural Woodland Stands. This vegetation alliance is dominated by one of several eucalyptus species, which are not native to North America. Eucalyptus groves are frequently situated in rural and semi-urbanized settings, along streams, and coastal hills and prairies. Eucalyptus groves comprise 0.4% of the Study Area and is limited to a small stand in the within the northeastern corner of Waterdog, at the end of Cliffside Court. A small stand of trees was observed in San Juan Canyon, along Ralston Ranch Road.

Coyote brush scrub (*Baccharis pilularis*, S5 G5) is described by Sawyer (2009) as known from the outer Coast Ranges and Sierra Nevada Foothills from Del Norte County south to San Diego County. This vegetation community is typically located on river mouths, riparian areas, terraces, stabilized dunes, coastal bluffs, open hillsides, and ridgelines on all aspects underlain by variable substrate of sand to clay (Sawyer et al. 2009). Within the Study Area, this biological community often intergrades with coast live oak woodland and California sagebrush scrub, and share many of the common species found in the understory, like poison oak, California sagebrush, blue blossom, and California blackberry (*Rubus ursinus*).

California sagebrush scrub (*Artemisia californica*, S5 G5) is known from the outer Coast Ranges, western Transverse Range, and Peninsular Ranges from Marin County south to San Diego County. This vegetation community is typically located steep, well-drained slopes underlain by shallow alluvial and colluvial derived soils (Sawyer et al. 2009). Within the Study Area, California sagebrush scrub is only found within Waterdog. This community often intergrades with coast live oak woodland, California bay woodland, and coyote brush scrub. The majority of California sagebrush scrub occurs in the southeastern section of Waterdog. Coast live oak was occasionally observed within this scrub community, but the individual oak trees were still relatively small and is at low cover. Other shrub species observed include coyote brush, poison oak, and sticky monkey flower. Species within the herbaceous layer consist of a mix of native and nonnative species; native species include purple needle grass and Pacific sanicle, non-native species include compact brome and scarlet pimpernel.

Chamise chaparral (*Adenostoma fasciculatum*, S5 G5) occurs across cismontane California in a variety of topographic settings from coastal bluffs to steep, lower montane slopes (Sawyer et al. 2009). This biological community is found only at Waterdog, on the arid, south-facing slopes. Other shrub species observed within this community include California sagebrush, coyote brush, poison oak, blueblossom, sticky monkey flower, and common manzanita (*Arctostaphylos manzanita*). Occasionally, French broom was also observed (*Genista monspessulana*). Native species observed in the herbaceous layer include purple needle grass (*Stipa pulchra*), manroot (*Marah fabacea*), and soap plant. Non-native species include compact brome (*Bromus madritensis*), scarlet pimpernel, and black mustard (*Brassica nigra*).

Mixed shrub (no ranking) consist of an even mix of California sagebrush, chamise, and coyote brush in the shrub layer. Since these three species are co-dominants (approx. 30% relative cover each), this does not fit into any of the vegetation classifications and membership rules described by the Manual of California Vegetation (CNPS 2022b). Other non-dominant shrubs include sticky monkey flower, toyon, fuchsia flowered gooseberry (*Ribes speciosum*), and buck brush (*Ceanothus cuneatus*). Species observed in the herbaceous layer are similar to the other shrub-scrub communities described previously.

Non-native annual grassland (no ranking) is described by Holland (1986) as a dense to sparse cover of non-native annual grasses with flowering culms 0.2- to 1-meter-high and is often associated with numerous species of showy-flowered annual forbs. Most species found in this biological community within the Study Area include non-native grasses and forbs that are characteristic of disturbed areas. This includes oatgrass (*Avena fatua*), black mustard (*Brassica nigra*), bull thistle (*Cirsium vulgare*), common stork's bill (*Erodium botrys*), Italian ryegrass (*Festuca perennis*), fennel (*Foeniculum vulgare*), barley (*Hordeum murinum*), burr medic (*Medicago polymorpha*), Harding grass (*Phalaris aquatica*), English plantain (*Plantago lanceolata*), and lesser trefoil (*Trifolium dubium*). Native species observed in this habitat type include purple needlegrass (*Stipa pulchra*), nude buckwheat (*Eriogonum nudum*), California goldfields (*Lasthenia californica*), pineapple weed (*Matricaria discoidea*), and Torrey's melic grass (*Melica torreyana*). Occasionally, there are small individuals of coast live oak or coyote brush appearing in this community, but this generally appears at less than 1% absolute cover – i.e., not in large enough absolute or relative cover to be classified as coast live oak woodland or coyote brush scrub. Generally, no clear dominants for any of the species listed above were observed in this habitat type; as such, there was no vegetation community from the Manual of California Vegetation that was suitable to be applied. Non-native annual grassland is found in both open spaces, has no ranking, and is not considered to be a sensitive habitat type.

Developed areas are areas within the park extent that have been cleared of natural vegetation communities and sometimes consist of impermeable surfaces like concrete. Developed areas are fairly limited within the open space areas (approximately 2% of the Study Area) and are restricted to the outer edges of the open spaces that are adjacent to residences.

California bay woodland (*Umbellularia californica*, S3 G4) are known from the inner and outer Coast Ranges, Transverse Ranges, and Sierra Nevada Foothills from Del Norte County south to San Diego County. This vegetation community is typically located on terraces, canyon bottoms, north-facing slopes, and rock outcrops underlain by shallow to deep sand to loam substrates (Sawyer et al. 2009). Within the Study Area, this community type is found along streams in canyon bottoms and intergrades with arroyo willow thickets. Dominant species in the tree layer include California bay and coast live oak with California bay comprising greater than 30 percent of the relative cover in this stratum. In most locations, the tree canopy is extremely dense, therefore reducing the shrub and herbaceous layers within these communities.

Scattered individuals of shrubs include poison oak, and fuchsia flowered gooseberry. The herbaceous layer is relatively depauperate and dominated by shade tolerant forbs including California maidenhair (*Adiantum jordanii*), miner's lettuce, California bedstraw (*Galium californicum*), manroot, Pacific sanicle (*Sanicula crassicaulis*), and chickweed (*Stellaria media*). California bay is a noted alternate host for sudden oak death (SOD) caused by the water mold, *Phytophthora ramorum*.

Arroyo willow thickets (*Salix lasiolepis*, S4 G4) are common throughout the state of California and consist of a canopy dominated by arroyo willows. To qualify as a true arroyo willow thicket, there must be 50% relative cover in the shrub or tree canopy (Keeler-Wolf et al. 2003) or at least 25% absolute cover. Understory plants consist of typical scrub vegetation which varies throughout the community's geographic range. This community is typically found along stream banks and benches, slope seeps, and along drainages (CNPS 2020b). Within the Study Area, arroyo willow thickets are found along canyon bottoms, adjacent to streams. Coast live oak trees are also found within the tree stratum but are typically around 10-15% of the relative cover. Poison oak is found growing among the arroyo willows, with stinging nettle (*Urtica dioica*), bee plant, common snowberry, and soap plant occurring in the herbaceous layer.

California buckeye groves (*Aesculus californica*, S3 G3) are known from the southern Cascade Range, Coast Ranges, northern Transverse Range, and Sierra Nevada Foothills from Siskiyou County south to Ventura County. This vegetation community is typically located on shallow, moderate to well-drained soils in canyons and alluvial terraces (Sawyer et al. 2009). Within the Study Area, California buckeye groves can be found along canyon bottoms, adjacent to streams; this commonly intergrades with the California bay and arroyo willow thickets along the riparian corridor. California buckeye groves are limited, at 0.9% of the Study Area. Co-dominant species within the tree stratum include California buckeye, California bay, and coast live oak. The understory is fairly depauperate, with coyote brush and stinging nettle being the most observed species.

4.2 Special-Status Species

Since both Waterdog and San Juan Canyon contain similar habitats (e.g., coyote brush scrub, coast live oak woodland, arroyo willow thickets, and annual grasslands), the assessment of special-status species applies to both parks, unless otherwise noted.

A total of 94 special-status plant species and 59 special-status wildlife species were evaluated for potential to occur within the Study Area. Of these, 11 special-status plant species and 7 special-status wildlife species have moderate/high potential to occur or are present within the Study Area. Species were ruled out if the Study Area was not within the known/expected range for the species, if the Study Area does not contain suitable habitat/microhabitat necessary to support this species, or if the species is generally understood to be extirpated from the region. All plant and wildlife species observed during the March 2022 site visits are included as Attachment A. The full list of the special status-species considered for this project is listed in Attachment B. Each species that has moderate/high potential to occur on site, or are present, are discussed below.

4.2.1 Plants

Franciscan onion (*Allium peninsulare* var. *franciscanum*), CRPR 1B.2. **Present.** Franciscan onion is a perennial forb in the lily family (Liliaceae) that blooms from May to June. It typically occurs on dry hillsides underlain by clay substrate, often derived from serpentine, in cismontane woodland and valley and

foothill grassland habitat at elevations ranging from 165 to 975 feet (CDFW 2022, CNPS 2022). This species has a serpentine affinity rank of weak indicator (1.8) (Safford et al. 2005). Associated species include California bay, California buckeye, coast live oak, leather oak (*Q. durata*), and purple needlegrass (CDFW 2022). This species was documented within both Waterdog and San Juan Canyon open spaces in 2015, located within coast live oak woodland (CDFW 2022). This species was not observed during the March site assessments; however, the surveys did not take place during the blooming period for this species and was not intended to be a rare plant survey.

Bent-flowered fiddleneck (*Amsinckia lunaris*), CRPR 1B.2. **Moderate Potential.** Bent-flowered fiddleneck is an annual forb in the forget-me-not family (Boraginaceae) that blooms from March to June. It typically occurs in open areas within cismontane woodland, valley and foothill grassland, and coastal bluff scrub habitat often underlain by clay substrate at elevations ranging from 10 to 1,625 feet (CDFW 2022, CNPS 2022). Associated species include coast live oak, buck brush, poison oak, common yarrow, goldenback fern (*Pentagramma triangularis*), one-sided bluegrass (*Poa secunda*), woolly sunflower (*Eriophyllum lanatum*), and slender wild oat (*Avena barbata*) (CDFW 2022). Cismontane woodland and valley and foothill grassland habitats are present within the Study Area. The nearest documented CNDDDB occurrence is 1.5 southwest of San Juan Canyon open space, and 1.5 miles northwest of Waterdog, in 2018 (CDFW 2022). This occurrence was in native and non-native grassland on a south-facing slope; similar habitats are found within the Study Area.

Pink star-tulip (*Calochortus comosa*), CRPR 4.2. **Moderate Potential.** Coastal scrub and meadows and seep habitat are present within the Study Area, along with seasonally moist meadows and forested habitats. The nearest occurrences are 5 miles to the northwest, within the Crystal Springs reservoir recreation area.

San Francisco collinsia (*Collinsia multicolor*), CRPR 1B.2. **Present.** San Francisco collinsia is an annual herb that blooms from March to May. It typically occurs in closed-cone coniferous forest and coastal scrub at elevations ranging from 100 to 900 feet (CNPS 2022). Associated species include poison oak, coyote brush, California coffeeberry (*Frangula californica*), snowberry, California blackberry, western leatherwood, oso berry (*Oemleria cerasiformis*), baby blue eyes (*Nemophila menziesii*), and California buttercup (*Ranunculus californicus*, CDFW 2022). Coastal scrub habitat and moist, shady scrub or forest microhabitat is located within the Study Area boundary; there is one CNDDDB occurrence in San Juan Canyon and two CNDDDB occurrences in Waterdog Lake Open Space.

Western leatherwood (*Dirca occidentalis*), CRPR 1B.2. **Present.** Western leatherwood is a deciduous shrub in the mezereum family (Thymelaeaceae) that blooms from January to April, but is typically identifiable via vegetative structures into late summer and/or early fall. It typically occurs on brushy, mesic slopes in partial shade in broadleaf upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland habitat at elevations range from 165 to 1,285 feet (CDFW 2022, CNPS 2022, Baldwin et al. 2012). Associated species include coast live oak, California bay, poison oak, toyon, California buckeye, coyote brush, yerba buena (*Clinopodium douglasii*), sword fern (*Polystichum munitum*), Pacific sanicle, and Douglas iris (*Iris douglasiana*) (CDFW 2022). Western leatherwood has several CNDDDB occurrences within Waterdog and was observed during trail and habitat assessment surveys in March.

California bottle-brush grass (*Elymus californicus*), CRPR 4.3. **Moderate Potential.** California bottle-brush grass is a perennial graminoid in the grass family (Poaceae) that blooms from May to November. It typically occurs along stream banks or other mesic sites within broadleaf upland forest, cismontane woodland, North Coast coniferous forest, and riparian woodland habitat at elevations ranging from 45 to

1,530 feet (CNPS 2022). Associated species include Douglas fir (*Pseudotsuga menziesii*), coast redwood (*Sequoia sempervirens*), California bay, red alder (*Alnus rubra*), California hazelnut (*Corylus cornuta* var. *californica*), California coffeeberry, California blackberry, sword fern, hedge nettle (*Stachys ajugoides*), bracken fern (*Pteridium aquilinum*) and woodland brome (*Bromus laevipes*) (CNPS 2022, California Consortium of Herbaria 2022). California bottle-brush grass has a moderate potential to occur in the Study Area due the presence of broadleaved upland forest, cismontane woodland, and riparian forest habitats are located within the Study Area, and microhabitats of sandy humus soils are also present to support this species. The nearest documented CNPS occurrence is 2 miles to the northeast.

San Mateo woolly sunflower (*Eriophyllum latilobum*), FE, SE, CRPR 1B.1. **High Potential.** San Mateo woolly sunflower is a perennial herb that blooms from May to June. It typically occurs in cismontane woodland, coastal scrub, and lower montane coniferous forest habitats at elevations ranging from 150 to 1085 feet (CNPS 2022). Associated species include coast live oak, California buckeye, California bay, foothill needle grass (*Stipa lepida*), California sagebrush, and white globe lily (*Calochortus albus*) (CDFW 2022). Suitable habitat of cismontane woodland and coastal scrub habitats are located within the Study Area, microhabitats of roadcuts are present, and most of the associated species were also observed throughout the Study Area. The nearest CNDDDB occurrence is 1.5 miles to the northwest, along a road.

Harlequin lotus (*Hosackia gracilis*), CRPR 4.2. **Moderate Potential.** Harlequin lotus is a perennial forb in the pea family (Fabaceae) that blooms from March to July. It typically occurs in wetlands or ditches in broadleaf upland forest, coastal scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, meadow and seep, marsh and swamp, North Coast coniferous forest, and valley and foothill grassland habitat at elevations ranging from 0 to 2,275 feet (CNPS 2022). This species has a wetland indicator status of facultative wetland (FACW). Associated species include coyote brush, little quaking grass (*Briza minor*), California oat grass (*Danthonia californica*), blue-eyed grass (*Sisyrinchium bellum*), subterranean clover (*Trifolium subterraneanum*) (CCH2 2022). Suitable habitat of broadleaved upland forest, cismontane woodland, coastal scrub, marshes and swamps, and meadows and seeps and microhabitats of wetlands and roadsides are present. The nearest CNDDDB occurrence is approximately 2 miles west of the Study Area.

Bristly leptosiphon (*Leptosiphon acicularis*), CRPR 4.2. **Moderate Potential.** Bristly leptosiphon is an annual forb in the phlox family (Polemoniaceae) that blooms from April to July. It typically occurs in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland habitats at elevations ranging from 175 to 4,875 feet (CNPS 2022). Bristly leptosiphon has a moderate potential to occur within the Study Area due to the presence of associated species and vegetation types; however, this species typically occurs in natural open or herbaceous serpentine and/or volcanic areas. The nearest CNPS occurrence is 2.5 miles to the west.

Arcuate bush-mallow (*Malacothamnus arcuatus*), CRPR 1B.2. **Present.** Arcuate bush-mallow is a shrub that blooms from April to September. It typically occurs in chaparral and cismontane woodland habitats at elevations ranging from 50 to 1165 feet (CNPS 2022). Associated species include coast live oak, bigberry manzanita (*Arctostaphylos glauca*), chamise, western leather wood, California sagebrush, coyote brush, and buck brush (CDFW 2022). Chaparral and cismontane woodland habitat and gravelly alluvium microhabitats are present within the Study Area, in addition to a documented CNDDDB occurrence within Waterdog as of 2013. This species was not observed during the March 2022 trail assessment and habitat reconnaissance surveys, which was conducted before the bloom period.

Woodland woollythreads (*Monolopia gracilens*), CRPR 1B.2. **Present.** Woodland woollythreads is an annual herb that blooms from March to July. It typically occurs in broadleafed upland forest, chaparral, cismontane woodland, north coast coniferous forest, and valley and foothill grassland habitats at elevations ranging from 330 to 3935 feet (CNPS 2022). Associated species include yerba santa (*Eriodictyon* spp.), chamise, buck brush, poison oak, bigberry manzanita, and sticky monkey flower (CDFW 2022). Suitable habitat of broadleafed upland forest, chaparral, cismontane woodland, and valley and foothill grassland and microhabitat of grassy sites in openings is present to support this species. There is a CNDDDB occurrence within/adjacent to Waterdog; this record was documented in the 70s, and location is approximate, not exact.

Choris's popcornflower (*Plagiobothrys chorisianus* var. *chorisianus*), CRPR 1B.2. **Moderate Potential.** Choris's popcornflower is an annual herb that blooms from March to June. It typically occurs in chaparral, coastal prairie, coastal scrub at elevations ranging from 10 to 525 feet (CNPS 2022). Associated species include common yarrow, coyote brush, common toad rush (*Juncus bufonius*), brass buttons (*Cotula coronopifolia*), fringed willowherb (*Epilobium ciliatum*), California blackberry and Buck's horn plantain (*Plantago coronopus*) (CDFW 2022). Chaparral and coastal scrub habitats are located within the Study Area, and microhabitats of mesic sites (and low-lying depressions) are present to support this species. The nearest CNDDDB occurrence is approximately 2 miles to the southwest.

Chaparral ragwort (*Senecio aphanactis*), CRPR 2B.2. **Present.** Chaparral ragwort is an annual herb that blooms from January to April. It typically occurs in chaparral, cismontane woodland, coastal scrub at elevations ranging from 50 to 2625 feet (CNPS 2022). Associated species include California buckwheat (*Eriogonum fasciculatum*), nude buckwheat, stork's bill, redstem filaree, black sage (*Salvia mellifera*), California sagebrush, and soap root. Chaparral, cismontane woodland, and coastal scrub habitats are present within the Study Area, and there is a CNDDDB occurrence within or near Waterdog.

4.2.2 Wildlife

Moderate or higher potential to occur

Western (Pacific) pond turtle (*Actinemys marmorata*), CDFW Species of Special Concern. The western pond turtle is the only native freshwater turtle in California. This turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and Transverse Ranges. Western pond turtles inhabit perennial aquatic habitats, such as lakes, ponds, rivers, streams, and canals that provide submerged cover and suitable basking structures, such as rocks and logs (Zeiner et. al. 1990). Western pond turtles prefer to nest on unshaded upland slopes close to their aquatic habitat, and hatchlings require shallow water with relatively dense emergent and submergent vegetation for foraging for aquatic invertebrates (Jennings and Hayes 1994).

A small number of turtles were briefly observed swimming in Waterdog Lake, although it could not be determined whether the turtles were invasive red-eared sliders (*Trachemys scripta*) or pond turtles. Turtle habitat in general within the Study Area is limited to waterdog lake, as no other perennial water bodies of this size exist. Emergent vegetation is present on the side of the lake most distant from the existing dam, and downed timber and rocky shorelines could provide suitable basking sites. Breeding habitat at this location would mostly be limited to the slope against the existing levee, which appears highly trafficked by recreational users. Given the presence of suitable habitat and the observation of turtles in

waterdog lake, it is highly likely that native turtles such as western pond turtle could be present in this aquatic habitat and occasionally in adjacent uplands.

Olive-sided flycatcher (*Contopus cooperi*), CDFW Species of Special Concern. The olive-sided flycatcher is a summer resident in California, wintering in Latin America. It breeds in a variety of forested habitats, typically coniferous forests at higher elevations, but also in mixed forest and woodlands at lower elevations. Breeding habitat is often associated with forest openings and edges, both natural (e.g., meadows, canyons) and man-made (e.g., logged areas) (Altman and Sallabanks 2012). Nests are usually in conifers, and placed at variable height on the outer portions of branches. This species forages for insects, usually from prominent tree snags.

Although this species was not observed during site visits, mixed low-elevation forests are common within the Study Area and could support nesting by this species. This species may be more commonly observed foraging within the Study Area.

White tailed kite (*Elanus leucurus*), CDFW Fully Protected Species. The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates.

While this species is usually observed in closer proximity to San Francisco Bay, higher elevation areas characterized by small trees interspersed with grasses and low shrubs could provide nesting or foraging habitat for this species within the Study Area.

San Francisco (saltmarsh) common yellowthroat (*Geothlypis trichas sinuosa*), CDFW Species of Special Concern. This subspecies of the common yellowthroat is found in freshwater marshes, coastal swales, riparian thickets, brackish marshes, and saltwater marshes. Their breeding range extends from Tomales Bay in the north, Carquinez Strait to the east, and Santa Cruz County to the south. This species requires thick, continuous cover such as tall grasses, tule patches, or riparian vegetation down to the water surface for foraging and prefers willows for nesting (Shuford and Gardali 2008).

Although this species is more typically documented nesting in salt marshes around the San Francisco Bay Area, more isolated patches of riparian vegetation within the Study Area could potentially support nesting by this species. This type of vegetation exists around Waterdog Lake and along stream drainages adjacent to trails.

Hoary bat (*Lasiurus cinereus*), WBWG Medium. Hoary bats are highly associated with forested habitats in the western United States, particularly in the Pacific Northwest. They are a solitary species and roost primarily in foliage of both coniferous and deciduous trees, near the ends of branches, usually at the edge of a clearing. Roosts are typically 10 to 30 feet above the ground. This species tolerates a wide range of temperatures and has been captured at air temperatures between 0 and 22 degrees Celsius. They usually emerge late in the evening to forage, typically from just over one hour after sunset to after midnight.

Many of the CNDDDB occurrences in the immediate vicinity that document this species are older “specimen samples” from the early 1900’s. However, this species is known to occur in forested habitats within the San Francisco Bay Area and immediate vicinity. Forested habitats within the Study Area, particularly in the vicinity of riparian areas that could provide sources of forage, should thus be considered to have moderate potential to support Hoary bat and other non-status bats with baseline protections.

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), CDFW Species of Special Concern. This subspecies of the dusky-footed woodrat occurs in the Coast Ranges between San Francisco Bay and the Salinas River (Matocq 2004). Occupied habitats are variable and include forest, woodland, riparian areas, and chaparral. Woodrats feed on woody plants, but will also consume fungi, grasses, flowers, and acorns. Foraging occurs on the ground and in bushes and trees. This species constructs robust stick houses/nests in areas with moderate cover and a well-developed understory containing woody debris. Breeding takes place from December to September. Individuals are active year-round and generally nocturnal.

Woodrat houses were observed widely throughout the Study Area, both along riparian strips and in more upland thickets of various types of shrubs. Densest concentrations of houses, however, were observed along creek drainages. While no woodrat individuals were observed, this species should be assumed to have potential to nest in any portion of the Study Area with a relatively dense understory.

American badger (*Taxidea taxus*), CDFW Species of Special Concern. The American badger is a large, semi-fossorial member of the Mustelidae (i.e. weasel family). It is found uncommonly within the region in drier open stages of most scrub, forest, and herbaceous habitats where friable soils and prey populations are present. Badgers are typically solitary and nocturnal, digging burrows to provide refuge during daylight hours. Burrow entrances are usually elliptical (rather than round), and each burrow generally has only one entrance. Young are born in the spring and independent by the end of summer. Badgers are carnivores, preying on a variety of fossorial mammals (especially ground squirrels) and occasionally other vertebrates and their eggs. Home ranges for this species tend to be large, depending on the habitat available; population density averages one badger per square mile in prime open country (Long 1973).

This species is likely to avoid highly trafficked areas where trails have been relatively compacted, or densely forested or vegetated habitats that dominate the Study Area. However, friable soils and more open habitats exist in higher elevation locations within the Study Area that could support this species. It thus has moderate potential to occur.

Unlikely to occur

California red-legged frog (*Rana draytonii*). Federal Threatened, CDFW Species of Special Concern. The California red-legged frog (CRLF) is the only native “pond frog” found throughout much of California. Suitable aquatic breeding habitat is characterized by deep and still or slow-moving water associated with emergent marsh and/or riparian vegetation, typically with at least 20 weeks of continuous inundation (USFWS 2010). Suitable features include ponds (perennial and non-), streams/creeks, seasonal wetlands, springs, seeps, man-made features (e.g. stock ponds, roadside ditches), marshes, dune ponds, and lagoons. Dependent upon local conditions, CRLF may complete its entire life cycle in a particular habitat patch (e.g., a perennial pond suitable for all life stages), or utilize multiple habitat types. In aquatic features that dry down seasonally, CRLFs often undergo aestivation (a period of inactivity) during the dry months, retreating to small mammal burrows or other substrates that provide suitable refugia (Thomson et al. 2016). Adults and sub-adults (newly metamorphosed individuals) may disperse from breeding

habitats to nearby riparian and/or aestivation areas in the summer. Conversely, during the rainy season CRLFs may migrate from aestivation sites to waters suitable for breeding. During such dispersals, frogs can travel over one mile over a variety of topographic and habitat types (Bulger et al. 2003). Upland dispersal habitats are variable and typically include riparian corridors, grasslands, and oak savannas.

CRLF has been documented to occur in the vicinity of the Study Area, mainly within Crystal Springs reservoir and wetlands immediate adjacent (CDFW 2022). However, no occurrences have been documented within the Study Area or in locations immediately adjacent. Interstate 280 also constitutes a near complete dispersal barrier for this species, except in locations where hydrologic connectivity allows passage of this species from known occupied habitats and source populations (e.g., San Mateo Creek). The Study Area does not contain any potential corridors that would allow the passage of this species from known occupied habitats to habitats within the Study Area. Potentially suitable breeding habitats for this species within the Study Area are also extremely limited, given that most stream features are intermittent or ephemeral and do not possess appropriate vegetation for the attachment of egg sacks. Waterdog Lake has potentially suitable habitat for this species given that it is a perennial water body, but to WRA's knowledge the species has not been identified within this water body and dispersal to this isolated location is unlikely. Considering barriers to dispersal and the relative lack of suitable habitat, CRLF is unlikely to occur within the Study Area.

4.3 Habitat Quality

Except for developed portions of the site, eucalyptus groves, and the non-native annual grassland, the plant species observed within the Study Area are mostly native. This is also demonstrated by the biological communities listed in the previous section; over 90% of the Study Area consist of native biological communities. Invasive species were observed but was generally limited to patches of less than 50 square feet and represent a small portion of the overall Study Area. Unsurprisingly, the primary cause of vegetation impacts is from unauthorized trails and the inadvertent expanded width of trails (resulting from braided trails).

As such, the overall habitat quality of the Study Area is high quality to moderate quality, with the areas adjacent to trails and residential development generally being moderate quality. Areas adjacent to development/residential tend to be disturbed, via fire breaks that are then recolonized by non-native species annual species (non-native annual grassland). Some areas adjacent to homes were observed to have large patches of ice plant, and vegetation clearing where the tops of coast live oak and other shrubs were removed. Areas with limited anthropogenic influence (set back from residential uses and major trails), have high quality habitat.

4.4 Trail Environmental Conditions

The number of instances where erosion was noticed on both existing mapped and existing unmapped trails is shown in Table 5. The instances of erosion are categorized by the qualitative level, low, medium, high. In addition, approximately 50 stream crossings were identified along existing trails, and these crossings varied in terms of crossing mechanism. This ranges from a free-span wooden footbridge to a plank placed across the stream, to stepping stones.

TABLE 5. TRAIL EROSION INSTANCES.

Location	Low Erosion	Medium Erosion	High Erosion	Total Erosion Instances
Waterdog				
Existing Mapped Trails	127 (56%)	77 (34%)	25 (11%)	229
Existing Unmapped Trails	59 (83%)	7 (10%)	6 (8%)	71
San Juan Canyon				
Existing Mapped Trails	5 (38%)	7 (54%)	1 (8%)	13
Existing Unmapped Trails	11 (85%)	2 (15%)	0 (0%)	13

4.5 Wildfire Hazard Analysis

4.5.1 *Wildfire Hazards*

Based on the San Mateo County Hazard Mitigation Plan, Calfire has rated Belmont’s two open space areas as having very high wildfire hazards for WDL, and high hazards for SJC. These hazard ratings are based on multiple factors including:

- Vegetation type and density
- Topography (fires that start on slopes tend to travel uphill)
- Weather (including wind speed and direction, and relative humidity)
- Potential Fire Behavior (e.g., flame lengths, ability to generate embers)
- Potential to damage human life and structures

The two open space areas include steeply sloped, vegetated areas adjacent to residential areas and thus have been assigned relatively high wildfire hazard ratings. Figures 2 and 3 depict vegetation types across the city’s two open space areas. The majority of vegetation in WDL and SJC is coastal live oak.

According to the wildfire hazard reduction and resource management plan prepared by East Bay Regional Park District, the following fuel reduction methods are typically used to reduce wildfire fuels on Bay Area open space lands:

- Hand Labor;
- Mechanical Treatment;
- Chemical Treatment;
- Prescribed Burning and;
- Grazing.

Due to the configuration of, access to, and slopes within the WDL open space area, the only practical treatments for wildfire fuel reduction are hand labor and grazing. In contrast, SJC has better access for vehicles and large types of equipment, and therefore could be appropriate for using mechanical treatments to reduce wildfire fuels. Due to the proximity of Belmont’s residential areas to adjacent open space areas, neither chemical treatment or prescribed burning are recommended as fuel reduction treatments.

4.5.2 Fuel Hazards by Vegetation Types

Both ignition potential and fuel hazards are rated depending on the vegetation type as shown in Table 6.

TABLE 6. FIRE HAZARD RATING FOR FUEL TYPES VEGETATION TYPE.

Vegetation Type	Hazard Rating	Ignition Potential ¹
Grasslands and Herbaceous Vegetation		
Coastal Prairie	Moderate	2
Serpentine Bunchgrass Grasslands	Low	2
California Annual Grasslands	Moderate	1
Ruderal Vegetation	Moderate	3
Scrub Vegetation		
Maritime Chaparral (Manzanita-Chinquapin)	Extreme	6
North Coastal Scrub-Xeric	Extreme	4
North Coastal Scrub-Mesic	High	8
Coyote Brush Scrub	High	4
Non-native Scrub	High	6
Woodlands and Forest Plantations		
Mature Eucalyptus Forest	High	1
Young Eucalyptus Forest	High	2
Mature Monterey Pine Forest	Moderate to High	2

Vegetation Type	Hazard Rating	Ignition Potential¹
Young Monterey Pine Forest	High	2
Oak-Bay Woodland	Low	6-8
Redwood Forest	Low	8
Riparian Woodland	Low	8

Source: Wildfire Hazard Reduction and Resource Management Plan, EBRPD, 2010

1-ignition potential was ranked 1 to 10, where the highest potential is represented by a "1" and the lowest potential is ranked by a "10."

Wildfires tend to start in vegetation that ignites easily such as annual grasslands, or coastal scrub. Once ignited, these vegetation types have a significant influence on a wildfire's rate of spread. Woodland areas tend to ignite much more slowly than grassland and shrub vegetation types, but once ignited can contribute to greater heat per unit area, and higher flame lengths. Under extreme weather conditions all vegetation types have the ability to contribute to a wildfire's rate of spread, heat per unit area, and flame length.

The majority (approximately 147 acres) of vegetation in the WDL open space area is coastal live oak (Figure 3), which has a low hazard rating and ignition potential, since it is associated with oak-Bay woodland. This situation also applies to the SJC open space area, with the majority of vegetation there mapped as coastal live oak. However, the area west of Hastings Drive is classified as chamise which is associated with the North Coastal Scrub-Xeric vegetation type, and has an extreme fuel hazard rating. Based on aerial photograph review, the open space areas that abut residential areas have little to no vegetation. The city engages in wildfire fuel reduction activities in the WDL open space area, as depicted in Figures 4 and 5. There were three areas that were treated in 2021, and another group of areas treated in 2019 and 2021, also shown in Figures 4 and 5.

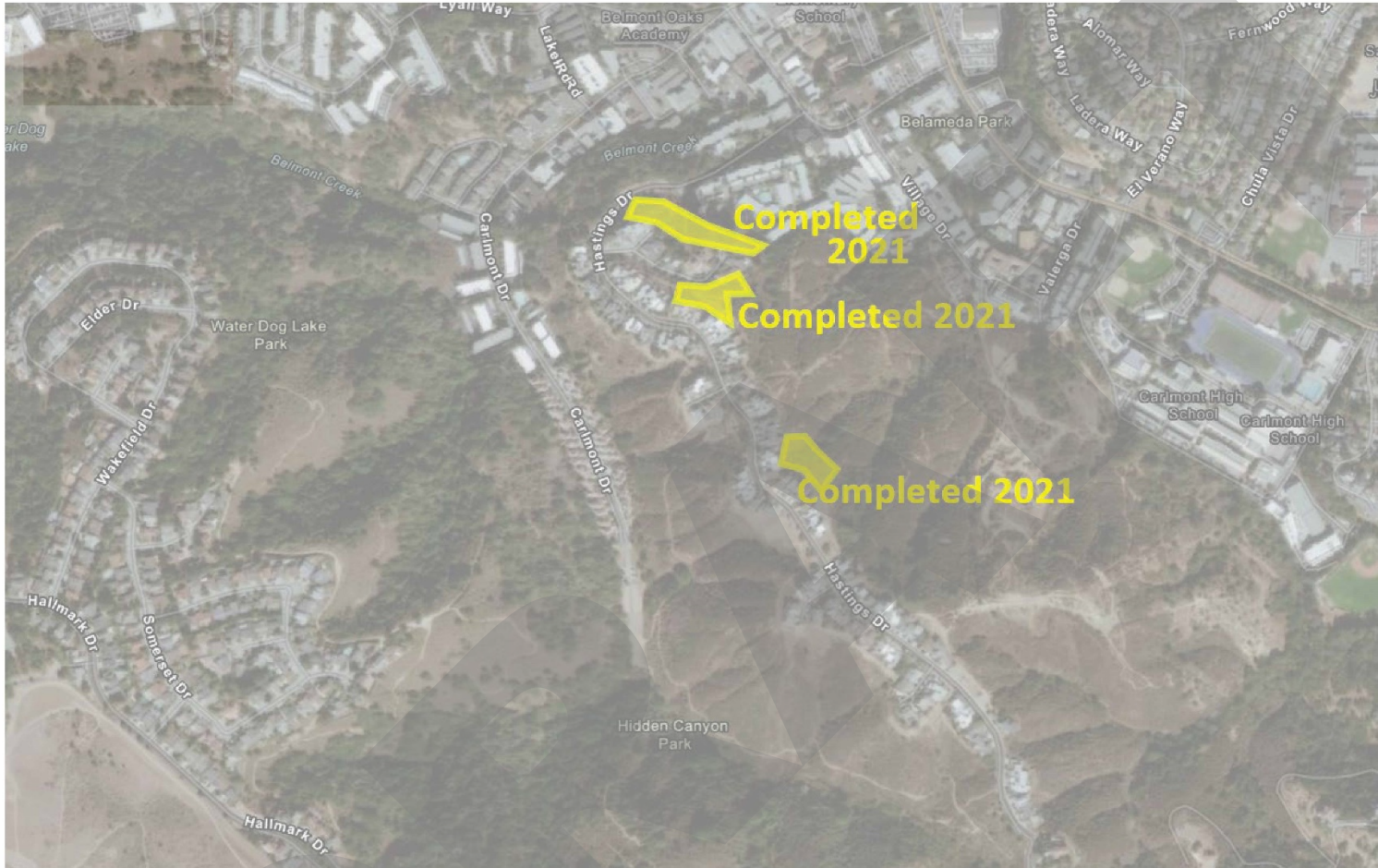


Figure 4. Wildfire Fuel Reduction Areas Near Hastings Drive

Waterdog Lake Open Space
Belmont, CA



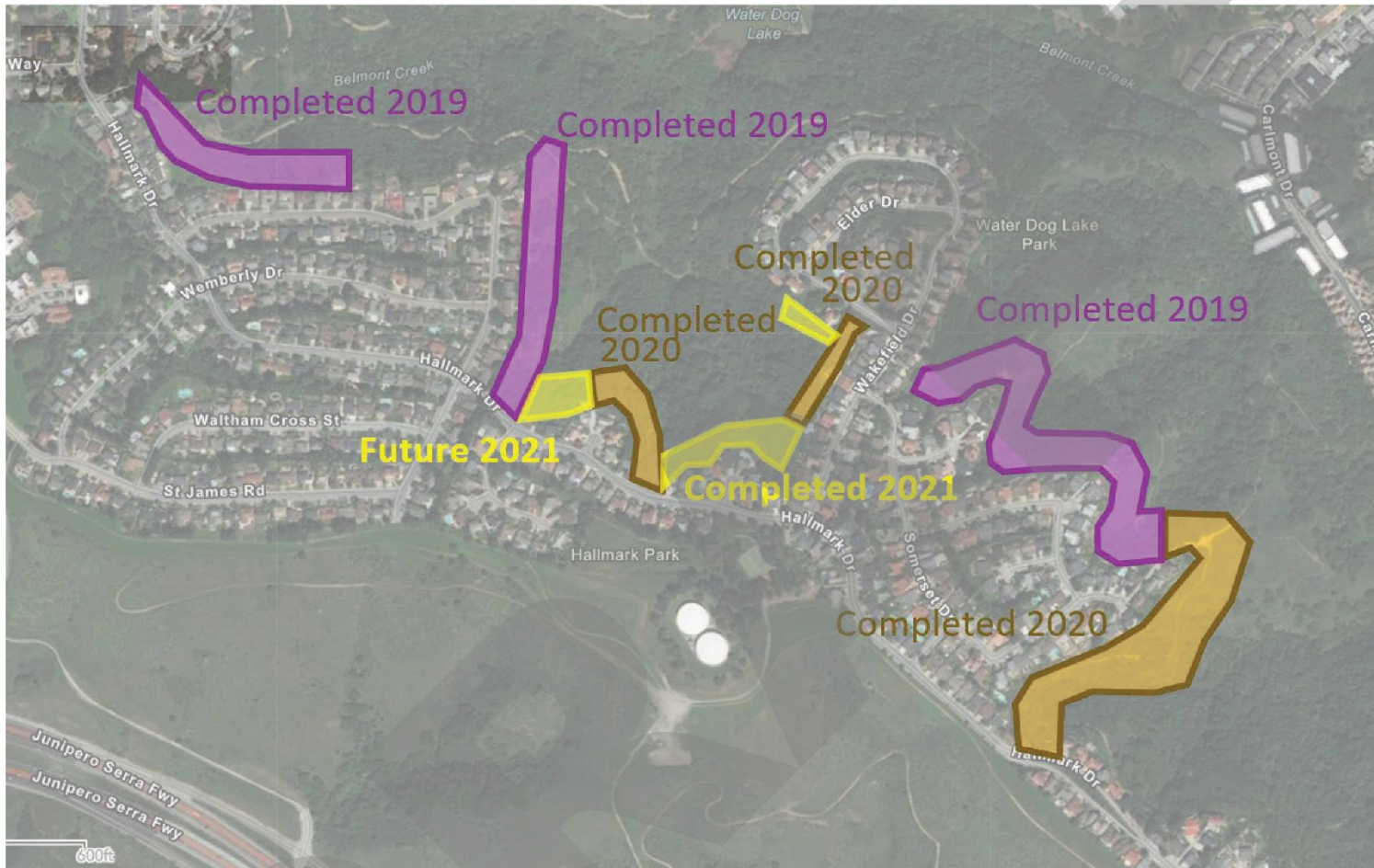


Figure 5. Wildfire Fuel Reduction Areas Near Hallmark Drive

Waterdog Lake Open Space
Belmont, CA



5.0 Recommendations

5.1 Habitat and Species

Although the habitat within the open space areas appears to be in good health, there are still management considerations and actions that should be taken to ensure this valuable community resource continues to thrive, for both residents and wildlife alike. The following recommendations are a result of observations from the reconnaissance site visits and community feedback.

Sudden Oak Death.

Sudden oak death (SOD, or *Phytophthora ramorum*) is a pathogen that is a common management concern for Belmont's Open Spaces. Although SOD has been detected in San Mateo County (and much of the west coast), there are no current or active cases reported by statewide, citizen science SOD mapping efforts through CalInvasives or University of California Berkeley's SODmap (Calflora 2022 and UC Berkeley 2022). There are no reported cases in San Juan Canyon open space, and there are three confirmed positive cases documented in Waterdog. These three cases are located along Lake Road Trail on a bay tree in 2014, one along Berry trail on a coast live oak tree in 2008, and another off-trail (southwest of Berry Trail) on a bay tree in 2013. However, these cases are inactive according to follow-up visits to the same infected trees as part of the CalInvasives mapping program in 2016, 2016, and 2014, respectively (Calflora 2022).

Although there are no known active cases according to these databases, it is still possible that SOD is present and dormant within Belmont's Open Spaces. Therefore, recommendations for SOD management include adding educational signage and decontamination equipment at all trailheads for these open spaces. Educational signage may include but is not limited to the following: photos that show what symptoms of SOD look like, how to report cases to the citizen science programs mentioned previously (if observed), how to reduce the risk of spread by avoiding trails 24-48 hours after a significant precipitation event and encouraging trail users to remove tracked mud found on the bottom of shoes and bike tires. Decontamination stations located at access points may include boot brushes and 70% isopropyl alcohol spray bottles that are mounted to the educational signage.

Invasive Species.

Several observations of invasive species were detected within Waterdog and San Juan Canyon.³ This includes ice plant (*Carpobrotus edulis*, Cal-IPC: High), pampas grass (*Cortaderia selloana*, Cal-IPC: High), French broom (*Genista monspessulana*, Cal-IPC: High), and English ivy (*Hedera helix*, Cal-IPC: High). Trail working groups like Friends of the Waterdog and Waterdog Trailkeepers indicated current efforts to control these species, and these efforts were observed during the site assessment. For example, only the

³ *Invasive species are typically defined as California Invasive Plant Council (Cal-IPC) species rated Moderate or High. Species ranked as "high" is defined as "... species [that] have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically." Moderate is defined as "... species [that] have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread."*

vegetative (non-flowering) portions of pampas grass were observed, as someone had removed the flowering heads to prevent the species from re-seeding.

Recommendations for managing invasive species found within the Study Area include early detection and response. Early detection and response is a best management practice for invasive species control that focuses monitoring for new or spreading occurrences of undesirable species, then applies the most effective management action for the control of the species. For example, if an invasive species is primarily spread via seed, then attempts would be made to remove the flowering portion of the plant before the seeds have a chance to develop, mature, and spread. Another example would be species that spread via rhizome/stolons; the entire plant would be manually removed to prevent further spread.

Public community meetings for the open space planning efforts indicate that “Friends” groups already have this type of program in place; therefore, continued collaboration between the City and community groups would be helpful for invasive species control efforts. Another advantage of the SOD decontamination stations (brushes and rubbing alcohol) also reduces the inadvertent introduction of weedy species by trail users.

Additional Surveys.

Due to the large Study Area and number of special-status species with potential to occur, protocol-level surveys for these species are recommended once the City has a clearly established project, with a project description (which includes the limits of disturbance). Having clearly defined project footprints, or smaller study areas, for protocol-level surveys will allow the City to use resource management budget wisely and comply with applicable federal, state, and local policies. This is because the number of species with potential to occur may be tailored based on the habitat present within the project footprint and will generally result in reduced species that need protocol-level surveys to determine presence/absence.

Generally, appropriately timed work can avoid or minimize impacts to special-status species and sensitive natural resources. For example, vegetation management activities should take place during September through January to avoid impacts to nesting birds. Nesting bird season is generally accepted as February 1 through August 31 for the City of Belmont. Another example includes conducting ground disturbance activities during the dry season (June through October), particularly if the project footprint will be located near waterways.

Habitat Enhancement and Restoration Opportunities.

While most of the habitats found within the open spaces were in good condition, there are still opportunities for habitat enhancement and restoration, particularly within the non-native annual grassland and creek crossings spots within riparian corridors. As stated in the habitat description, the non-native annual grassland was observed to have mostly non-native species, with some native grasses and forbs. The presence of small patches of purple needlegrass (perennial bunchgrass) found in the understory of shrubs and within disturbed areas is promising, and this could be expanded by additional seeding, or planting more plugs of other perennial native bunchgrasses to compete with the non-native annuals. This should be followed up by monitoring these re-seeded or revegetated areas, with some supplemental water to help perennial bunchgrasses get established.

Generally, stream crossings should be minimized to the greatest extent feasible. Paths may be re-routed or consolidated to reduce the number of stream crossings. Retired crossings should be decommissioned

by placing signs indicating trail closure and habitat restoration, with physical barriers placed, like logs, while vegetation is filling back in. Vegetation will generally grow back in abandoned trails, but intervention may be needed if soil compaction or vegetation impacts are extensive. Revegetation methods like willow staking are common in riparian restoration efforts and would be appropriate for most creek crossing decommissioning locations within the open space. Where crossings are inevitable, a hydrologically appropriate crossing (that allows passage during high water flow events) should be planned and placed. This helps the waterway take its natural course with minimal anthropogenic influence, like increased erosion due to mechanical erosion from trail users. Collaborations between the City and with citizen science groups or “Friends” groups could help ensure the success of these efforts.

5.2 Wildfire Reduction Hazard

1. If the city desires a more aggressive fuel treatment plan, develop and implement an annual fuel treatment plan.
2. Maintain the currently treated areas as depicted in Figures 4 and 5.
3. Evaluate wildfire fuel conditions in San Juan Canyon for possible treatment. There are multiple areas with coyote brush scrub that could be treated to reduce wildfire hazards.
4. Continue to maintain the low vegetation area west of Hastings Drive, and consider expanding this area downhill, subject to avoiding nesting bird season, and any other types of environmental requirements.

5.3 Environmental Strategy for OSMP Implementation

The OSMP Base Plan and two management alternatives have multiple implementation actions that will involve various forms of ground disturbing activities. Actions fall into three categories: environmental sustainability, balanced recreational uses and trail management, and natural hazard mitigation (focused solely on wildfire hazards). Potential actions to support environmental stability could involve habitat restoration of native bunchgrass or installing drainage features or a trail bridge to reduce trail erosion. Actions associated with balanced recreational uses and trail management might include designating some trails one way, designating a parallel segment of trail as one-way or single use, or constructing a new separate trail adjacent to an existing trail to separate pedestrian and bicycle trail use. Actions intended to reduce naturals could involve cover reduction of highly flammable vegetation in areas where feasible and safe to do so via manual labor.

As noted in the table 7 below, to comply with the California Environmental Quality Act (CEQA), most, if not all, of these types of actions could be achieved by preparing a Categorical Exemption (CE), which is generally the most expeditious means of complying with CEQA. CEQA Guidelines Sections 15301-15323 describe a variety of categories that might apply to OSMP implementation actions. In some cases, the applicable CE class may not apply if mitigation measures are required to protect biological resources, or any other type of resource.

TABLE 7. CEQA COMPLIANCE FOR OSMP IMPLEMENTATION ACTIONS

OSMP Implementation Actions	Applicable Categorical Exemption Categories	Activities and limitations
Installing a trail bridge	Section 15303: Class 3, New Construction or Conversion of Small Structures.	A new bridge installation would need to avoid placing any bridge feature below the ordinary highwater mark (OHWM).
Native bunchgrass restoration	Section 15333: Class 33, Small Habitat Restoration projects	Projects not to exceed five acres in size to assure the maintenance, restoration, enhancement, or protection of habitat for fish, plants, or wildlife.
Installing trail drainage features	Section 15304: Class 4, Minor Alterations to the Land	Grading on land with a slope of less than 10 percent.
Designating with new signage a trail as one-way	Section 15311: Class 11, Accessory Structures	Consists of construction and placement of minor structures including but not limited to on premise signs.
Designating with new signage a parallel trail segment as one-way or single use	Section 15311: Class 11, Accessory Structures	Consists of construction and placement of minor structures including, but not limited to, signs on premises.
New trail construction	Section 15303: Class 3, New Construction or Conversion of Small Structures.	Applicability would depend on avoiding trail construction below the OHWM, avoiding construction activity during nesting bird season, and avoiding any impacts to sensitive habitats or species.
Vegetation removal or pruning	Section 15304: Class 4, Minor Alterations to the Land	Fuel management activities within 300 feet of structures to reduce volume of flammable material

To qualify for a CE and comply with CEQA, an implementation action cannot:

- Occur in a location where the implementation action could impact an environmental resource of hazardous or critical concern in an area mapped by a local, state, or federal agency;
- Create cumulative impacts spatially or over time;
- Have a significant impact due to extraordinary circumstances;
- Adversely impact a state designated scenic highway;
- Be located on a site designated as hazardous per Government Code 65962.5; or
- Adversely impact a historic resource.

Finally, it should be noted that there are several types of potential implementation actions associated with the OSMP that mostly likely could not covered by completing a CE. These could include:

- Armoring a streambank;
- Constructing a new trail if it crosses a creek; and
- Tree removal during bird nesting season.

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