



Memorandum

Project# # 3603-02

6 January 2015

To: Stephanie B. Davis, AICP, Senior Project Associate, Circlepoint

From: Patrick Boursier, Principal-in-Charge, H. T. Harvey & Associates
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Project: San Mateo Animal Care Facility, San Mateo County

Subject: Biological Resources Technical Memorandum

This memorandum was prepared by H. T. Harvey & Associates for the purpose of evaluating the potential biological constraints to the redevelopment of the San Mateo County Animal Care Shelter (Project) in San Mateo, California. Biological constraints to proposed development typically take the form of sensitive and/or regulated habitats such as wetlands; special-status plant, fish, and wildlife species (e.g., federally or state threatened or endangered species); ordinance-sized trees; or particularly large, important, or exemplary occurrences of native plant or animal species or vegetation communities. We conducted an initial evaluation of potential significant biological issues that might impose major constraints on the proposed Project. This evaluation consisted of reviews of databases on the locations of records of special-status species, a reconnaissance survey of the Project site, local knowledge of wildlife and plants in the area, and literature searches. In addition, we present an overview of some of the general issues that might impose lesser constraints on the Project for informational purposes.

Project Description

The Project site is located at the Peninsula Humane Society and Society for the Prevention of Cruelty to Animals (SPCA) Intake at 12 Airport Boulevard, San Mateo, California. The site is situated between Highway 101 and the San Francisco Bay, and is surrounded by recreational land. The Bay Trail runs along its northern border, and Coyote Point Recreation Area is to the east. Industrial properties are located to the west of the site across Airport Boulevard. Proposed Project activities consist of the demolition of all existing structures and construction of the new Humane Society and SPCA buildings, which would include equine facilities.

Methods

To identify potential biological constraints that may need to be addressed during Project planning, California Environmental Quality Act (CEQA) review, permitting, and implementation, H. T. Harvey & Associates ecologists conducted an extensive review of background information concerning biological resources on the Project site, including aerial photos (Google Inc. 2013), U.S. Geological Survey (USGS) topographic maps, and U.S. Fish and Wildlife Service National Wetland Inventory maps (NWI 2014). In addition, California Native Plant Society's (CNPS's) Rare Plant Inventory Tool (CNPS 2014) and the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB 2014) were queried for special-status plants, fish, and wildlife species that occur in the *San Mateo* USGS 7.5 minute quadrangle or in at least one quadrangle surrounding the Project site, such as *San Francisco South*, *Hunters Point*, *San Leandro*, *Half Moon Bay*, *Redwood Point*, *Palo Alto*, *Woodside*, and *Montara Mountain*.

A reconnaissance-level field survey of biological resources and constraints present within the Project footprint and on adjacent lands was conducted by H. T. Harvey & Associates wildlife ecologist Matthew Timmer, M.S., and plant biologist Maya Goklany, M.S. on 9 December 2014. Specifically, the survey was conducted to assess the existing biotic habitats at the Project site, to (1) determine the potential for special-status plant, fish, or wildlife species to occur on-site; (2) identify and map wetland, aquatic, riparian habitats that are likely to fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or the CDFW; and to (3) determine if the existing conditions of the Project site could pose any additional constraints on the Project, such as the presence of large trees or areas within close proximity to the San Francisco Bay that fall under the jurisdiction of the Bay Conservation and Development Commission (BCDC).

Although a formal wetland delineation was not conducted, the reconnaissance survey examined the vegetation, soils, and hydrology using the "Routine Determination Method" outlined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). This method utilizes a three-parameter approach to identifying wetlands is based upon the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. The wetland indicator status of each species was obtained from the Arid West 2014 Regional Wetland Plant List (Lichvar et al. 2014), and are defined in Table 1. Exploratory pits were dug in the transitional zones between wetland and upland habitats to examine the soil profile for hydric soil indicators, diagnostic features that provide evidence of the development of soil under sufficiently wet conditions (NRCS 2010). Wetland hydrology indicators include visual observation of surface water, high water table, or a saturated soil profile.

Table 1. Wetland Indicator Status Categories for Vascular Plants

Indicator Category	Symbol	Frequency of Occurrence
Obligate	OBL	greater than 99%
Facultative Wetland	FACW	67 - 99%
Facultative	FAC	34 - 66%
Facultative Upland	FACU	1 - 33%
Upland	UPL	less than 1%

* Based upon information contained in *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987).

Results

Table 2 summarizes the potential biological constraints to the Project related to sensitive or regulated habitats and ordinance-size trees. For each existing habitat on the Project site, associated sensitive or regulated habitats are listed in Table 2, along with the potential impacts to these resources from the proposed scope of work. Additionally, Table 2 outlines the agencies that regulate each resource and the permitting requirements of the Project.

Existing Habitats

The Project site supports seven habitat types: wetland, aquatic, stormwater ditch, willow forest, ruderal grassland, ornamental woodland/lawn, and urban-suburban.

Wetlands

Wetland habitats include coastal brackish marsh and coastal freshwater marsh. The westernmost feature, W1, is a coastal brackish marsh (Figure 1; Photo 1) that has been mapped by the NWI as a palustrine, emergent, persistent, dike/impounded wetland that is seasonally flooded (NWI 2014). The lowest-lying portion of this feature (approximately 60 percent of the entire W1 area shown in Figure 1) was inundated during the reconnaissance survey and was dominated by pickleweed (*Salicornia* sp.), an obligate (OBL) and salt tolerant plant species. The outer edges and slightly elevated portions of W1 were dominated by facultative (FAC) plant species such willow dock (*Rumex* sp.) and saltgrass (*Distichlis spicata*); and an unknown grass that lacked the floral parts necessary for its identification to genus or species at the time of the survey.

Table 2. Existing Habitats, Sensitive/Regulated Biological Resources, Potential Impacts, and Regulatory Agencies/Permitting Needs

Existing Habitat	Sensitive/Regulated Biological Resources	Potential Impacts	Regulatory Agencies/Permitting Needs
Wetland	Coastal brackish marsh wetland (W1 and W3, Figure 1)	Grade/fill for new facilities	USACE/404 Nationwide Permit for W1-W3
	Coastal freshwater marsh (W2, Figure 1)	Dewatering Conversion to horse pasture	RWQCB/401 Water Quality Certification for W1-W3 CDFW/Lake and Streambed Alteration Agreement (LSAA) for W2 BCDC/Permit for development of areas within the 100 foot (ft) shoreline band
Aquatic (Other Waters)	Stream (OW1, Figure 1)	Grade/fill for new facilities	USACE/404 Nationwide Permit for OW1 and C1
	Culvert (C1, Figure 1)	Dewatering Conversion to horse pasture	RWQCB/401 Water Quality Certification for OW1 and C1 CDFW/LSAA for OW1 and C1 BCDC/Permit for areas within the 100 ft shoreline band
Stormwater Ditch	None	Grade/fill for new facilities Conversion to horse pasture	BCDC/Permit for areas within the 100 ft shoreline band
Willow Forest	Ordinance-sized trees	Grade/fill for new facilities Conversion to horse pasture	City of San Mateo-Parks and Recreation Department/Tree Removal or Pruning Permit BCDC/Permit for areas within the 100 ft shoreline band

Existing Habitat	Sensitive/Regulated Biological Resources	Potential Impacts	Regulatory Agencies/Permitting Needs
Ruderal Grassland	None	Grade/fill for new facilities Conversion to horse pasture	BCDC/Permit for areas within the 100 ft shoreline band
Ornamental woodland/lawn	None	Grade/fill for new facilities Conversion to horse pasture	BCDC/Permit for areas within the 100 ft shoreline band
Urban-Suburban	None	Demolish existing structures Grade/fill for new facilities Conversion to horse pasture	BCDC/Permit for areas within the 100 ft shoreline band

N:\Projects\36003\3603-01\02\Reports\Fig 1 Potential Jurisdictional Areas on the Project Site.mxd



A stormwater channel (W2) is present on the Project site, a portion of which has been mapped by the NWI as a palustrine, emergent, persistent, dike/impounded wetland that is seasonally flooded (NWI 2014). The majority of the channel bed and banks support coastal freshwater marsh dominated by giant reed (*Arundo donax*) (W2, Figure 1; Photo 2). Giant reed is a facultative-wetland (FACW) plant species that is listed by the California Invasive Plant Council as having a high ecological impact; a negative effect on physical processes, native plant and animal communities, and the overall structure of vegetative communities (Cal-IPC 2014). Sections of the channel banks were lined with concrete and cobble-sized rip-rap, and at the time of the reconnaissance survey, surface water at a depth of at least one foot covered the channel bed.

The third wetland feature, W3, is a coastal brackish marsh (Figure 1; Photo 3), and has not been mapped by the NWI (2014). This feature is located at the western end of a narrow stormwater ditch; it is co-dominated by pickleweed and tall flatsedge (*Cyperus eragrostis*, FACW), the latter of which had senesced despite its perennial growth habit. At the time of the survey, surface water was present in W3 as a result of the recent, heavy rains at the Project site; however, the San Francisco Bay region has experienced drought conditions for the past several years (USACE 2014) which has likely caused dieback of much of the perennial hydrophyte community at W3. Surface water at the bottom of the ditch prevented digging exploratory soil pits in this area, and a formal wetland delineation would be necessary to confirm that this section of the stormwater ditch is saturated for a sufficient duration of time to be considered a wetland and would also allow for the determination of a hydrologic connection (e.g. interception with groundwater) between W3 and nearby wetland or aquatic features. However, our current assumption is this would be considered a regulated wetland after formal delineation.

Aquatic

Aquatic habitat includes a small portion of perennial stream and a culvert within the stormwater channel on the Project site (OW1 and C1, Figure 1). The NWI has mapped the remainder of the stormwater channel as a riverine, intermittent, excavated streambed that is temporarily flooded (NWI 2014). Just outside the southern Project site boundary, stormwater emanates from a culvert that runs beneath Airport Boulevard. Water then directly enters the San Francisco Bay via a pump station with three outflow pipes that spill onto a concrete apron above the mean high water and high tide line (C1, Figure 1; Photo 4). The southernmost section of the channel is lined with concrete and devoid of vegetation, and was considered aquatic habitat (OW1, Figure 1; Photo 5). Since several feet of surface water were present along the entire length of the channel at the time of the survey and historic aerial images from the dry season months show that the aquatic habitat remains inundated year-round (Google Inc. 2013), the aquatic habitat in OW1 is likely a perennial stream.

Stormwater Ditch

An excavated stormwater ditch runs along the northern border of the Project site adjacent to the Bay Trail; at one end the ditch supports the potential wetland W3, and the ditch runs through small patches of willow riparian forest. For the majority of its length, the ditch supports upland or slightly mesic plant species, such as buckhorn plantain (*Plantago coronopus*, FAC), cut leaf geranium (*Geranium dissectum*, UPL), and filaree (*Erodium* sp., UPL). A stormwater drain is present at the eastern end of the ditch, and the sections of the narrow channel (approximately 1 to 3 feet wide) were inundated with several inches of water during the reconnaissance survey

from the recent, heavy rains (Photo 6). Because this ditch is well maintained and constructed in uplands, only the portion currently supporting wetland vegetation (W3) is likely to be considered a jurisdictional waters feature.

Willow Forest

Small patches of willow forest are present along the northern border of the Project site adjacent to the Bay Trail. This habitat is comprised mature willow trees and shrubs (*Salix* sp.) (Photo 7). Much of the understory lacks vegetation and is cluttered with woody debris, although English ivy (*Hedera helix*) is common in some areas, another species considered to be highly invasive by the Cal-IPC (2014).

Ruderal Grassland

The majority of the ruderal grassland on the Project site surrounds the wetland features. This habitat is highly degraded, and comprised of UPL species. Common forbs within this habitat include fennel (*Foeniculum vulgare*), wild radish (*Raphanus sativus*), black mustard (*Brassica nigra*), bull mallow (*Malva nicaeensis*), and sourgrass (*Oxalis pes-caprae*); and non-native annual grasses such as wildoats (*Avena* sp.), and various bromes, including (*Bromus diandrus*) and (*Bromus madritensis*). Several berms are scattered across the ruderal grassland and are likely comprised of soil that was removed and placed in piles during previous excavation activities on the Project site.

Ornamental Woodland/Lawn

Much of the project site is comprised of ornamental woodland/lawn; landscaped areas that are routinely mowed and are sometimes irrigated. Common trees throughout this habitat include upland species such as Canary Island date palm (*Phoenix canariensis*), Monterey Pine, cypress (*Hesperocyparis* sp.), eucalyptus (*Eucalyptus* sp.), and acacia (*Acacia* sp.). Lawns were dominated by unknown grasses that lacked the floral parts necessary for its identification to genus or species at the time of the survey, and sourgrass and English ivy were prevalent throughout these areas.

Urban-Suburban

Urban-suburban habitat on the Project site lacked vegetation and includes Humane Society and SPCA buildings and facilities, parking lots, and walking paths or trails.

Sensitive/Regulated Habitats

Wetland and aquatic habitat on the Project site may be regulated by the USACE, San Francisco RWQCB, and the CDFW. Three potential wetland features (W1-W3, Figure 1) and two potential aquatic features (OW1 and C1, Figure 1) exist on the Project site. Project impacts including, but not limited to grading, placement of fill, dewatering of channels or ponded water, or conversion of existing habitat to horse pasture in jurisdictional areas would require obtaining the various permits listed in Table 2.

The two features on the Project site characterized as coastal brackish marsh (W1 and W3, Figure 1) are restricted from tidal influence as a result of the levee along the shoreline of the San Francisco Bay, and thus,

they were not characterized as northern coastal salt marsh, which is a community of special concern that occurs in the Project vicinity (CNDDDB 2014).

Wetland W1 is approximately 0.57 acres (Figure 1) and meets the definitions of Waters of the U.S. and State, and would fall under the jurisdiction of the USACE and San Francisco RWQCB. The CDFW is not likely to claim jurisdiction over W1 because the feature lacks a defined bed and banks (see Title 14, California Code of Regulations, Section 1.72). The stormwater channel supports a total of approximately 0.19 acres of wetlands and other waters (W2, OW1, and C1; Figure 1) that would also fall under the jurisdiction of the USACE and San Francisco RWQCB. In addition, the CDFW would likely claim all three features within the stormwater channel.

The potential wetland within the stormwater ditch (W3, Figure 1) is approximately 0.02 acres, and may fall under the jurisdiction of the USACE and RWQCB. However, features that are hydrologically isolated are not considered Waters of the U.S., and since there was no apparent connection between W3 and adjacent bodies of water (e.g. the stormwater channel or San Francisco Bay) via culvert or surface flows (Photo 8), the USACE would claim jurisdiction over W3 only if it is connected to groundwater. A formal delineation must be submitted to the USACE to gain concurrence on excluding this area as Waters of the U.S. if it is found in drier months that the area does not in fact have a connection to groundwater.

The RWQCB's authority to regulate Projects that impact Waters of the State comes from both the Clean Water Act Section 401 and the Porter Cologne Water Quality Control Act, the latter of which has a much broader definition of Waters of the State than the USACE uses for Waters of the U.S., and the RWQCB would likely claim jurisdiction over W3 regardless of connection to groundwater. The CDFW would not likely claim jurisdiction over this feature because it lacks a defined bed and banks (see Title 14, California Code of Regulations, Section 1.72).

Due to the close proximity of the Project site to the San Francisco Bay, the BCDC would also claim jurisdiction over all habitats that fall within 100 feet of the shore or the mean high water line. The shoreline band is shown on Figure 1 and overlaps with 1.45 acres of the Project site.

Ordinance-size Trees

Heritage trees are defined in the City of San Mateo Municipal Code (Chapter 13.52) and in the San Mateo Ordinance Code Section 11,050. The City of San Mateo defines heritage trees as any bay (*Umbellularia* sp.), buckeye (*Aesculus* sp.), oak (*Quercus* sp.), cedar (*Cedrus* sp.), or redwood (*Sequoia* sp.) with a diameter-at-breast height (DBH) of 10 in or more (measured at 48 inches above natural grade), or any tree with a DBH of 16 in or more. Several large willow trees are present within the small patches of willow riparian forest on the Project site which likely have a DBH greater than 16 in. Impacts to heritage trees as part of the Project may require a tree removal or pruning permit issued by the City of San Mateo Parks and Landscape Maintenance Manager. San Mateo County adheres to a different definition of heritage trees, which does not apply to any of those that are present on the Project site.

Special-Status Plant Species

Based on CNDDDB (2014) records (Figure 2) and the CNPS Rare Plant Inventory tool (CNPS 2014), 88 special-status plant species were identified that are known to occur within one of the 9 USGS 7.5-minute quadrangles including or surrounding the site. Special-status plants were defined as state or federally rare, threatened, or endangered species, species with CNPS Rare Plant Ranks 1-4. Species were determined to be absent from the site based upon (1) the lack of suitable habitat types; (2) the lack of specific edaphic requirements such as serpentine soils; (3) other edaphic requirements were not met by the habitats on-site; (4) the elevation range of the species is outside the range of the study area; or (5) the species is considered extirpated from the immediate vicinity of the Project based upon CNDDDB records (2014). This list of potentially occurring species was reduced to four plant species that could occur within wetland habitat on the Project site: Point Reyes bird's beak (*Chloropyron maritimum* ssp. *palustre*), saline clover (*Trifolium hydrophilum*), Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*), and harlequin lotus (*Hosackia gracilis*). The CNPS (2014) has ranked Point Reyes bird's beak and saline clover as 1B.2, and Gairdner's yampah and harlequin lotus as 4.2. The definitions of CNPS rankings are defined as follows:

- 1A = Plants presumed to be extirpated in California and either rare or extinct elsewhere
- 1B = Plants that are rare, threatened, or endangered in California and elsewhere
- 2A = Plants rare, threatened, or endangered in California but more common elsewhere
- 2B = Plants presumed extirpated in California, but more common elsewhere
- 3 = Plants about which information is needed-a review list
- 4 = A watch list of plants of limited distribution,
 - 0.1: Seriously endangered in California
 - 0.2: Fairly endangered in California
 - 0.3: Not very endangered in California

Impacts to the CNPS ranked 1B special-status plant species could be considered significant under CEQA, and thus, we recommend implementing pre-construction surveys to ensure compliance with these regulations if wetland habitat on the Project site cannot be avoided during construction activities. Due to the small project size and widespread distribution of Gairdner's yampah and harlequin lotus, it is unlikely that impacts to these species from the project, if they are present, would constitute a significant impact under CEQA.

Special-Status Wildlife Species

The CNDDDB was queried for special-status species that could occur in an near to the Project site (Figure 3). Because the Project site is located within a dense urban matrix and thus isolated from other undeveloped lands, the potential for Project-related impacts on special-status species is very limited. Many of the special-status animal species present in the region (i.e., San Francisco Peninsula) do not occur on the Project site because the site lacks suitable habitat and/or is outside the range of the species. Such species include the bay checkerspot butterfly (*Euphydryas editha bayensis*), mission blue butterfly (*Icaricia icarioides missionensis*), and the California least tern (*Sterna antillarum brownii*). Several other special-status wildlife species may occur on the Project site only as

uncommon or rare visitors, migrants, or transients, and are not expected to reside or breed on the site and would not be likely to be affected by construction or development of the site. These include species such as the brown pelican (*Pelecanus occidentalis californicus*), western snowy plover (*Charadrius alexandrinus nivosus*), short-eared owl (*Asio flammeus*), tricolored blackbird (*Agelaius tricolor*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*) and the San Francisco common yellowthroat (*Geothlypis trichas sinuosa*). Four federally-listed animal species occur in San Francisco Bay area habitats similar to that on the Project site, but are considered absent from the site. The rationale for considering these species absent from the Project site is described below.

1. The federally-endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) occurs at very few locations in San Mateo County. The only known population on the east side of the peninsula occurs near the San Francisco International Airport, 3 miles to the northwest. While ostensibly suitable habitat is present on the site, the species is not expected to be present because of the numerous barriers (e.g., HW 101) to dispersal from known locations.
2. The federally-endangered Ridgeway's rail (*Rallus obsoletus obsoletus*) occurs in tidal salt and brackish marsh. Rails have been recorded within several miles of the Project site, but the non-tidal marsh habitat in the Project area is too fragmented and unsuitable for Ridgeway's rails.
3. The federally-endangered salt marsh harvest mouse (*Reithrodontomys raviventris*) occurs in salt marsh habitat. The range of this species on the peninsula is now restricted to marshes south of the San Mateo Bridge. The marsh habitat on the Project site is too limited in size and isolated from other occupied marshes for this species to be present.
4. The federally-threatened California red-legged frog (*Rana draytonii*) is known to occur near the San Francisco International Airport, 3 miles to the northwest. However, while marginally suitable habitat is present at the Project site, it is too isolated to sustain a population of red-legged frogs. The Project site does not fall within critical habitat for this species.

Development of the site may potentially impact non-special-status nesting birds, which may nest in shrubs, trees, or on man-made structures. Although impacts to these common species would not be considered significant under the CEQA, nesting birds are protected by the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Thus, we recommend implementing the avoidance and minimization measures described below to ensure compliance with these regulations.

Avoidance and Minimization Measures

Measures to avoid and minimize impacts to water quality, heritage trees, and nesting birds may be considered during the initial design process, incorporated into the Project description, or may be set forth as requirements by regulatory agencies during the permitting process. Initially, the Project footprint may be designed to avoid temporary and permanent impacts to sensitive and/or regulated biological resources to the extent possible; and additional measures to avoid and minimize these impacts may be considered during the development of the Project.

Suggested Measures to Protect Water Quality

1. The amount of wetland and aquatic habitats that are impacted by the Project should be limited to the smallest area required to safely and efficiently complete the work.
2. Work should proceed during days when rain is not occurring and is not predicted to occur (i.e., less than 30 percent chance) during the work period.
3. Heavy equipment will not be operated in wetland or aquatic habitats to the extent feasible, and during wet weather, they should remain on paved areas. Vehicle and equipment washing and fueling should take place off-site, or within a designated area near the entrance of the Project site in uplands at least 50 feet away from wetlands. Fueling areas should be designed to contain spills, and ample spill cleanup supplies will be kept on-site.
4. Standard erosion control and slope stabilization measures, such as fiber rolls, erosion control blankets, silt fences, and others may be required for work performed in any area where erosion could lead to sedimentation of a wetland or body of water. All erosion prevention and sediment control measures should be maintained and repaired throughout the duration of the Project.
5. The area and length of time during which bare soil, dirt/mud, gravel, rubbish, refuse and green waste is exposed should be minimized to the maximum extent practicable. When appropriate, tarps, plastic sheeting, or similar materials should be used to cover stockpiled materials on the Project site.
6. Material removed from the existing facilities should be hauled off-site to an appropriate facility for reuse or disposal which should be determined before construction activities begin.
7. Water Conservation methods will ensure that water used on the Project site does not create surface flows capable of carrying pollutants to the nearby wetland and aquatic habitats. All personnel, including sub-contractors, should be instructed on the practical methods of preventing leaks or over-watering.
8. A portion of the excavated soil will be stockpiled on-site could serve as clean fill material to the extent possible. If not re-used on site, soils should be hauled off the site for reuse or disposal.
9. Groundwater or stormwater that accumulates within excavated areas should be pumped out and disposed of in uplands only. Likewise, water used for dust control, wash water, and other construction water will require containment, handling, and disposal.
10. If the Project will require temporary dewatering of wetland or aquatic habitat, a dewatering plan should be developed before construction activities begin.
11. Horse manure should be stored in production buildings or storage facilities, or otherwise covered to prevent manure from coming into contact with rainwater and entering surface waters through runoff.
12. Compost manure where appropriate, and reuse as fertilizer and/or soil amendment if possible.
13. Clean water should be diverted from contact with feedlots and holding pens, animals, and manure storage facilities through the use of berms, dikes, diversions, roofs, or enclosures.

Suggested Measures to Protect Biological Resources

1. Pre-construction surveys for special-status rare plant species that have the potential to occur on the Project site (Point Reyes bird's beak and saline clover) will be conducted during their bloom periods.

2. Invasive vegetation trimmed from within the Project will be collected and taken to a composting facility capable of neutralizing invasive plant material through high-heat composting or similar methods.
3. The excavated area will be backfilled with clean, native soil, and will be engineered to match the characteristics (e.g. density and compaction) of the existing substrate on the Project site.
4. Trees that are not scheduled for removal will be preserved by providing sufficient setback to protect the roots, and setbacks will be clearly marked for avoidance.
5. Tree roots of trees to be retained on site will not be left exposed to the air during grading activities, and will be protected with wet burlap or peat moss until the excavated area is ready for backfill. During backfill, careful tamping and punching 12-in holes in the compacted ground using an iron bar can help achieve the desired amount of soil aeration to allow root recovery.
6. The ends of damaged tree roots will be cleanly removed with a smooth cut. Damaged bark will be removed with a cut that is tapered at the top to provide drainage at the base of the wood.
7. Fell material from trimming, such as woody debris and vegetation, will be contained immediately and hauled off-site.

Suggested Measures to Protect Nesting Birds

1. **Avoidance.** To the extent feasible, Project activities should be scheduled to avoid the nesting season. If such activities are scheduled to take place outside the nesting season, all impacts on nesting birds protected under the MBTA and California Fish and Game Code should be avoided. The nesting season in San Mateo County extends from 1 Jan through 31 August for most raptors and 1 February through 31 August for most non-raptors.
2. **Vegetation Removal during the Non-Nesting Season.** If Project activities will not be initiated until after the start of the nesting season, potential nesting substrate (e.g., bushes, trees, grasses, and other vegetation) that is scheduled to be removed by the Project may be removed prior to the start of the nesting season (e.g., prior to 1 January) to reduce the potential for initiation of nests. If it is not feasible to schedule vegetation removal during the nonbreeding season, or where vegetation cannot be removed (e.g., in areas immediately adjacent to the property), then pre-construction surveys for nesting birds can be conducted as described below.
3. **Pre-construction/Pre-disturbance Surveys.** If it is not possible to schedule Project activities between 1 September and 31 December, then pre-construction surveys for nesting birds should be conducted by a qualified ornithologist to ensure that no nests will be disturbed during Project implementation. An initial pre-construction survey to determine the likelihood of constraints due to the presence of an active nest should be conducted 14 days prior to the onset of construction activities with a final pre-construction survey conducted no more than 48 hours prior to the initiation of Project activities. During this survey, a qualified ornithologist shall inspect all potential nesting habitats (e.g., trees, shrubs, grasslands, and buildings) within 300 feet of impact areas for raptor nests and within 100 feet of impact areas for nests of non-raptors. If an active nest (i.e., a nest with eggs or young, or any completed raptor nest attended by adults) is found sufficiently close to work areas to be disturbed by these activities, the ornithologist, in consultation with the CDFW, will determine the extent of a

disturbance-free buffer zone to be established around the nest (typically 300 feet for raptors and 100 feet for other species) to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during Project implementation.

Summary

In summary, the Project has the potential to impact wetlands and aquatic habitats, special-status plants and wildlife, heritage trees, and nesting birds. Any grading activities or placement of fill in wetlands, streams, or culverts may require a USACE - Section 404 Nationwide Permit, RWQCB- 401 Water Quality Certification, and/or a CDFW Lake and Streambed Alteration Agreement (LSAA). Additional permits the Project applicant would need to obtain include an Administrative or Major Permit from the BCDC for any work that would occur within the 100-foot shoreline band, where BCDC staff will determine which type of permit is needed. The greater the level of work required within the shoreline band, the greater chance a Major Permit will be required. Finally, a Tree Removal/Pruning Permit from the City of San Mateo Parks and Recreation Department may be required for Project impacts to heritage trees. Since special-status plants have the potential to occur on the Project site, pre-construction surveys for these species would be necessary to determine if the Project would result in significant impacts under CEQA. Incorporation of the Avoidance and Mitigation Measures described above would minimize impacts to sensitive/regulated habitats and other significant biological resources on the Project site.

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Appendix A. Photo-documentation



Photo 1. Coastal brackish marsh wetland (W1).



Photo 2. Coastal freshwater marsh (W2).



Photo 3. Coastal brackish marsh (W3).

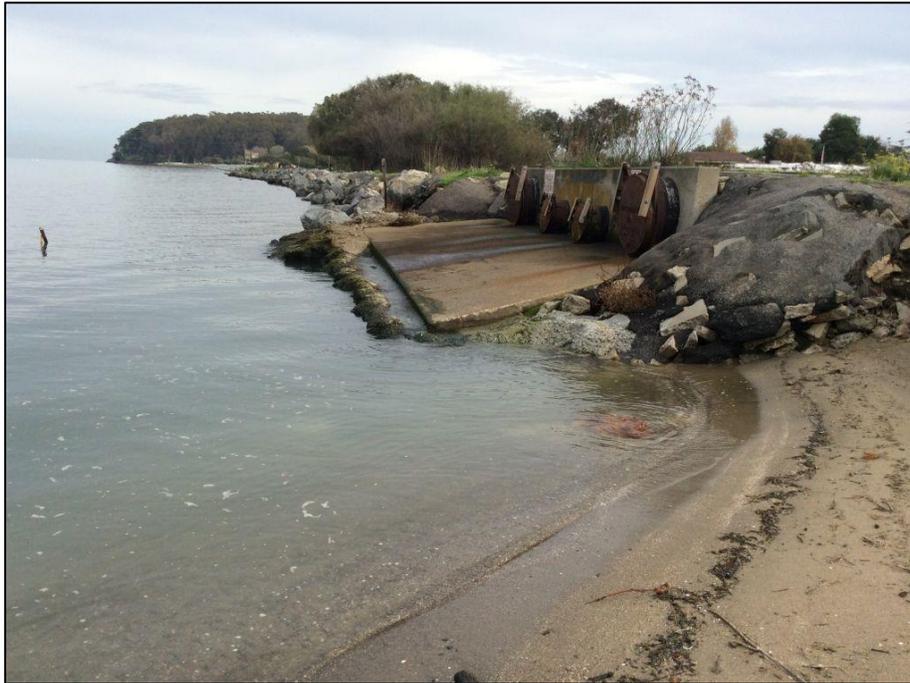


Photo 4. Pump station outlet to the San Francisco Bay.



Photo 5. Perennial stream habitat (OW1).



Photo 6. Stormwater drain at eastern terminus of the ditch.



Photo 7. Willow forest habitat on the Project site supports heritage trees.



Photo 8. Western terminus of the stormwater ditch that supports coastal brackish marsh (W3).