

Appendix D: Biological Resources Technical Report

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Memorandum

July 27, 2017

Project # 3328-15

To: Caitlin Chase, Project Manager
Circlepoint

From: Kelly Hardwicke, Principal Plant Ecologist
H. T. Harvey & Associates

**Subject: Half Moon Bay Hyatt Place Project Biological Resources Technical Report
Peer Review**

This memorandum provides a peer review of existing biological resources information for the approximately 7.78-acre (ac) study area of the Half Moon Bay Hyatt Place Project (project), which includes the 5.04-ac project site and surrounding adjacent lands to cover potential indirect effects of the proposed project, located in Half Moon Bay, California (Figures 1 and 2). The proposed project is a 3-story, 143-room hotel with conference space, informational kiosk, and associated recreational and parking facilities. Previously, a biotic resources technical study and report was prepared by Coast Range Biological LLC (CRB) and Biosearch Associates in November 2013 for a different project at the same location entitled *Biotic Assessment: James Ford Dealership Project, Half Moon Bay, California*, and a subsequent follow-up study was conducted in June 2016 by SWCA Environmental Consultants (SWCA) entitled *Jamison Hotel Project (Former James Ford Dealership Project), Half Moon Bay, California*. H. T. Harvey & Associates conducted a peer review of the biological resources analyses in these previous reports. In our current report, we reference information in the two previous reports and describe any differences between our opinions and those provided in the applicant's documents regarding existing conditions, potential impacts, and mitigation measures necessary to reduce potentially significant impacts on biological resources to less-than-significant levels.

1.1 General Project Site Description

The project site is a vacant, triangular parcel of approximately 5.03-acres located north of the intersection of Cabrillo Highway and Higgins Canyon Road (APN 065-012-030). The project site is bounded by Cabrillo Highway on the west, South Main Street on the east, and the James Ford Auto Dealership on the north. The project site occurs within the *Half Moon Bay* U.S. Geological Survey (USGS) 7.5 minute quadrangle, and is part of the San Francisco South watershed (HUC 18050006) (Figure 3). It is approximately 0.33 mile (mi) west of Arroyo Leon, the nearest blue line watercourse, and 0.75 mi from the shoreline of the Pacific Ocean. It is situated on the southern edge of existing urban development; and is surrounded by residential neighborhoods,

businesses, and agricultural land. The site is a relatively flat, alluvial floodplain with an elevation that ranges from 90 to 95 feet (ft) Earth Gravitational Model of 1996 (EGM96) (Google Inc. 2017). One soil type is mapped within the site: Botella clay loam, 0 to 2 percent slopes, nearly level. This soil type is well-drained and is formed from material washed from sedimentary rocks. It typically occurs in small alluvial valleys and on gently sloping benches, terraces, and fans (SCS 1961). Soils within the Botella series are considered hydric when occurring in depressions (NRCS 2017a). However, they are not considered hydric when occurring on level terrain (NRCS 2017b).

The project site is currently undeveloped agricultural land that is intermittently mowed, disked, and row-cropped. Agricultural practices have not occurred in the site since 2013, according to aerial images from Google Earth Pro software (Google Inc. 2017) and the biological assessment (CRB and Biosearch Associates 2013), and the site now supports three biotic habitats: 1) landscaped/developed, 2) ruderal grassland, and 3) seasonal wetland. A detailed description of the biotic habitats on the site is included under Section 1.3.

1.2 Background Review and Field Studies

Prior to conducting field surveys for the purpose of peer-reviewing the earlier studies, H. T. Harvey & Associates ecologist reviewed background information on the project and the biological resources potentially present on the site, including:

- The information provided in the previous reports for the project site (CRB and Biosearch Associates 2013, SWCA 2016);
- Covered species and environmentally sensitive habitat areas defined by the City of Half Moon Bay in the Local Coastal Land Use Plan (1993);
- Maps and aerial imagery of the project site that were obtained from the U.S. Geological Survey (USGS), National Wetlands Inventory (NWI) (2017), Nationwide Environmental Title Research (NETR) (2017), and Google Earth Pro software (Google Inc. 2017);
- The CDFW's California Natural Diversity Database (CNDDDB), which provided maps of known occurrences of special-status species in the project vicinity (defined as the area within a 5-mile radius);
- The California Native Plant Society's (CNPS's) Rare and Endangered Plant Inventory, including a search of CNPS records for special-status species recorded in San Mateo County and for the *Half Moon Bay*, California USGS 7.5-minute quadrangle map in which the site occurs, and the surrounding five quadrangles (*Montara Mountain, San Mateo, Woodside, San Gregorio, and La Honda*) (CNPS 2017);
- The CDFW's Vegetation Classification and Mapping Program: Natural Communities List (CDFG 2010a);
- The CDFW's List of Vegetation Alliances and Associations within the Vegetation Classification and Mapping Program (CDFG 2010b);
- A Manual of California Vegetation (Sawyer et al. 2009); and



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Figure 1. Vicinity Map

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N:\Proposals\18783\Reports\1D of Waters\Fig 2 Project Site and Aerial Photograph.mxd



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Figure 2. Project Site and Aerial Photo

Half Moon Bay Hyatt Hotel Project
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Field surveys of the study area defined in Figure 2 (i.e., project site and adjacent areas) were conducted by H. T. Harvey & Associates plant ecologists, Maya Goklany, M.S., Kelly Hardwicke, Ph.D., and Matthew Mosher, B.S. on May 30, 2017. H. T. Harvey & Associates senior wildlife ecologist Robin Carle, M.S., also visited the site on May 31, 2017. The purpose of these surveys was to: (1) obtain an overview of the habitat conditions on the project site in order to allow for a peer review of the reports by CRB and Biosearch Associates and SWCA; (2) assess existing biotic habitats and general wildlife communities in the study area; (3) assess the potential for implementation of the project to impact special-status species and/or their habitats; and (4) identify potential jurisdictional habitats, such as waters of the U.S./state defined by U.S. Army Corps of Engineers (USACE) and one-parameter wetlands as defined by the California Coastal Commission (CCC); and (4) search for potential rare plants including Choris' popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*, CRPR 1B.2) and Kellogg's horkelia (*Horkelia cuneata* spp. *sericea*, CRPR 1B.1). Follow-up focused surveys for rare plants and wetland delineation occurred on June 13, 2017 and June 28, 2017 conducted by Ms. Goklany.

1.3 General Site Conditions

During the 2017 field surveys, H. T. Harvey & Associates observed three biotic habitats in the study area: (1) landscaped/developed, (2) ruderal grassland, and (3) seasonal wetlands (Figure 4). These results differed from the vegetation mapping provided by CRB and Biosearch Associates (2013) and SWCA (2016) for the portion of the study area located south of the existing car dealership. Detailed descriptions are provided below¹.

Landscaped/developed areas include the James Ford Car Dealership on the northernmost portion of the study area, with two associated buildings and a large asphalt parking area. In addition, this habitat type includes a strip of crimson bottlebrush trees (*Callistemon citrinus*) along the eastern border of the study area.

Ruderal grasslands occur throughout the majority of the study area and are characterized by undeveloped land that is intermittently mowed, disked, and row-cropped. Active agricultural practices have not occurred at the site since 2013, according to aerial images from Google Earth Pro software (Google Inc. 2017), therefore this area was not mapped as Agricultural as it is no longer the active land use. The western portion of the ruderal grassland is a mesic area that is dominated by Italian ryegrass (*Festuca perennis*), bristly ox-tongue (*Helminthotheca echioides*). The eastern portion of the ruderal grassland is drier and dominated by wild radish (*Raphanus sativus*) and wild oats (*Avena* sp.).

Four seasonal wetland features located on the western boundary of the study area were determined to meet the USACE three-parameter criteria for wetlands under Section 404 of the Clean Water Act (Figure 4). Each feature supported strongly hydrophytic (water-loving) vegetation, occurred in depressions, and exhibited wetland hydrology indicators. Soils were determined to be problematic across the study area as a result of intermittent disking, and thus hydric soil indicators such as soil color mottling were not observed nor

¹ According to the City of Half Moon Bay, the project site had not been disturbed in the year prior to the May and June 2017 surveys.



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Figure 4. Habitat Map

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discounted in these depressional areas, but as mentioned above, the Botella soil map unit is considered hydric when occurring in depressions.

In addition to these four seasonal wetlands, the CCC may claim more areas within the ruderal grasslands as “one-parameter wetland” features (H. T. Harvey & Associates 2017), due to the presence of facultative hydrophytic vegetation, or vegetation that sometimes occurs in wetlands and sometimes does not. Two patches of willow dock (*Rumex transitorius*), a facultative-wetland species, were noted in the study area as were other weedy, non-native facultative plants, such as Italian ryegrass, bristly ox-tongue, and poison hemlock (*Conium maculatum*). One-parameter wetlands can support mildly to strongly hydrophytic vegetation, but are not required to exhibit indicators of hydric soils and/or wetland hydrology or geomorphic positions that would support prolonged inundation as defined by the CCC. However, in this case, these facultative plant stands do not occur in depressions, are widespread over the site in upland landscape positions, and the density and extent of such species on the site may have been exacerbated by the unusually heavy rains in the 2016-2017 rain year, as these stands were not described, mapped, or called out as Environmentally Sensitive Habitat Areas (ESHAs) by the prior studies, including the SWCA’s 2016 study which also occurred several years after cessation of intensive agricultural activities. Subject to concurrence from the CCC, we find these areas do not act as actual one-parameter wetlands and should not be considered Environmentally Sensitive Habitat Areas.

The biotic resources technical study and report prepared by CRB and Biosearch Associates in November 2013 and SCWA in June 2016 mapped beach strawberry (*Fragaria chiloensis*) in the southern portion of the site near the statue and trail. This species was not observed in the site during any of the site visits in 2017. However, it should be noted that the area immediately surrounding the statue had been mowed during the spring of 2017.

Wildlife use of grasslands on the project site is limited by human disturbance, the small extent of the ruderal grassland area, and the isolation of this habitat remnant from more extensive grasslands. As a result, some of the wildlife species associated with extensive grasslands in the Half Moon Bay area, such as the grasshopper sparrow (*Ammodramus savannarum*), are absent from the area of grassland habitat on the project site. Many of the species that occur in grasslands on the site are primarily associated with adjacent urban areas, such as the on-site car dealership, and use grasslands on the site for foraging. These include the house finch (*Haemorhous mexicanus*) and purple finch (*Haemorhous purpureus*), which forage on seeds in ruderal areas, and the black phoebe (*Sayornis nigricans*) and Mexican free-tailed bat (*Tadarida brasiliensis*), which forage aerially over ruderal habitats for insects. An active nest of native Anna’s hummingbirds (*Calypte anna*) was observed in a Monterey cypress (*Cupressus macrocarpa*) tree on the site during the May 2017 reconnaissance-level survey. Native Brewer’s blackbirds (*Euphagus cyanocephalus*) and nonnative Eurasian collared-doves (*Streptopelia decaocto*) and house sparrows (*Passer domesticus*) were also observed on the site; these species will forage throughout developed and grassland areas, and some bird species may nest in bottlebrush (*Callistemon* sp.) trees along the eastern boundary of the site.

California ground squirrels (*Spermophilus beecheyi*) were not observed on the project site during the survey. However, numerous burrows of Botta’s pocket gophers (*Thomomys bottae*) were present on the site, especially

along its eastern edge. Other rodent species that can potentially occur in the ruderal grassland habitat on the site include the California vole (*Microtus californicus*) and deer mouse (*Peromyscus maniculatus*). Diurnal raptors such as red-tailed hawks (*Buteo jamaicensis*) forage for these small mammals over grasslands during the day, and at night nocturnal raptors, such as barn owls (*Tyto alba*), will forage for nocturnal rodents, such as deer mice.

Mammals such as the native striped skunk (*Mephitis mephitis*) and raccoon (*Procyon lotor*) and nonnative Virginia opossum (*Didelphis virginiana*) and feral cat (*Felis catus*) use the project site for foraging. Reptiles such as western fence lizards (*Sceloporus occidentalis*), western skinks (*Plestiodon skiltonianus*), western terrestrial garter snakes (*Thamnophis elegans*), and southern alligator lizards (*Elgaria multicarinata*) frequent grassland habitats, and may occur in grassland habitats or adjacent developed habitats on the project site.

1.4 Special-Status Plants

For purposes of this analysis, “special-status” plants are considered plant species that are:

- Listed under Federal Endangered Species Act as threatened, endangered (FE), proposed threatened, proposed endangered, or a candidate species.
- Listed under California Endangered Species Act as threatened, endangered (SE), rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2, 3, or 4.
- Listed in the Half Moon Bay Local Coastal Program Land Use Plan (1993).

The two previous studies concluded that the project site does not provide suitable habitat for the majority of special-status plant species in the region, including the Choris’ popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*, CRPR 1B.2) and Kellogg’s horkelia (*Horkelia cuneata* spp. *sericea*, CRPR 1B.1), which are known from within 3 mi of the project site (CRB and Biosearch Associates 2013). Choris’ popcorn flower has a bloom period from March through June, and Kellogg’s horkelia blooms from February through July (Calflora 2017). Other rare plant species listed by CRB and Biosearch Associates as having some potential to occur on the site included marsh microseris (*Microseris paludosa*, CRPR 1B.2, blooming April – June), Gairdner’s yampah (*Perideridia gairdneri* ssp. *gairdneri*, CRPR 4.2, blooming from June – October), and Hickman’s cinquefoil (*Potentilla hickmannii*, FE, SE, CRPR 1B.1). Additionally, we find that Johnny-nip (*Castilleja ambigua* var. *ambigua*, CRPR 4.2, blooming March – August), coast iris (*Iris longipetala*, CRPR 4.2, blooms March – May), and Ornduff’s meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*, CRPR 1B.1, blooms November – May) as discussed by SCWA (2016) have a low potential for occurrence. No special-status plants were observed on the site during the field visits that were conducted as part of the prior biological assessments (CRB and Biosearch Associates 2013 and SCWA 2016).

We generally concur with the conclusions of the previous reports, including Appendix A of the CRB and Biosearch Associates (2013) report and the additional species listed in the SCWA (2016) report regarding the potential for occurrence of special-status plant species. We also find that the site does not provide suitable habitat for most regionally occurring species discussed in one or both prior reports, and only provides marginally suitable habitat for Choris’ popcorn flower, marsh microseris, Gairdner’s yampah, johnny-nip, coast iris, Ornduff’s

meadowfoam, and Hickman's cinquefoil. However, we also find Oregon polemonium (*Polemonium carneum*, CRPR 2B.2, blooms April - September) has some low potential to occur on site as well, in contrast to Appendix A of the CRB and Biosearch Associates (2013) report.

Therefore, H. T. Harvey & Associates' plant ecologist, Maya Goklany, M.S. conducted a focused rare plant survey for the eight species listed above on May 30, 2017 and June 27, 2017. Due to the low likelihood of these species being present on the site, reference populations were not visited as part of these surveys. Focused special-status plant surveys represented a high level of effort and included one-two visits in each focal species' bloom period, but were not floristic in nature. The entire project site was traversed on-foot using intuitive east-west transects that were spaced at roughly 30-ft intervals. No special-status plants were observed on the site during the May and June 2017 focused rare plant surveys. Thus, we conclude that impacts to special-status plant species are not expected to occur from the proposed project activities. As such, additional measures, surveys, and/or compensatory mitigation would not be required.

1.5 Special-Status Wildlife

For purposes of this analysis, "special-status" animals are considered animal species that are:

- Listed under the Federal Endangered Species Act as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under the California Endangered Species Act as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFW as a California species of special concern.
- Listed in the California Fish and Game Code as fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515).

Descriptions of sensitive wildlife species that occur on the project site are provided in the previous biological assessments for the project (CRB and Biosearch Associates 2013, SWCA 2016). The western bumblebee (*Bombus occidentalis*), Allen's hummingbird (*Selasphorus sasin*), Nuttall's woodpecker (*Picoides nuttalli*), oak titmouse (*Baeolophus inornatus*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), and hoary bat (*Lasiurus cinereus*), considered special-status species in one or both of those reports, do not meet our definitions of "special-status species" as defined above and would not typically be considered special-status species for California Environmental Quality Act (CEQA) assessments or project permitting. Thus, we do not address these species further.

The two previous studies concluded that the project site does not provide suitable habitat for the majority of special-status species in the region, including the Central California Coast steelhead (*Oncorhynchus mykiss*), San Francisco (a.k.a. "saltmarsh") common yellowthroat (*Geothlypis trichas sinuosa*), and monarch butterfly (*Danaus plexippus*), which occur in the site vicinity (CRB and Biosearch Associates 2013, SWCA 2016). We concur with

the conclusions of the previous reports regarding the absence of these species, and we do not address them further in this analysis.

The California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), nesting birds, and roosting bats are addressed in greater detail below because these species can potentially breed or occur on or immediately adjacent to the project site and/or may be significantly affected by development under the proposed project.

1.5.1 California Red-Legged Frog

The California red-legged frog is a federally threatened species and state species of special concern. The previous reports concluded that no suitable breeding habitat for California red-legged frogs occurs on the project site, but individuals can potentially occur as occasional transients, primarily at night during the rainy season.

Our background review did not identify any new records of California red-legged frogs in the site vicinity (CNDDDB 2017). The U.S. Fish and Wildlife Service (USFWS) considers 1.0 mile as the typical dispersal distance for the species (U.S. Fish and Wildlife Service 2010), and we confirmed that there are two known records of California red-legged frogs within 1.0 mile of the project site, including a record just across California State Route 1 from the site (CNDDDB 2017). In addition, we reviewed aerial imagery within 1.0 mile of the site and identified eight potential breeding ponds, as well as Arroyo Leon, where breeding populations of California red-legged frogs may be present. Barriers to dispersal between these known records of the species and potential breeding ponds include the City of Half Moon Bay and California State Route 1. However, these barriers are not insurmountable, and it is possible that individual California red-legged frogs may travel from known occurrences or potential breeding ponds to reach the project site.

The May 2017 reconnaissance-level survey did not detect any substantial changes in red-legged frog habitat on the site since the previous assessments in 2013 and 2016, and confirmed that no suitable breeding habitat for red-legged frogs occurs on or immediately adjacent to the site. Thus, based on our background review and field visit, we concur with the previous determinations that the site only provides potential dispersal habitat for California red-legged frogs in areas of ruderal grassland, and that the potential for red-legged frogs to occur on the project site is very low. Individuals inhabiting nearby areas can potentially disperse across the site, especially at night or during rain events.

The previous reports indicated that California red-legged frogs are only expected to disperse across the site at night during rain events. However, H. T. Harvey & Associates herpetologists have observed active California red-legged frogs in terrestrial areas during night surveys when no rain event was occurring or had recently occurred. In addition, California red-legged frogs have been documented moving short distances from water during the summer, and they will move longer distances from water following summer rain events (Bulger et al. 2003). Thus, in our opinion, there is some potential for California red-legged frogs to move onto the site during the dry season, especially as the site is located extremely close (i.e., across California State Route 1) to a known occurrence of the species.

1.5.1.1 Impacts and Mitigation

Due to the regional rarity of this species, project impacts on small numbers of individual California red-legged frogs would be considered significant under CEQA. Mitigation Measure 1 provided in the 2013 biotic assessment restricts ground disturbance to the dry season (i.e., May 1 through October 1) to avoid impacts on this species (CRB and Biosearch Associates 2013). In our opinion, the implementation of additional avoidance and minimization measures, provided as Mitigation Measures 5A–5E below, would likely be needed to avoid and minimize potential project-related impacts on the California red-legged frog due to the potential for individuals to move onto the site during the dry season.

Mitigation Measure 5A. Worker Environmental Awareness Program. Before any construction activities begin, a qualified biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and San Francisco garter snake and their habitats, the importance of these species, the general measures that are being implemented to conserve these species as they relate to the project, and the boundaries within which the project may be accomplished.

Measure 5B: Exclusion Barrier. A wildlife exclusion fence (WEF) will be installed prior to the initiation of construction activities to exclude California red-legged frogs and San Francisco garter snakes from the construction area. The WEF will consist of silt fencing, plywood, ERTEC fencing, or suitable material at least 36 inches in height that is buried 6 inches deep in the ground, or similar method, to prevent access under the fencing. [Note: the CRB and Biosearch Associates (2013) report recommended that no exclusion fencing be constructed because such fencing could direct California red-legged frogs onto Main Street or Highway 1, potentially subjecting them to vehicular mortality. However, if no exclusion fencing is constructed, then dispersing individuals could occur on the project site during construction, where they may seek refuge under equipment or construction materials, leading to a higher potential for project-related mortality, whereas individuals moving around the site may or may not suffer vehicular mortality if they are directed toward Main Street or Highway 1. Because the San Francisco garter snake is listed by the state of California as a fully protected species, so that no take from construction projects is allowable, it is our opinion that constructing a WEF around the project site prior to construction will best avoid the potential for project-related take of this species.]

Mitigation Measure 5C. Preconstruction Survey. A qualified biologist shall conduct a preconstruction survey of the work area within 48 hours of the initiation of project activities. If a California red-legged frog of any life stage or San Francisco garter snake is found, the animal will not be handled and will instead be allowed to leave the site on its own. If needed, the USFWS (and CDFW, if a San Francisco garter snake is found) will be contacted to request permission to relocate the individual or additional guidance on the disposition of the individual.

Mitigation Measure 5D. Biological Monitoring. A qualified biologist will remain on-site to monitor the installation of the WEF to ensure that no San Francisco garter snakes or California red-legged frogs are trapped within the construction area or harmed during installation. If an individual of these species is detected, any project activities that could result in harm to the individual will cease until the individual has moved out of the project site on its own. The USFWS will be contacted immediately if a California red-legged frog or San Francisco garter snake is

found, and the CDFW will be contacted immediately if a San Francisco garter snake is found. If any individuals are killed or injured during project activities, the USFWS and/or CDFW, as appropriate, will be contacted within 24 hours.

Following the completion of the installation of the WEF, the biologist will train a dedicated member of the construction crew in the identification of the California red-legged frog and San Francisco garter snake, as well as appropriate protocols to follow if either of these species (or animals that may be one of these species) are detected on the site. This dedicated crew member will be responsible for checking the work area for these species prior to the start of construction each day, for inspecting any steep-walled holes or trenches for any animals that may inadvertently become trapped and/or injured, and for inspecting the integrity of the WEF each day and ensuring that any needed repairs are completed within 24 hours.

Mitigation Measure 5E. Prevention of Entrapment. To prevent the inadvertent entrapment of San Francisco garter snakes and California red-legged frogs, all excavated, steep-walled holes or trenches will be completely covered at the end of each work day with plywood or similar materials. If this is not possible, one or more escape ramps constructed of earth fill or wooden planks will be placed in the excavation. Before such holes or trenches are filled, they will be thoroughly inspected for any animals by the on-site biological monitor. If at any time a California red-legged frog or San Francisco garter snake is found trapped or injured in one of these holes, any project activities that could result in harm to the individual will cease until the individual has moved out of the project area on its own (a ramp allowing the individual to leave may need to be provided).

1.5.2 San Francisco Garter Snake

The San Francisco garter snake is federally listed as endangered, state listed as endangered, and a fully protected species under the California Fish and Game Code. Although the CRB and Biosearch Associates (2013) report concluded that this species had no potential for occurrence on the project site, the 2016 report prepared by SWCA concluded that San Francisco garter snakes can potentially disperse across the site on occasion, but the site does not provide high-quality habitat for this species.

Our background review did not identify any new records of San Francisco garter snakes in the site vicinity; however, records of this species are suppressed in the CNDDDB database (CNDDDB 2017). Nevertheless, San Francisco garter snakes are known to occur in the Half Moon Bay area, and this species utilizes the creeks and upland habitats in the area for movement and shelter. As described above for California red-legged frogs, barriers to dispersal in the area, such as the City of Half Moon Bay and California State Route 1, are not insurmountable, and it is possible that individual San Francisco garter snakes may travel from nearby populations to reach the project site.

The May 2017 reconnaissance-level survey did not detect any substantial changes in habitat on the site since the previous assessments in 2013 and 2016. We concur with the previous determination by SWCA (2016) that the site does not provide suitable breeding habitat for San Francisco garter snakes, and the potential for San Francisco garter snakes to occur on the project site is very low. However, the grassland habitat and drainage ditches on the

site provide marginal dispersal habitat for this species, and San Francisco garter snakes that inhabit ponds and streams nearby could potentially disperse across the project site. Because of the developed nature of the site and the low-quality habitat present, the species is expected to occur there only incidentally and in small numbers, if at all.

SWCA (2016) concluded that San Francisco garter snakes are only expected to disperse across the site when water is present in the on-site drainage ditches. However, San Francisco garter snakes are most active during the dry season between March and July (Freel and Giorni 1994), and the species has been documented moving several hundred yards from aquatic habitats to hibernate in upland small mammal burrows (USFWS 2007). Thus, there is some possibility that San Francisco garter snakes inhabiting nearby areas can disperse across the project site during times of year when no water is present, especially between March and July.

1.5.2.1 Impacts and Mitigation

Due to the regional rarity of this species, project impacts on small numbers of individual San Francisco garter snakes would be considered significant under CEQA. Mitigation Measure 4 provided in the 2016 report restricts ground disturbance to the dry season to avoid impacts on this species (SWCA 2016). In our opinion, the implementation of additional avoidance and minimization measures, provided as Mitigation Measures 5A–5E above, would likely be needed to avoid and minimize potential project-related impacts on the San Francisco garter snake due to the potential for individuals to move onto the site during the dry season.

1.5.3 Certain Common Native Birds that Nest on the Site

All native bird species that nest on the project site are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. The grassland habitat on the site provides suitable foraging habitat for several special-status bird species, such as the state fully protected white-tailed kite (*Elanus leucurus*) and tricolored blackbird (*Agelaius tricolor*), but these species are not expected to nest on the site due to a lack of suitable habitat and high levels of human disturbance, and thus would not be substantially affected by the project.

The May 2017 reconnaissance-level survey did not detect any substantial changes in habitat on the site since the previous assessments in 2013 and 2016, and confirmed that the site provides suitable nests habitat for several native protected bird species. An active nest of Anna's hummingbirds was observed in a Monterey cypress on the project site during the May 2017 reconnaissance-level survey. Native Brewer's blackbirds, house finches, and purple finches were also observed on the site during the May 2017 survey, and these species may nest in trees or structures on the site. A number of other common native bird species, such as the black phoebe and mourning dove (*Zenaida macroura*), may also nest on the site.

No existing nests of raptors (e.g., eagles, hawks, and owls) were observed on or within 300 feet of the site (i.e., close enough to the site that the nesting bird may potentially be disturbed by construction activities), and the trees on the site provide only very marginal habitat for nesting by raptors. An active nest of red-tailed hawks was present approximately 350 feet northwest of the site in a grove of eucalyptus (*Eucalyptus* sp.) trees. However, these

birds are highly tolerant of existing levels of disturbance, including traffic along California State Route 1, and they are not expected to be disturbed by the proposed project.

Thus, based on our background review and field visit, it is our opinion that no special-status bird species (as we have defined them above) or raptors are expected to nest on the project site, but the site provides suitable habitat for several species of common nesting birds.

1.5.3.1 Impacts and Mitigation

The removal of vegetation supporting active nests may cause the direct loss of eggs or young, and construction-related activities near an active nest may cause adults to abandon their eggs or young. This type of impact would not be significant under CEQA, in our opinion, because of the local and regional abundances of the species that could potentially nest on the site and the low magnitude of the potential impact of development on these species (i.e., the project is expected to impact only a few pairs of these species, which is not a substantial impact to their regional populations). Therefore, we do not agree that Mitigation Measure 2 in the 2013 biotic assessment is necessary for CEQA purposes.

Nevertheless, Mitigation Measure 2 in the 2013 biotic assessment would help to minimize the potential for destruction or disturbance of active nests, which would be a violation of the MBTA and California Fish and Game Code. That measure includes a preconstruction survey for active nests within 30 days of the start of construction activities that occur during the nesting season (defined as February 1 through August 15) within 300 feet of the site and the establishment of non-disturbance buffer zones around any active nests in consultation with the CDFW. Because birds can construct new nests in a relatively short time period, we recommend that this survey be conducted no more than seven days prior to the initiation of construction activities if the applicant wishes to have more confidence in avoiding violations of the MBTA and California Fish and Game Code.

1.5.4 Roosting Common and Special-Status Bats

All bat species that occur on the project site are protected under the California Fish and Game Code. The previous reports identified potential roosting and foraging habitat for bat species, including the pallid bat (*Antrozous pallidus*), big free-tailed bat (*Nyctinomops macrotis*), and Townsend's big-eared bat (*Corynorhinus townsendii*), which are California species of special concern.

The pallid bat and Townsend's big-eared bat are known to occur in San Mateo County and can potentially roost in the site vicinity. Common species of bats, such as the Yuma myotis (*Myotis yumanensis*) and Mexican free-tailed bat (*Tadarida brasiliensis*) may also roost in the site vicinity. However, the big free-tailed bat requires large cliffs for roosting, and no suitable roosting habitat for this species occurs on the site or close enough to the site that this species could potentially be affected by the project.

Bats, especially special-status bats, are not expected to roost in the structures immediately north of the site while they are in-use due to high levels of human disturbance. In addition, these structures provide relatively low-quality

roosting habitat for bats due to their flat roofs and lack of attics, and bats are unlikely to roost in these structures. In addition, no suitable cavities for roosting were observed in trees on the site during the May 2017 site visit. Thus, we concur with the previous determination that common and special-status bats would not roost in the trees within the project site or in the occupied structures adjacent to the site.

1.5.4.1 Impacts and Mitigation

Due to the rarity of the pallid bat and Townsend's big-eared bat, project impacts on small numbers of individuals of these species would be considered significant under CEQA. Project impacts on common bat species, such as the Yuma myotis or Mexican free-tailed bat, would only be considered significant under CEQA if a large colony (i.e., >100 individuals) were to be present in the adjacent buildings. The previous studies recommended that any disturbance of the existing adjacent structures should be preceded by a preconstruction survey for roosting bats. However since these structures are no longer part of the proposed project site and suitable roosting habitat is absent, project impacts to regional bat species are not expected to occur. In our opinion, potential project impacts on roosting bats would be less than significant under CEQA, and no mitigation measures are warranted.

1.6 Sensitive Natural Communities, Vegetation Alliances, and Habitats on the Project Site

For purposes of this analysis, "sensitive habitats" are considered areas that are:

1. Natural communities or vegetation alliances considered sensitive by CDFW (CDFG 2010a,b);
2. Wetlands and waters that fall under the jurisdiction of the USACE through Section 404 of the Clean Water Act (CWA);
3. "Waters of the State" as regulated by the State Water Resources Control Board (SWRCB) or RWQCB under the State Water Quality Certification Program under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne);
4. Bed, bank, and channels, and associated riparian habitat under the jurisdiction of the CDFW under California Fish and Game Code Sections 1600-1616 and the Lake and Streambed Alteration Program; and
5. Environmentally Sensitive Habitat Areas (ESHAs) as defined by the Local Coastal Program Land Use Plan (1993).

The two previous studies by CRB and Biosearch Associates (2013) and SWCA (2016) concluded that the study area does not support sensitive habitats, but did conclude that wetlands found to be jurisdictional by either the USACE or CCC may be present and a delineation should be conducted. During the 2017 field surveys, four seasonal wetlands meeting the USACE criteria for Section 404 wetlands were found along the western boundary of the study area (Figure 4). Though these may be old agricultural ditches constructed in uplands, they have persisted for some years and have developed wetlands likely to be considered jurisdictional by the USACE and CCC. Each feature exhibited wetland vegetation and wetland hydrology indicators that meet the USACE criteria for wetlands and would also be considered an ESHA by the Local Coastal Program. Soils were problematic due

to past agricultural activities, but as previously mentioned, the study area is underlain by Botella clay loam, 0 to 2 percent slopes, nearly level. This soil type is considered hydric when it occurs in depressions (NRCS 2017a). As such, the geomorphic position of areas colonized by hydrophytic vegetation was an important indicator of wetland hydrology used to determine the presence of these four seasonal wetlands. Moreover, these four features occur in an area that appears saturated in historical aerial imagery (C9) and surface soil cracks (B6) were noted at one sample location.

In addition to these four seasonal wetlands, the CCC may claim more areas within the ruderal grasslands as “one-parameter wetland” features. One-parameter wetlands can support mildly to strongly hydrophytic vegetation, but do not always exhibit indicators of hydric soils and/or wetland hydrology or geomorphic positions that would support prolonged inundation as defined by the CCC. Given that this past rainy season was well above average, these field results may be atypical for the site. Therefore, we recommend working with the USACE and CCC to determine final jurisdictional status of these features.

The previous studies recommended that a delineation should be conducted, but did not provide mitigation measures beyond this and following eventual permit conditions. The following measure will reduce potential project impacts on wetlands under CEQA if features claimed by either the USACE or CCC will be impacted.

Mitigation Measure 6a. Avoid all wetlands to the extent feasible. All jurisdictional wetlands and ESHAs claimed by the CCC shall be avoided to the extent feasible. This includes direct loss and indirect water quality impacts that could occur due to adjacent development. During construction, suitable erosion control, sediment control, source control, treatment control, material management, and stormwater management measures would be used in conformance with the NPDES Statewide Construction General Permit (Order No. 2009-0009-DWQ). Additionally, the project will be designed to comply with the *California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit (MRP)* (Water Board Order No. R2-2009-0074). This will require that the project implement BMPs into the design that prevents stormwater runoff pollution, promotes infiltration, and holds/slows down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate the use of tree planters, grassy swales, bioretention and/or detention basins, among other factors. The site is already largely designed to preserve existing drainage characteristics, as seen by the placement of stormwater treatment basins near the area of the site where the seasonal wetlands occur. These basins shall be designed to drain to the avoided wetland area to preserve hydrological inputs from the site.

Mitigation Measure 6b. Compensate for lost wetlands by restoring avoided wetlands. If all jurisdictional wetland areas (as determined by site verification) cannot be avoided by the project, the project will restore avoided wetlands on-site at 2:1 by implementing a weed removal program in the avoided wetlands, which are dominated by weedy, non-native species such as pennyroyal (*Mentha pulegium*). A qualified restoration ecologist will develop a Wetland Restoration and Monitoring Plan, which will contain the following components (or as otherwise modified by regulatory agency permitting conditions):

1. Goal of the restoration (to increase wetland habitat functions and values by removing invasive species);

2. Restoration design:
 - Weed removal, control, and monitoring plan
 - Soil amendments and other site preparation elements as appropriate
 - Planting plan (to replace non-natives with native wetland species)
 - Maintenance plan
 - Remedial measures/adaptive management
3. Monitoring plan, including final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.); at a minimum, success criteria will include restoration of native wetland vegetation and no more than 5% cover of non-native species, and provision of ecological functions and values equal to or exceeding those in the habitat that was impacted; and
4. Contingency plan for mitigation elements that do not meet performance or final success criteria.

The Local Coastal Program also considers local wild strawberry (*Fragaria vesca*) as an ESHA. The biotic resources technical study and report prepared by CRB and Biosearch Associates in November 2013 and SCWA in June 2016 mapped beach strawberry in the southern portion of the site near the statue and trail. This species was not observed in the site during any of the site visits in 2017. It should be noted that the area immediately surrounding the statue had been mowed during the spring of 2017; however, strawberry is a fast-growing clonally reproducing plant and likely would have reappeared during our surveys if still present.

1.7 Wildlife Movement

The project site provides limited habitat for wildlife movement. Due to the density of development in the project region and the presence of busy roadways surrounding the site, there are currently no well-defined movement corridors for terrestrial species, such as mammals and reptiles, within or through the project site. Wildlife species may move through the area using cover and refugia as they find them available. However, most dispersal by wildlife species likely occurs along higher-quality habitats to the east (along the coast) and west (within areas of open space).

Due to its small size and the predominantly non-native vegetation that dominates the project site, the site does not provide high-quality habitat for migratory birds in comparison to more natural areas with native trees and vegetation to the east and west. Migratory birds flying over or along the coastline may use the site as a stopover site for refueling and deposition of fat reserves to continue migration, but they are expected to do so in small numbers due to the marginal habitat quality.

In summary, the project site is not a particularly important area for movement by wildlife, and it does not contain any high-quality corridors allowing dispersal of such animals through the City of Half Moon Bay. Thus, we concur with the previous determinations that the site does not provide a valuable movement corridor for wildlife.

1.7.1.1 Impacts and Mitigation

In our opinion, potential project impacts on wildlife movement corridors would be less than significant under CEQA, and no mitigation measures are warranted.

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Memorandum

August 8, 2017, revised January 7, 2022

Project # 3328-15

To: Juliet Martin, Senior Associate Environmental Planner
Circlepoint

From: Kelly Hardwicke, Principal Plant Ecologist
H. T. Harvey & Associates

Subject: **Revised Half Moon Bay Hyatt House Hotel Project Biological Resources
Technical Report Update**

This memorandum provides an update to a prior peer review of existing biological resources information for the approximately 7.78-acre (ac) original study area of the Half Moon Bay Hyatt House Hotel Project (project). A reduced intensity alternative, Alternative 2, was proposed in response to public and agency feedback on the project as well as during public forums with the City of Half Moon Bay. Land north of the original study area totaling 1.88 ac was added to the project, prompting a revision of this memo. In sum, the 9.66-ac study area encompasses potential indirect effects of the proposed project, located in Half Moon Bay, California (Figures 1 and 2).

The proposed project is a 66,784 square-foot, 102-room hotel and a subdivision for future development of up to 16 dwelling units along Seymour Street and the expansion of the car dealership parking lot. Previously, a biotic resources technical study and report was prepared by Coast Range Biological LLC (CRB) and Biosearch Associates in November 2013 for a different project at the same location entitled *Biotic Assessment: James Ford Dealership Project, Half Moon Bay, California*, and a subsequent follow-up study was conducted in June 2016 by SWCA Environmental Consultants (SWCA) entitled *Jamison Hotel Project (Former James Ford Dealership Project), Half Moon Bay, California*. H. T. Harvey & Associates conducted a peer review of the biological resources analyses in these previous reports in 2017. In our current report, we update the prior report to include the added project areas, and provide an up-to-date description of existing conditions, potential impacts, and mitigation measures necessary to reduce potentially significant impacts on biological resources to less-than-significant levels.

1.1 General Project Site Description

The northern portion of the study area for the project site is mostly developed, totaling 1.88 ac. The southern portion of the study area for the project site is a vacant, triangular parcel of approximately 5.03-acres located north of the intersection of Cabrillo Highway and Higgins Canyon Road (APN 065-012-030). The project site is

bounded by Cabrillo Highway on the west, South Main Street on the east, and Magnolia Street on the north. The James Ford Auto Dealership and Seymour Street are between the northern and southern portions of the project site. The study area occurs within the *Half Moon Bay* U.S. Geological Survey (USGS) 7.5 minute quadrangle, and is part of the San Francisco South watershed (HUC 18050006) (Figure 3). It is approximately 0.33 mile (mi) west of Arroyo Leon, the nearest blue line watercourse, and 0.75 mi from the shoreline of the Pacific Ocean. It is situated on the southern edge of existing urban development; and is surrounded by residential neighborhoods, businesses, and agricultural land. The site is a relatively flat, alluvial floodplain with an elevation that ranges from 90 to 95 feet (ft) Earth Gravitational Model of 1996 (EGM96) (Google LLC 2017). One soil type is mapped within the site: Botella clay loam, 0 to 2 percent slopes, nearly level. This soil type is well-drained and is formed from material washed from sedimentary rocks. It typically occurs in small alluvial valleys and on gently sloping benches, terraces, and fans (SCS 1961). Soils within the Botella series are considered hydric when occurring in depressions (NRCS 2017a). However, they are not considered hydric when occurring on level terrain (NRCS 2017b).

The project site contains residential housing, parking lots, and currently undeveloped agricultural land that is intermittently mowed, disked, and row-cropped. To the west of the parking lot in the new study area is a roadside drainage ditch that remains undeveloped. Agricultural practices have not occurred in the site since 2013, according to aerial images from Google Earth Pro software (Google Inc. 2022) and the biological assessment (CRB and Biosearch Associates 2013), and the study area now supports three biotic habitats: 1) landscaped/developed, 2) ruderal grassland, and 3) seasonal wetland. A detailed description of the biotic habitats on the site is included under Section 1.3.

1.2 Background Review and Field Studies

Prior to conducting field surveys for the purpose of peer-reviewing the earlier studies, H. T. Harvey & Associates ecologist reviewed background information on the project and the biological resources potentially present on the site, including:

- The information provided in the previous reports for the project site (CRB and Biosearch Associates 2013, SWCA 2016);
- Covered species and environmentally sensitive habitat areas defined by the City of Half Moon Bay in the Local Coastal Land Use Plan (LCLUP; 2020);
- Maps and aerial imagery of the project site that were obtained from the U.S. Geological Survey (USGS), National Wetlands Inventory (NWI) (2022), Nationwide Environmental Title Research (NETR) (2022), and Google Earth Pro software (Google LLC. 2022);
- The CDFW's California Natural Diversity Database (CNDDB), which provided maps of known occurrences of special-status species in the project vicinity (defined as the area within a 5-mile radius);
- The California Native Plant Society's (CNPS's) Rare and Endangered Plant Inventory, including a search of CNPS records for special-status species recorded in San Mateo County and for the *Half Moon Bay*, California

USGS 7.5-minute quadrangle map in which the site occurs, and the surrounding five quadrangles (*Montara Mountain, San Mateo, Woodside, San Gregorio, and La Honda*) (CNPS 2022);

- The CDFW's Vegetation Classification and Mapping Program: Natural Communities List (CDFG 2022);
- A Manual of California Vegetation (Sawyer et al. 2009); and
- Records of birds reported in nearby areas on eBird (Cornell Lab of Ornithology 2022) and records of breeding birds in nearby areas from the San Mateo County Breeding Bird Atlas (Sequoia Audubon Society 2001).

Field surveys of the original study area as defined in Figure 2 (i.e., project site and adjacent areas) were conducted by H. T. Harvey & Associates plant ecologists, Maya Goklany, M.S., Kelly Hardwicke, Ph.D., and Matthew Mosher, B.S. on May 30, 2017. H. T. Harvey & Associates senior wildlife ecologist Robin Carle, M.S., also visited the site on May 31, 2017. H. T. Harvey & Associates plant ecologist, Jill Pastick, M.S., visited the site on June 10, 2021, to survey the new study area and confirm that existing conditions on the original study area had not changed. The purpose of these surveys was to: (1) obtain an overview of the habitat conditions on the project site in order to allow for a peer review of the reports by CRB and Biosearch Associates and SWCA; (2) assess existing biotic habitats and general wildlife communities in the study area; (3) assess the potential for implementation of the project to impact special-status species and/or their habitats; and (4) identify potential jurisdictional habitats, such as waters of the U.S./state defined by U.S. Army Corps of Engineers (USACE) and one-parameter wetlands as defined by the California Coastal Commission (CCC); and (4) search for potential rare plants including Choris' popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*, CRPR 1B.2) and Kellogg's horkelia (*Horkelia cuneata* spp. *sericea*, CRPR 1B.1). Follow-up focused surveys for rare plants and wetland delineation occurred on June 13, 2017 and June 28, 2017 conducted by Ms. Goklany, and on June 10, 2021 conducted by Ms. Pastick.



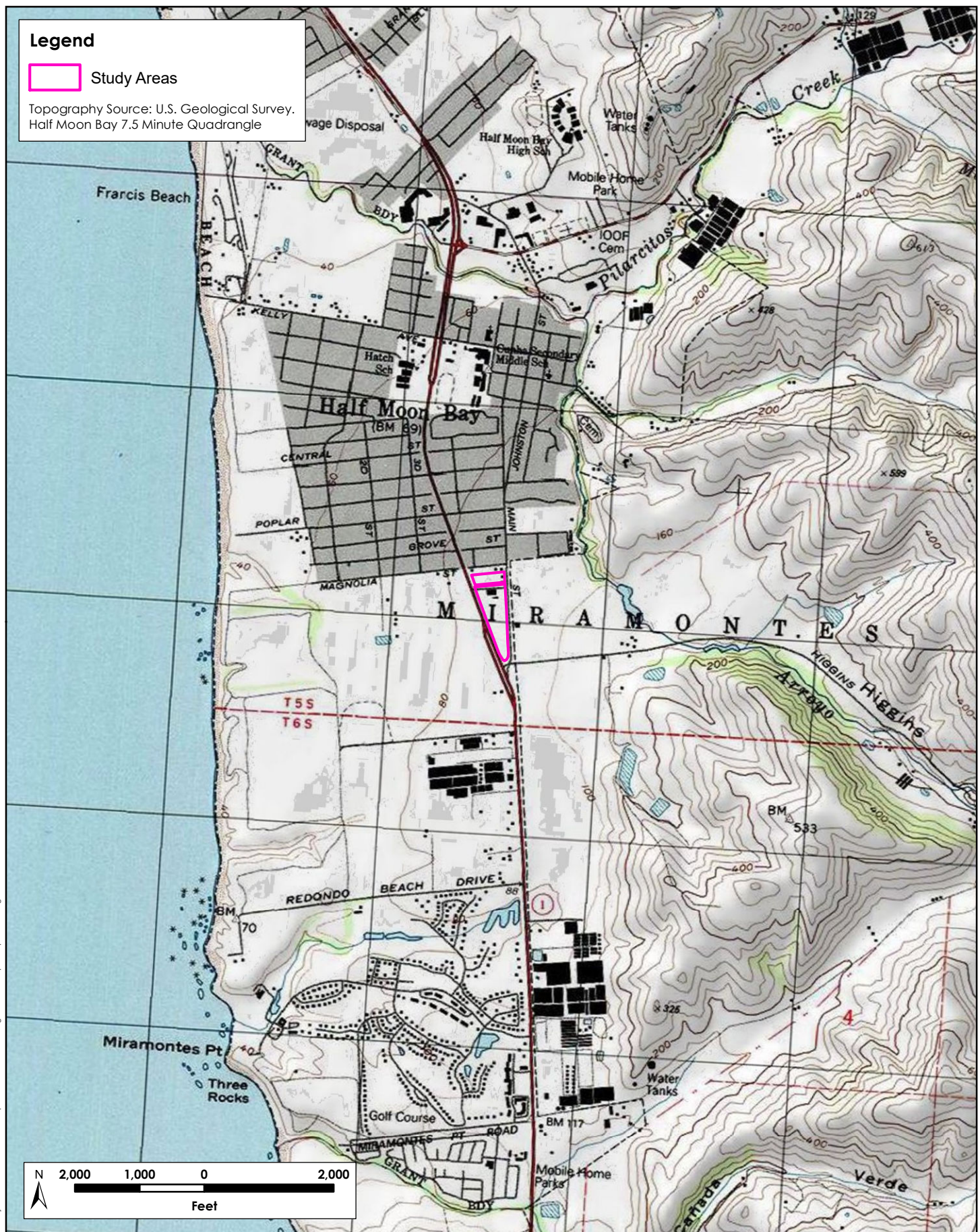
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H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 1. Vicinity Map
Half Moon Bay Hyatt Hotel Project
Biological Resources Technical Report Update (3328-15)
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1.3 General Site Conditions

During the 2017 and 2021 field surveys, H. T. Harvey & Associates observed three biotic habitats in the study area: (1) landscaped/developed, (2) ruderal grassland, and (3) seasonal wetlands (Figure 4). These results differed from the vegetation mapping provided by CRB and Biosearch Associates (2013) and SWCA (2016) for the portion of the original study area located south of the existing car dealership. Detailed descriptions are provided below.

Landscaped/developed areas (3.72 ac) include the James Ford Car Dealership, and in the new study area, a parking lot and residential housing. In addition, this habitat type includes a strip of crimson bottlebrush trees (*Callistemon citrinus*) along the eastern border of the original study area and some to the west of the northwestern-most residential house along Cabrillo Highway.

Ruderal grasslands (5.83 ac) occur throughout the majority of the original study area and are characterized by undeveloped land that has been intermittently mowed, disked, and row-cropped, or most recently, left fallow. Active agricultural practices have not occurred at the site since 2013, according to aerial images from Google Earth Pro software (Google LLC. 2022), therefore this area was not mapped as Agricultural as this is no longer the active land use. The western portion of the ruderal grassland in both the original and new portions of the study area contains mesic areas that are dominated by the facultative wetland species Italian ryegrass (*Festuca perennis*), bristly ox-tongue (*Helminthotheca echioides*). The eastern portion of the ruderal grassland in the original study area is drier and dominated by wild radish (*Raphanus sativus*) and wild oats (*Avena* sp.).

Four seasonal wetland features located on the western boundary of the original study area, and two seasonal wetland features along the western boundary of the new study area, totaling 0.12 ac, were determined to meet the USACE three-parameter criteria for wetlands under Section 404 of the Clean Water Act (Figure 4). Each feature supported hydrophytic (water-loving) vegetation, occurred in depressions, and exhibited wetland hydrology indicators. Soils were determined to be problematic across the study area as a result of intermittent



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Figure 4. Habitat and Wetland Buffer Map
Half Moon Bay Hyatt Hotel Project
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disking, and thus hydric soil indicators such as soil color mottling were not observed nor discounted in these depressional areas, but as mentioned above, the Botella soil map unit is considered hydric when occurring in depressions, as seen in both study areas.

In addition to these six seasonal wetlands, the CCC may claim more areas within the ruderal grasslands as “one-parameter wetland” features (H. T. Harvey & Associates 2017), due to the presence of facultative hydrophytic vegetation, or vegetation that sometimes occurs in wetlands and sometimes does not. Two patches of willow dock (*Rumex transitorius*), a facultative-wetland species, were noted in the original study area as were other weedy, non-native facultative plants, such as Italian ryegrass, bristly ox-tongue, and poison hemlock (*Conium maculatum*). One-parameter wetlands can support mildly to strongly hydrophytic vegetation but are not required to exhibit indicators of hydric soils and/or wetland hydrology or geomorphic positions that would support prolonged inundation as defined by the CCC. However, in this case, these facultative plant stands do not occur in depressions, are widespread over the site in upland landscape positions, and the density and extent of such species on the site may have been exacerbated by the unusually heavy rains in the 2016-2017 rain year, as these stands were not described, mapped, or called out as Environmentally Sensitive Habitat Areas (ESHAs) by the prior studies, including the SWCA’s 2016 study which also occurred several years after cessation of intensive agricultural activities. Subject to concurrence from the CCC, we find these areas do not act as actual one-parameter wetlands and should not be considered Environmentally Sensitive Habitat Areas. In 2021 after several drier years, these occasional wetland species were even less prevalent within the eastern portion of the original study area or the upland grassy portions of the new study area.

The biotic resources technical study and report prepared by CRB and Biosearch Associates in November 2013 and SCWA in June 2016 mapped beach strawberry (*Fragaria chiloensis*) in the southern portion of the site near the statue and trail. This species was not observed in the study area during any of the site visits in 2017 or 2021. However, it should be noted that the area immediately surrounding the statue had been mowed during the spring of 2017. The 1993 LCLUP considered wild strawberry to be a Unique Species, but the more recent 2020 LCLUP does not. The City of Half Moon Bay Zoning Code § 18.38 also considers wild strawberry habitat a Coastal Resource; however, § 18.38.030 defines wild strawberry habitat as “any undeveloped areas within ½ mile of the coast”. Because this strawberry population is beyond 0.5 mi of the coast, these populations are not considered a Unique Species or as a Coastal Resource, as defined by § 18.38.030.

Wildlife use of grasslands on the project site is limited by human disturbance, the small extent of the ruderal grassland areas, and the isolation of these habitat remnants from more extensive grasslands. As a result, some of the wildlife species associated with extensive grasslands in the Half Moon Bay area, such as the grasshopper sparrow (*Ammodramus savannarum*), are absent from the area of grassland habitat on the project site. Many of the species that occur in grasslands on the site are primarily associated with adjacent urban areas, such as the on-site car dealership and residential areas, and use grasslands on the site for foraging. These include the house finch (*Haemorhous mexicanus*) and purple finch (*Haemorhous purpureus*), which forage on seeds in ruderal areas, and the black phoebe (*Sayornis nigricans*) and Mexican free-tailed bat (*Tadarida brasiliensis*), which forage aerially over ruderal habitats for insects. An active nest of native Anna’s hummingbirds (*Calypte anna*) was observed in a Monterey

cypress (*Cupressus macrocarpa*) tree on the site during the May 2017 reconnaissance-level survey. Native Brewer's blackbirds (*Euphagus cyanocephalus*) and nonnative Eurasian collared-doves (*Streptopelia decaocto*) and house sparrows (*Passer domesticus*) were also observed on the site; these species will forage throughout developed and grassland areas, and some bird species may nest in bottlebrush (*Callistemon* sp.) trees along the eastern boundary of the site.

California ground squirrels (*Spermophilus beecheyi*) were not observed on the project site during the survey. However, numerous burrows of Botta's pocket gophers (*Thomomys bottae*) were present on the site in both years, especially along the original study area's eastern edge. Other rodent species that can potentially occur in the ruderal grassland habitat on the site include the California vole (*Microtus californicus*) and deer mouse (*Peromyscus maniculatus*). Diurnal raptors such as red-tailed hawks (*Buteo jamaicensis*) forage for these small mammals over grasslands during the day, and at night nocturnal raptors, such as barn owls (*Tyto alba*), will forage for nocturnal rodents, such as deer mice.

Mammals such as the native striped skunk (*Mephitis mephitis*) and raccoon (*Procyon lotor*) and nonnative Virginia opossum (*Didelphis virginiana*) and feral cat (*Felis catus*) use the project site for foraging. Reptiles such as western fence lizards (*Sceloporus occidentalis*), western skinks (*Plestiodon skiltonianus*), western terrestrial garter snakes (*Thamnophis elegans*), and southern alligator lizards (*Elgaria multicarinata*) frequent grassland habitats, and may occur in grassland habitats or adjacent developed habitats on the project site.

1.4 Special-Status Plants

For purposes of this analysis, "special-status" plants are considered plant species that are:

- Listed under Federal Endangered Species Act as threatened, endangered (FE), proposed threatened, proposed endangered, or a candidate species.
- Listed under California Endangered Species Act as threatened, endangered (SE), rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2A, 2B, 3, or 4.
- Listed in the Half Moon Bay Local Coastal Program Land Use Plan (2020).

The two previous studies concluded that the project site does not provide suitable habitat for the majority of special-status plant species in the region, including the Choris' popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*, CRPR 1B.2) and Kellogg's horkelia (*Horkelia cuneata* spp. *sericea*, CRPR 1B.1), which are known from within 3 mi of the project site (CRB and Biosearch Associates 2013). Choris' popcorn flower has a bloom period from March through June, and Kellogg's horkelia blooms from February through July (Calflora 2022). Other rare plant species listed by CRB and Biosearch Associates as having some potential to occur on the site included marsh microseris (*Microseris paludosa*, CRPR 1B.2, blooming April – June), Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*, CRPR 4.2, blooming from June – October), and Hickman's cinquefoil (*Potentilla hickmannii*, FE, SE, CRPR 1B.1). Additionally, we find that Johnny-nip (*Castilleja ambigua* var. *ambigua*, CRPR 4.2, blooming March – August), coast iris (*Iris longipetala*, CRPR 4.2, blooms March – May), and Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*, CRPR 1B.1, blooms November – May) as discussed by SCWA (2016) have a low potential

for occurrence. No special-status plants were observed on the site during the field visits that were conducted as part of the prior biological assessments (CRB and Biosearch Associates 2013 and SCWA 2016).

We generally concur with the conclusions of the previous reports, including Appendix A of the CRB and Biosearch Associates (2013) report and the additional species listed in the SCWA (2016) report regarding the potential for occurrence of special-status plant species. We also find that the site does not provide suitable habitat for most regionally occurring species discussed in one or both prior reports, and only provides marginally suitable habitat for Choris' popcorn flower, marsh microseris, Gairdner's yampah, johnny-nip, coast iris, Ornduff's meadowfoam, and Hickman's cinquefoil. However, we also find Oregon polemonium (*Polemonium carneum*, CRPR 2B.2, blooms April - September) has some low potential to occur on site as well, in contrast to Appendix A of the CRB and Biosearch Associates (2013) report.

Therefore, H. T. Harvey & Associates' plant ecologist, Maya Goklany, M.S. conducted a focused rare plant survey for the eight species listed above on May 30, 2017 and June 27, 2017, with Jill Pastick, M.S. conducting the update survey on June 10, 2021. Due to the low likelihood of these species being present on the site, reference populations were not visited as part of these surveys. Focused special-status plant surveys represented a high level of effort and included one-two visits in each focal species' bloom period, but were not floristic in nature. The entire project site was traversed on-foot using intuitive east-west transects that were spaced at roughly 30-ft intervals. No special-status plants were observed on the site during the May and June 2017, or June 2021 focused rare plant surveys. Thus, we conclude that impacts to special-status plant species are not expected to occur from the proposed project activities. As such, additional measures, surveys, and/or compensatory mitigation would not be required.

1.5 Special-Status Wildlife

For purposes of this analysis, "special-status" animals are considered animal species that are:

- Listed under the Federal Endangered Species Act as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under the California Endangered Species Act as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFW as a California species of special concern.
- Listed in the California Fish and Game Code as fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515).

Descriptions of sensitive wildlife species that occur on the project site are provided in the previous biological assessments for the project (CRB and Biosearch Associates 2013, SWCA 2016). The western bumblebee (*Bombus occidentalis*), Allen's hummingbird (*Selasphorus sasin*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), and hoary bat (*Lasiurus cinereus*), considered special-status species in one or both of those reports, do not meet our definitions of "special-

status species” as defined above and would not typically be considered special-status species for California Environmental Quality Act (CEQA) assessments or project permitting. Thus, we do not address these species further.

The two previous studies concluded that the project site does not provide suitable habitat for the majority of special-status species in the region, including the Central California Coast steelhead (*Oncorhynchus mykiss*), San Francisco (a.k.a. “saltmarsh”) common yellowthroat (*Geothlypis trichas sinuosa*), and monarch butterfly (*Danaus plexippus*), which occur in the site vicinity (CRB and Biosearch Associates 2013, SWCA 2016). We concur with the conclusions of the previous reports regarding the absence of these species, and we do not address them further in this analysis.

The California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), nesting birds, and roosting bats are addressed in greater detail below because these species can potentially breed or occur on or immediately adjacent to the project site and/or may be significantly affected by development under the proposed project.

1.5.1 California Red-Legged Frog

The California red-legged frog is a federally threatened species and state species of special concern. The previous reports concluded that no suitable breeding habitat for California red-legged frogs occurs on the project site, but individuals can potentially occur as occasional transients, primarily at night during the rainy season.

Our background review did not identify any new records of California red-legged frogs in the site vicinity (CNDDDB 2022). The U.S. Fish and Wildlife Service (USFWS) considers 1.0 mile as the typical dispersal distance for the species (U.S. Fish and Wildlife Service 2010), and we confirmed that there are two known records of California red-legged frogs within 1.0 mile of the project site, including a record just across California State Route 1 from the site (CNDDDB 2022). In addition, we reviewed aerial imagery within 1.0 mile of the site and identified eight potential breeding ponds, as well as Arroyo Leon, where breeding populations of California red-legged frogs may be present. Barriers to dispersal between these known records of the species and potential breeding ponds include the City of Half Moon Bay and California State Route 1. However, these barriers are not insurmountable, and it is possible that individual California red-legged frogs may travel from known occurrences or potential breeding ponds to reach the project site.

The May 2017 reconnaissance-level survey did not detect any substantial changes in red-legged frog habitat on the site since the previous assessments in 2013 and 2016, and confirmed that no suitable breeding habitat for red-legged frogs occurs on or immediately adjacent to the site. This was confirmed during the 2021 surveys, as the wetlands within the new study are also do not provide suitable breeding habitat. Thus, based on our background review and field visit, we concur with the previous determinations that the site only provides potential dispersal habitat for California red-legged frogs in areas of ruderal grassland, and that the potential for red-legged frogs to occur on the project site is very low. Individuals inhabiting nearby areas can potentially disperse across the site, especially at night or during rain events.

The previous reports indicated that California red-legged frogs are only expected to disperse across the site at night during rain events. However, H. T. Harvey & Associates herpetologists have observed active California red-legged frogs in terrestrial areas during night surveys when no rain event was occurring or had recently occurred. In addition, California red-legged frogs have been documented moving short distances from water during the summer, and they will move longer distances from water following summer rain events (Bulger et al. 2003). Thus, in our opinion, there is some potential for California red-legged frogs to move onto the site during the dry season, especially as the site is located extremely close (i.e., across California State Route 1) to a known occurrence of the species.

1.5.1.1 Impacts and Mitigation

Due to the regional rarity of this species, project impacts on small numbers of individual California red-legged frogs would be considered significant under CEQA. Mitigation Measure 1 provided in the 2013 biotic assessment restricts ground disturbance to the dry season (i.e., May 1 through October 1) to avoid impacts on this species (CRB and Biosearch Associates 2013). In our opinion, the implementation of additional avoidance and minimization measures, provided as Mitigation Measures 5A–5E below, would likely be needed to avoid and minimize potential project-related impacts on the California red-legged frog due to the potential for individuals to move onto the site during the dry season.

Mitigation Measure 5A. Worker Environmental Awareness Program. Before any construction activities begin, a qualified biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and San Francisco garter snake and their habitats, the importance of these species, the general measures that are being implemented to conserve these species as they relate to the project, and the boundaries within which the project may be accomplished.

Measure 5B: Exclusion Barrier. A wildlife exclusion fence (WEF) will be installed prior to the initiation of construction activities to exclude California red-legged frogs and San Francisco garter snakes from the construction area. The WEF will consist of silt fencing, plywood, ERTEC fencing, or suitable material at least 36 inches in height that is buried 6 inches deep in the ground, or similar method, to prevent access under the fencing. [Note: the CRB and Biosearch Associates (2013) report recommended that no exclusion fencing be constructed because such fencing could direct California red-legged frogs onto Main Street or Highway 1, potentially subjecting them to vehicular mortality. However, if no exclusion fencing is constructed, then dispersing individuals could occur on the project site during construction, where they may seek refuge under equipment or construction materials, leading to a higher potential for project-related mortality, whereas individuals moving around the site may or may not suffer vehicular mortality if they are directed toward Main Street or Highway 1. Because the San Francisco garter snake is listed by the state of California as a fully protected species, so that no take from construction projects is allowable, it is our opinion that constructing a WEF around the project site prior to construction will best avoid the potential for project-related take of this species.]

Mitigation Measure 5C. Preconstruction Survey. A qualified biologist shall conduct a preconstruction survey of the work area within 48 hours of the initiation of project activities. If a California red-legged frog of any life stage or San Francisco garter snake is found, the animal will not be handled and will instead be allowed to leave the site on its own. If needed, the USFWS (and CDFW, if a San Francisco garter snake is found) will be contacted to request permission to relocate the individual or additional guidance on the disposition of the individual.

Mitigation Measure 5D. Biological Monitoring. A qualified biologist will remain on-site to monitor the installation of the WEF to ensure that no San Francisco garter snakes or California red-legged frogs are trapped within the construction area or harmed during installation. If an individual of these species is detected, any project activities that could result in harm to the individual will cease until the individual has moved out of the project site on its own. The USFWS will be contacted immediately if a California red-legged frog or San Francisco garter snake is found, and the CDFW will be contacted immediately if a San Francisco garter snake is found. If any individuals are killed or injured during project activities, the USFWS and/or CDFW, as appropriate, will be contacted within 24 hours.

Following the completion of the installation of the WEF, the biologist will train a dedicated member of the construction crew in the identification of the California red-legged frog and San Francisco garter snake, as well as appropriate protocols to follow if either of these species (or animals that may be one of these species) are detected on the site. This dedicated crew member will be responsible for checking the work area for these species prior to the start of construction each day, for inspecting any steep-walled holes or trenches for any animals that may inadvertently become trapped and/or injured, and for inspecting the integrity of the WEF each day and ensuring that any needed repairs are completed within 24 hours.

Mitigation Measure 5E. Prevention of Entrapment. To prevent the inadvertent entrapment of San Francisco garter snakes and California red-legged frogs, all excavated, steep-walled holes or trenches will be completely covered at the end of each work day with plywood or similar materials. If this is not possible, one or more escape ramps constructed of earth fill or wooden planks will be placed in the excavation. Before such holes or trenches are filled, they will be thoroughly inspected for any animals by the on-site biological monitor. If at any time a California red-legged frog or San Francisco garter snake is found trapped or injured in one of these holes, any project activities that could result in harm to the individual will cease until the individual has moved out of the project area on its own (a ramp allowing the individual to leave may need to be provided).

1.5.2 San Francisco Garter Snake

The San Francisco garter snake is federally listed as endangered, state listed as endangered, and a fully protected species under the California Fish and Game Code. Although the CRB and Biosearch Associates (2013) report concluded that this species had no potential for occurrence on the project site, the 2016 report prepared by SWCA concluded that San Francisco garter snakes can potentially disperse across the site on occasion, but the site does not provide high-quality habitat for this species.

Our background review did not identify any new records of San Francisco garter snakes in the site vicinity; however, records of this species are suppressed in the CNDDDB database (CNDDDB 2022). Nevertheless, San Francisco garter snakes are known to occur in the Half Moon Bay area, and this species utilizes the creeks and upland habitats in the area for movement and shelter. As described above for California red-legged frogs, barriers to dispersal in the area, such as the City of Half Moon Bay and California State Route 1, are not insurmountable, and it is possible that individual San Francisco garter snakes may travel from nearby populations to reach the project site.

The May 2017 reconnaissance-level survey did not detect any substantial changes in habitat on the site since the previous assessments in 2013 and 2016. We concur with the previous determination by SWCA (2016) that the site does not provide suitable breeding habitat for San Francisco garter snakes, and the potential for San Francisco garter snakes to occur on the project site is very low. However, the grassland habitat and drainage ditches in the study area provide marginal dispersal habitat for this species, and San Francisco garter snakes that inhabit ponds and streams nearby could potentially disperse across the project site. Because of the developed nature of the site and the low-quality habitat present, the species is expected to occur there only incidentally and in small numbers, if at all.

SWCA (2016) concluded that San Francisco garter snakes are only expected to disperse across the site when water is present in the on-site drainage ditches. However, San Francisco garter snakes are most active during the dry season between March and July (Freel and Giorni 1994), and the species has been documented moving several hundred yards from aquatic habitats to hibernate in upland small mammal burrows (USFWS 2007). Thus, there is some possibility that San Francisco garter snakes inhabiting nearby areas can disperse across the project site during times of year when no water is present, especially between March and July.

1.5.2.1 Impacts and Mitigation

Due to the regional rarity of this species, project impacts on small numbers of individual San Francisco garter snakes would be considered significant under CEQA. Mitigation Measure 4 provided in the 2016 report restricts ground disturbance to the dry season to avoid impacts on this species (SWCA 2016). In our opinion, the implementation of additional avoidance and minimization measures, provided as Mitigation Measures 5A–5E above, would likely be needed to avoid and minimize potential project-related impacts on the San Francisco garter snake due to the potential for individuals to move onto the site during the dry season.

1.5.3 Certain Common Native Birds that Nest on the Site

All native bird species that nest on the project site are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. The grassland habitat on the site provides suitable foraging habitat for several special-status bird species, such as the state fully protected white-tailed kite (*Elanus leucurus*) and tricolored blackbird (*Agelaius tricolor*), but these species are not expected to nest on the site due to a lack of suitable habitat and high levels of human disturbance, and thus would not be substantially affected by the project.

The May 2017 or June 2021 reconnaissance-level surveys did not detect any substantial changes in habitat on the site since the previous assessments in 2013 and 2016, and confirmed that the site provides suitable nesting habitat for several native protected bird species. An active nest of Anna's hummingbirds was observed in a Monterey cypress on the project site during the May 2017 reconnaissance-level survey. Native Brewer's blackbirds, house finches, and purple finches were also observed on the site during the May 2017 survey, and these species may nest in trees or structures on the site. A number of other common native bird species, such as the black phoebe and mourning dove (*Zenaida macroura*), may also nest on the site.

No existing nests of raptors (e.g., eagles, hawks, and owls) were observed on or within 300 feet of the site (i.e., close enough to the site that the nesting bird may potentially be disturbed by construction activities), and the trees on the site provide only very marginal habitat for nesting by raptors. An active nest of red-tailed hawks was present approximately 350 feet northwest of the site in a grove of eucalyptus (*Eucalyptus* sp.) trees. However, these birds are highly tolerant of existing levels of disturbance, including traffic along California State Route 1, and they are not expected to be disturbed by the proposed project.

Thus, based on our background review and field visit, it is our opinion that no special-status bird species (as we have defined them above) or raptors are expected to nest on the project site, but the site provides suitable habitat for several species of common nesting birds.

1.5.3.1 Impacts and Mitigation

The removal of vegetation supporting active nests may cause the direct loss of eggs or young, and construction-related activities near an active nest may cause adults to abandon their eggs or young. This type of impact would not be significant under CEQA, in our opinion, because of the local and regional abundances of the species that could potentially nest on the site and the low magnitude of the potential impact of development on these species (i.e., the project is expected to impact only a few pairs of these species, which is not a substantial impact to their regional populations). Therefore, we do not agree that Mitigation Measure 2 in the 2013 biotic assessment is necessary for CEQA purposes.

Nevertheless, Mitigation Measure 2 in the 2013 biotic assessment would help to minimize the potential for destruction or disturbance of active nests, which would be a violation of the MBTA and California Fish and Game Code. That measure includes a preconstruction survey for active nests within 30 days of the start of construction activities that occur during the nesting season (defined as February 1 through August 15) within 300 feet of the site and the establishment of non-disturbance buffer zones around any active nests in consultation with the CDFW. Because birds can construct new nests in a relatively short time period, we recommend that this survey be conducted no more than seven days prior to the initiation of construction activities if the applicant wishes to have more confidence in avoiding violations of the MBTA and California Fish and Game Code.

1.5.4 Roosting Common and Special-Status Bats

All bat species that occur on the project site are protected under the California Fish and Game Code. The previous reports identified potential roosting and foraging habitat for bat species, including the pallid bat (*Antrozous pallidus*), big free-tailed bat (*Nyctinomops macrotis*), and Townsend's big-eared bat (*Corynorhinus townsendii*), which are California species of special concern.

The pallid bat and Townsend's big-eared bat are known to occur in San Mateo County and can potentially roost in the site vicinity. Common species of bats, such as the Yuma myotis (*Myotis yumanensis*) and Mexican free-tailed bat (*Tadarida brasiliensis*) may also roost in the site vicinity. However, the big free-tailed bat requires large cliffs for roosting, and no suitable roosting habitat for this species occurs on the site or close enough to the site that this species could potentially be affected by the project.

Bats, especially special-status bats, are not expected to roost in the structures within the new study area or immediately north of the site while they are in-use due to high levels of human disturbance. In addition, these structures provide relatively low-quality roosting habitat for bats due to their flat roofs and lack of attics, and bats are unlikely to roost in these structures. In addition, no suitable cavities for roosting were observed in trees on the site during the May 2017 or June 2021 site visits. Thus, we concur with the previous determination that common and special-status bats would not roost in the trees within the project site or in the occupied structures adjacent to the site.

1.5.4.1 Impacts and Mitigation

Due to the rarity of the pallid bat and Townsend's big-eared bat, project impacts on small numbers of individuals of these species would be considered significant under CEQA. Project impacts on common bat species, such as the Yuma myotis or Mexican free-tailed bat, would only be considered significant under CEQA if a large colony (i.e., >100 individuals) were to be present in the adjacent buildings. The previous studies recommended that any disturbance of the existing adjacent structures should be preceded by a preconstruction survey for roosting bats. However since these structures are no longer part of the proposed project site and suitable roosting habitat is absent, project impacts to regional bat species are not expected to occur. In our opinion, potential project impacts on roosting bats would be less than significant under CEQA, and no mitigation measures are warranted.

1.6 Sensitive Natural Communities, Vegetation Alliances, and Habitats on the Project Site

For purposes of this analysis, "sensitive habitats" are considered areas that are:

1. Natural communities or vegetation alliances considered sensitive by CDFW (CDFW 2022);
2. Wetlands and waters that fall under the jurisdiction of the USACE through Section 404 of the Clean Water Act (CWA);

3. “Waters of the State” as regulated by the State Water Resources Control Board (SWRCB) or RWQCB under the State Water Quality Certification Program under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne);
4. Bed, bank, and channels, and associated riparian habitat under the jurisdiction of the CDFW under California Fish and Game Code Sections 1600-1616 and the Lake and Streambed Alteration Program; and
5. Environmentally Sensitive Habitat Areas (ESHAs) as defined by the Local Coastal Program Land Use Plan (2020).

The two previous studies by CRB and Biosearch Associates (2013) and SWCA (2016) concluded that the study area does not support sensitive habitats, but did conclude that wetlands found to be jurisdictional by either the USACE or CCC may be present and a delineation should be conducted. During the 2017 and 2021 field surveys, six seasonal wetlands meeting the USACE criteria for Section 404 wetlands were found along the western boundary of the study area (Figure 4). Though these may be old agricultural ditches constructed in uplands, they have persisted for some years and have developed wetlands likely to be considered jurisdictional by the USACE and CCC. Each feature exhibited wetland vegetation and wetland hydrology indicators that meet the USACE criteria for wetlands and would also be considered an ESHA by the Local Coastal Program. Soils were problematic due to past agricultural activities, but as previously mentioned, the study area is underlain by Botella clay loam, 0 to 2 percent slopes, nearly level. This soil type is considered hydric when it occurs in depressions (NRCS 2022). As such, the geomorphic position of areas colonized by hydrophytic vegetation was an important indicator of wetland hydrology used to determine the presence of these four seasonal wetlands. Moreover, these six features occur in an area that appears saturated in historical aerial imagery (C9) and surface soil cracks (B6) were noted at one sample location.

In addition to these six seasonal wetlands, the CCC may claim more areas within the ruderal grasslands as “one-parameter wetland” features. One-parameter wetlands can support mildly to strongly hydrophytic vegetation, but do not always exhibit indicators of hydric soils and/or wetland hydrology or geomorphic positions that would support prolonged inundation as defined by the CCC. However, our surveys documented that areas of facultative vegetation (i.e., vegetation that sometimes occurs in wetlands) in the areas mapped as ruderal grasslands were present based on any degree of increased hydrology compared to the surrounding upland species.

1.6.1 Impacts and Mitigation

Any new permanent structures are required to be placed outside of a 100-foot buffer from jurisdictional wetlands, as described in Chapter 6 of the LCLUP and City of Half Moon Bay Zoning Code §18.38.080. This buffer is illustrated in Figure 4. The LCLUP and the Zoning Code include equivalent buffer requirements. The project has been designed to avoid the wetlands in the original study area. A bike path is proposed just outside of a 25-foot buffer from the wetlands and a pedestrian path is proposed just within a 100-foot buffer. These are allowable uses within 100 feet of wetlands, as described in Chapter 6 of the LCLUP. The proposed structures for the hotel are designed to be constructed outside of the 100-foot wetland buffer.

Wetlands were documented within the new study area during the 2021 site visit. The existing features that are currently within 100-feet (i.e., roadway, residential housing, and parking lot) of these newly documented wetlands can be grandfathered in and would be allowed to remain in their existing conditions. However, the proposed dwelling units under the Reduced Alternative 2 in the new study area are currently designed to occur within the 100-foot wetland buffer. As proposed, the subdivision will result in a new parcel and located fully within the 100-foot buffer for wetlands which is inconsistent with Policy 6-57 Land Divisions of the 2020 LCLUP. This impact would be significant unless mitigated.

The following measures will reduce potential project impacts on wetlands under CEQA if features claimed by either the USACE or CCC will be impacted.

Mitigation Measure 6a: The subdivision plans for the reduced intensity alternative, Alternative 2, shall be revised to ensure that all of the resulting parcels can be developed without intrusion into the 100-foot wetland buffer so as to be consistent with Policy 6-57 Land Divisions of the 2020 LCLUP.

Mitigation Measure 6b. Avoid all wetlands to the extent feasible. All jurisdictional wetlands and ESHAs claimed by the CCC shall be avoided to the extent feasible. This includes direct loss and indirect water quality impacts that could occur due to adjacent development. During construction, suitable erosion control, sediment control, source control, treatment control, material management, and stormwater management measures would be used in conformance with the NPDES Statewide Construction General Permit (Order No. 2009-0009-DWQ). Additionally, the project will be designed to comply with the *California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit (MRP)* (Water Board Order No. R2-2009-0074). This will require that the project implement BMPs into the design that prevents stormwater runoff pollution, promotes infiltration, and holds/slows down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate the use of tree planters, grassy swales, bioretention and/or detention basins, among other factors. The site is already largely designed to preserve existing drainage characteristics, as seen by the placement of stormwater treatment basins near the area of the site where the seasonal wetlands occur. These basins shall be designed to drain to the avoided wetland area to preserve hydrological inputs from the site.

Mitigation Measure 6c. Compensate for lost wetlands by restoring avoided wetlands. If all jurisdictional wetland areas (as determined by site verification) cannot be avoided by the project, the project will restore avoided wetlands on-site at 2:1 by implementing a weed removal program in the avoided wetlands, which are dominated by weedy, non-native species such as pennyroyal (*Mentha pulegium*). A qualified restoration ecologist will develop a Wetland Restoration and Monitoring Plan, which will contain the following components (or as otherwise modified by regulatory agency permitting conditions):

1. Goal of the restoration (to increase wetland habitat functions and values by removing invasive species);
2. Restoration design:
 - Weed removal, control, and monitoring plan
 - Soil amendments and other site preparation elements as appropriate
 - Planting plan (to replace non-natives with native wetland species)

- Maintenance plan
 - Remedial measures/adaptive management
3. Monitoring plan, including final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.); at a minimum, success criteria will include restoration of native wetland vegetation and no more than 5% cover of non-native species, and provision of ecological functions and values equal to or exceeding those in the habitat that was impacted; and
 4. Contingency plan for mitigation elements that do not meet performance or final success criteria.

1.7 Wildlife Movement

The project site provides limited habitat for wildlife movement. Due to the density of development in the project region and the presence of busy roadways surrounding the site, there are currently no well-defined movement corridors for terrestrial species, such as mammals and reptiles, within or through the project site. Wildlife species may move through the area using cover and refugia as they find them available. However, most dispersal by wildlife species likely occurs along higher-quality habitats to the east (along the coast) and west (within areas of open space).

Due to its small size and the predominantly non-native vegetation that dominates the project site, the site does not provide high-quality habitat for migratory birds in comparison to more natural areas with native trees and vegetation to the east and west. Migratory birds flying over or along the coastline may use the site as a stopover site for refueling and deposition of fat reserves to continue migration, but they are expected to do so in small numbers due to the marginal habitat quality.

In summary, the project site is not a particularly important area for movement by wildlife, and it does not contain any high-quality corridors allowing dispersal of such animals through the City of Half Moon Bay. Thus, we concur with the previous determinations that the site does not provide a valuable movement corridor for wildlife.

1.7.1.1 Impacts and Mitigation

In our opinion, potential project impacts on wildlife movement corridors would be less than significant under CEQA, and no mitigation measures are warranted.

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**Half Moon Bay Hyatt Place Project
San Mateo County, California**

**Preliminary Delineation of
Waters of the U.S. and State (CZMA)**

Project #3328-15

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Revised August 8, 2017

Executive Summary

In May and June 2017, H. T. Harvey & Associates' plant ecologists performed a delineation of potentially jurisdictional waters on the Half Moon Bay Hyatt Hotel Project (project) site in Half Moon Bay, San Mateo County, California. The 7.78-acre (ac) study area, defined as the 5.04-ac project site and surrounding adjacent lands to cover potential indirect effects of the proposed project, was surveyed to identify waters of the U.S. that may be subject to regulation under the Clean Water Act (CWA), as administered by the U.S. Army Corps of Engineers (USACE). This report documents the findings of the preliminary delineation survey and forms part of a request to the USACE to verify the mapped extent and distribution of potentially jurisdictional waters of the U.S. Surveys were also conducted within the project boundaries for areas that meet the physical criteria of wetlands according to the California Coastal Commission (CCC). Wetlands found in the "coastal zone" are regulated under the California Coastal Act of 1976 and the federal Coastal Zone Management Act (CZMA), and are within jurisdiction of the CCC (CCC 2008). The on-site determination assumed that the study area was observed under normal circumstances, and results are based on the conditions present at the time of the survey.

Four seasonal wetland (SW) features (SW-1 through SW-4) occur within the study area totaling approximately 0.10 ac (Table ES-1) and were determined to meet the USACE criteria for Section 404 wetlands in addition to the one-parameter wetland definition administered by the CCC. Each feature supported hydrophytic vegetation and exhibited wetland hydrology indicators. Soils were determined to be problematic across the study area as a result of intermittent disking, and thus hydric soil indicators such as mottling were not observed, but the fact that these soils could still be hydric was not discounted in these depressional areas.

There were four other areas within the study area totaling approximately 2.19 ac supporting mildly hydrophytic vegetation that may be characterized by the CCC as one-parameter wetlands (Table ES-1). However, these four areas did not exhibit indicators of hydric soils and/or wetland hydrology and therefore are not considered jurisdictional under Section 404 of the CWA. They also did not occur in geomorphic positions that would support prolonged inundation during the growing season to meet the definition for wetland hydrology. Two of these four areas are characterized by patches of willow dock (*Rumex transitorius*), a facultative-wetland species, but did not occur in conjunction with any other indicators of wetlands such as saturation signatures on historical aerial imagery. The two other additional areas were dominated by vegetation with a facultative rating such as Italian ryegrass (*Festuca perennis*), bristly ox-tongue (*Helminthotheca echioides*), and poison hemlock (*Conium maculatum*), though these non-native species do not appear to be reacting to wetland hydrology and occur in upland positions across the site. We note that the 2016-2017 rain year provided above-normal rainfall totals that likely influenced the colonization of willow dock and the remaining species are as much indicators of disturbance and weed infestations as they are indicators of saturated or inundated conditions. Though these areas technically meet criteria for a single parameter, hydrophytic vegetation, it is our professional opinion that the applicant discuss these areas with the CCC to ultimately determine their jurisdiction under the CZMA, as based on available evidence we do not believe these areas are acting as true "one-parameter wetlands" or environmentally sensitive habitat areas.

As the majority of wetlands mapped as part of this survey occur along the western boundary of the project site, the acreages are reported for both the study area and project site in the table below for clarification.

Table ES-1. Summary of Potentially Jurisdictional Waters in the Study Area and Project Site

Potential Section 404 / USACE Jurisdiction	Study Area (ac)*	Project Site (ac)*
Section 404 wetlands	0.10	0.05
Section 404 other waters	0.00	0.00
Total of potential Section 404 / USACE Jurisdiction	0.10	0.05
Potential CCC Jurisdiction (Hydrophytic Vegetation)		
Italian ryegrass / bristly ox-tongue (FAC)**	2.03	1.23
Poison hemlock (FAC)	<0.01	0.00
Willow Dock (FACW)***	0.06	0.06
Total of potential CCC jurisdiction (includes acreage of USACE wetlands)	2.19	1.34
Non-jurisdictional Uplands	5.59	3.70
Total	7.78	5.04

*Study area includes areas adjacent to project site to cover possible indirect effects of the proposed project. Project Site includes the boundaries of the proposed project. Values are subject to rounding errors.

**FAC = Facultative Vegetation

***FACW = Facultative Wetland Vegetation

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Section 1. Introduction

In June 2017, H. T. Harvey & Associates' plant ecologists performed a delineation of potentially jurisdictional waters on the Half Moon Bay Hyatt Hotel Project (project) site in Half Moon Bay, San Mateo County, California. The 7.78-acre (ac) study area, defined as the 5.04-ac project site and surrounding adjacent lands to cover potential indirect effects of the proposed project, was surveyed to identify wetlands and other waters of the U.S. that may be subject to regulation under the Clean Water Act (CWA), as administered by the U.S. Army Corps of Engineers (USACE). This report documents the findings of the preliminary delineation survey and forms part of a request to the USACE to verify the mapped extent and distribution of potentially jurisdictional waters of the U.S. Surveys were also conducted within the project boundaries for areas that meet the physical criteria of wetlands according to the California Coastal Commission (CCC). Wetlands found in the "coastal zone" are regulated under the California Coastal Act of 1976 (CCA) and the federal Coastal Zone Management Act (CZMA), and are within jurisdiction of the CCC (CCC 2008).

1.1 Study Area Description

The 7.78-ac study area, defined by the 5.04-ac project site and surrounding adjacent lands to cover potential indirect effects of the proposed project, is located in the city of Half Moon Bay (City) (Figures 1 and 2). The study area occurs within the *Half Moon Bay* U.S. Geological Survey (USGS) 7.5 minute quadrangle (Figure 3), and is part of the San Francisco South watershed (HUC 18050006). It is approximately 0.33 mile (mi) west of Arroyo Leon, the nearest blue line watercourse (Figure 2), and 0.75 mi from the shoreline of the Pacific Ocean. The James Ford Car Dealership is adjacent to the northernmost portion of the project site, with two associated buildings and a large asphalt parking area. The project site is currently undeveloped agricultural land that is intermittently mowed, disked, and row-cropped. The site is bounded on the west by Highway 1, and to the east by Main Street. It is situated on the southern edge of existing urban development; and is surrounded by residential neighborhoods, businesses, and agricultural land. The site is a relatively flat, alluvial floodplain with an elevation that ranges from 90 to 95 feet (ft) Earth Gravitational Model of 1996 (EGM96) (Figure 2 and Google Inc. 2017).

The 30-year climate normals for the project vicinity indicate that the site receives approximately 29.16 inches of annual rainfall with the majority occurring from October through May. Temperature ranges from 48 to 64 degrees Fahrenheit. From September 2016 to June 2017, approximately 41.56 inches of precipitation occurred at the site, and thus the most recent rainy season was wetter-than-average (143 percent of normal). The site had received 0.30 inches of rainfall in May 2017 just prior to the May site visit, and 0.22 inches in June 2017 prior to the June site visit.

One soil type is mapped within the site: Botella clay loam, 0 to 2 percent slopes, nearly level (Figure 4, Table 1). This soil type is well-drained and is formed from material washed from sedimentary rocks. It typically occurs in small alluvial valleys and on gently sloping benches, terraces, and fans (SCS 1961). Soils within the Botella

Botella series are considered hydric when occurring in depressions (NRCS 2017a). However, they are not considered hydric when occurring on level terrain (NRCS 2017b).

Table 1. Soil Type, Texture, Drainage Classification, and Hydric Soil Status for the Soil Type Occurring on the Study Area

Soil Symbol	Soil Name	Soil Texture	Drainage Classification	Hydric?
BcA	Botella clay loam, 0 to 2 percent slopes, nearly level	Clay loam	Well-drained	Yes, when found in depressions

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) does not identify any wetland/aquatic features in the study area (Figure 5). It does identify a freshwater emergent wetland approximately 0.30 mi to the west in an agricultural field on the opposite side of Highway 1. In addition, it identifies both freshwater forested/shrub wetland and freshwater pond approximately 0.25 mi to the east within- and immediately adjacent to the Arroyo Leon stream channel.

1.2 Project Description

The project applicant proposes to construct a 3-story, 143-room hotel, including 3,500 square feet (sq. ft.) of conference room space, 44,000 sq. ft. area of open space, an informational kiosk, and 198 parking spaces on the 5.04 ac project site.

1.3 Survey Purpose

In May and June 2017, H. T. Harvey & Associates' plant ecologists performed a delineation of potentially jurisdictional waters on the study area¹. The purpose of the survey was to identify and map waters of the U.S. that may be subject to regulation under the Clean Water Act, as administered by the USACE, and areas that meet the physical criteria of "one-parameter wetlands" according to the CCC.

¹ The project site was in a generally undisturbed state prior to the May and June 2017 surveys. The project site was not disturbed in the year before the surveys. This compares to the two previous studies where the project site had been disturbed prior to the respective 2013 and 2016 field visits.



N:\Proposals\18783\Reports\ID of Waters\Fig 1 Vicinity Map.mxd swatt



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Figure 1. Vicinity Map

Half Moon Bay Hyatt

Preliminary Identification of Waters of the U.S. and State (3328-15)

August 2017



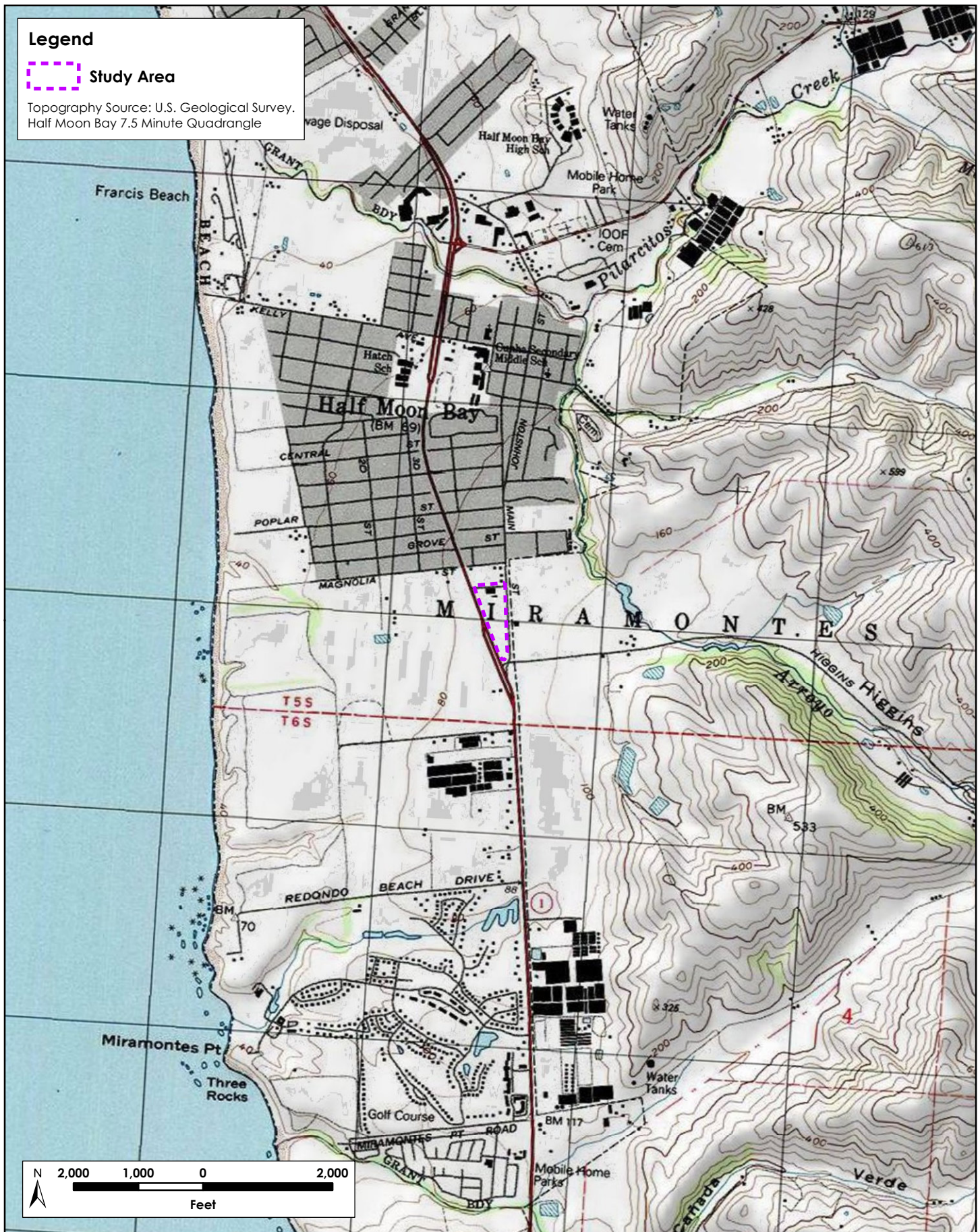
N:\Proposals\18783\Reports\ID of Waters\Fig 2 Project Site and Aerial Photograph.mxd



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Figure 2. Project Site and Aerial Photo

Half Moon Bay Hyatt
Preliminary Identification of Waters of the U.S. and State (3328-15)
August 2017



N:\Proposals\18783\Reports\ID of Waters\Fig 3 USGS Topo Map.mxd swatt



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Figure 3. USGS Topographic Map

Half Moon Bay Hyatt

Preliminary Identification of Waters of the U.S. and State (3328-15)

August 2017

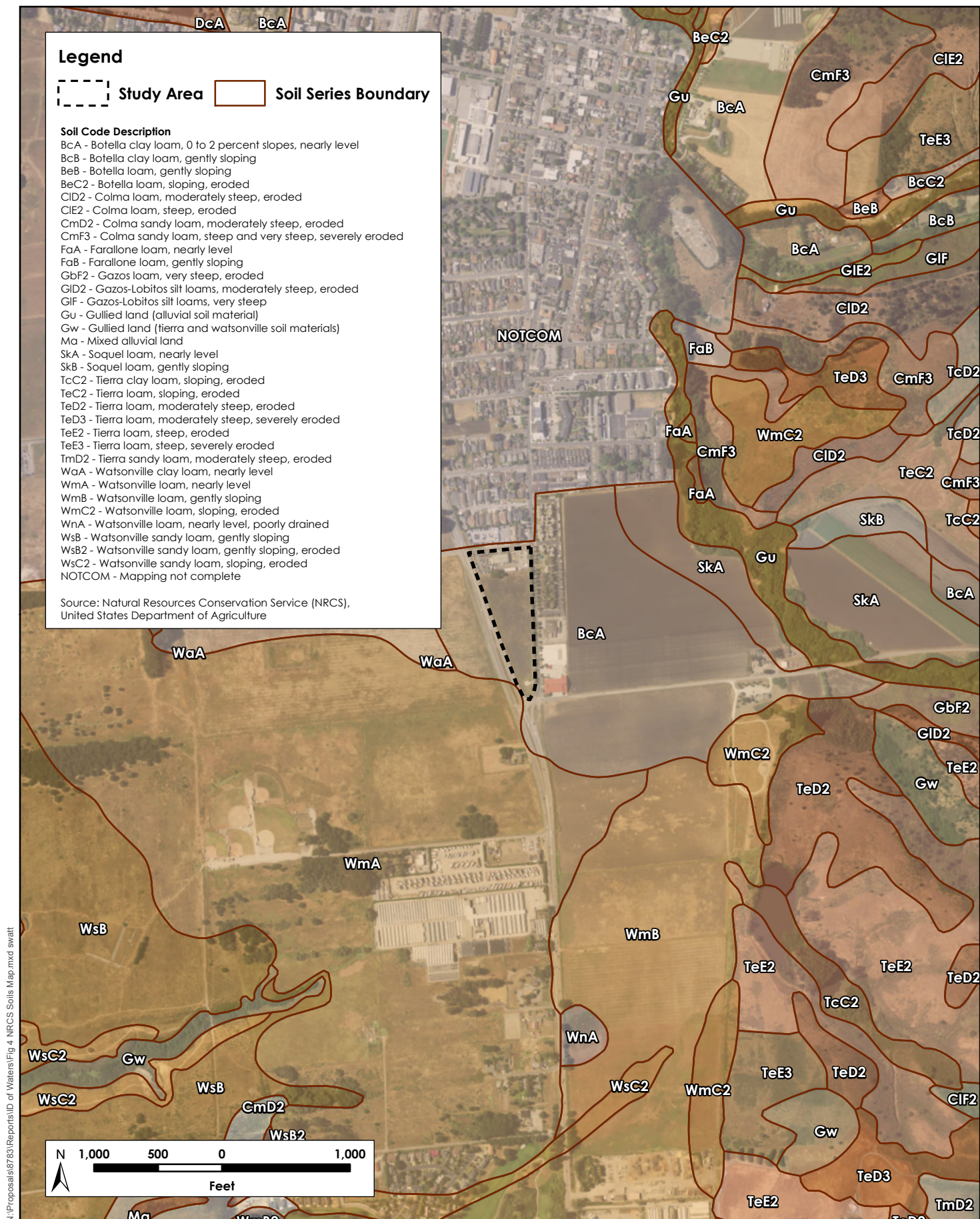


Figure 4. National Resources Conservation Service (NRCS) Soils Map

Half Moon Bay Hyatt

Preliminary Identification of Waters of the U.S. and State (3328-15)

August 2017



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Section 2. Survey Methods

On May 30, and June 13 and 27, 2017, H. T. Harvey & Associates plant ecologists, Maya Goklany, M.S., and Matthew Mosher, B.S. performed a technical delineation of wetlands and other waters in the study area, in accordance with the *Corps of Engineers 1987 Wetlands Delineation Manual* (Corps Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (Regional Supplement) (USACE 2010a). Due to the above-average rainfall during the 2016/2017 wet season (PRISM 2017), it was determined that soils and hydrology in the site would more closely resemble “normal” conditions if the site was given several weeks to dry down from spring rains before conducting a formal delineation.

The purpose of the delineation survey was to identify the extent and distribution of wetlands and other waters of the U.S. that may be subject to regulation by USACE. The study area was covered on foot to locate all potential features. Data points were mapped using a submeter Global Positioning System (GPS). Below are descriptions of the methods used to identify Section 404 jurisdictional waters (wetlands and other waters) as well as potential one-parameter wetlands that may be claimed by the CCC.

2.1 Identification of Jurisdictional Waters

Generally, surveyors examining the vegetation, soils, and hydrology of an area use the “Routine Determination Method, On-Site Inspection Necessary (Section D)” outlined in the Corps Manual (Environmental Laboratory 1987), and the updated data forms, vegetation sampling methods, and hydric soil and hydrology indicators developed for the Regional Supplement (USACE 2010a). This three-parameter approach to identifying wetlands is based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology.

In addition to applying these survey methods, ecologists compiled this report in accordance with guidance provided in *Updated Map and Drawing Standards for the South Pacific Regulatory Division Regulatory Program* (USACE 2016a) and *Information Needed for Verification of Corps Jurisdiction* (USACE 2016b). These documents list the information that must be submitted as part of a request for a jurisdictional determination, namely: a locality map (Figure 1); aerial photo (Figure 2); USGS quadrangle sheets (Figure 3); soils map (Figure 4); National Wetlands Inventory map (Figure 5); site map (see Figure 6 in Section 3); plant species observed (Appendix A); a copy of applicable sections of the current soil survey report (Appendix B); data forms for wetlands sample points (Appendix C) and other waters sample points (Appendix D); written rationale for sample point choice (Section 3.1, “Observations, Rationales, and Assumptions”); color photos (Appendix E); the aquatic resources table (Appendix F); and a signed statement from the property owner(s) allowing Corps personnel to enter the property and collect samples during normal business hours (Appendix G).

Before the June 2017 delineation survey was conducted, topographic maps and aerial photographs of the study area were obtained from several sources and reviewed. These sources included USGS, the NWI, and Google

Earth (Google 2017). During the survey, the study area was examined for topographic features, drainages, alterations to site hydrology or vegetation, and recent significant disturbance. A determination was then made as to whether normal environmental conditions were present at the time of the field survey. Paired sample point data were used to document which portions of the study area were wetlands.

In the field, the overall approach used to identify wetlands included digging soil pits to sample soil from various depths, observing the vegetation growing near the soil sample points, and characterizing the current surface and subsurface hydrologic features present near the sample points. Features meeting wetland vegetation, soil, and hydrology criteria were then mapped in the field. Using a Trimble GeoXT™ GPS unit (Trimble GPS unit) capable of submeter accuracy, the surveyor delineated the location of the sample site and boundary using GPS data capture techniques.

A brief overview of the USACE methods specifically applicable to the identification of jurisdictional wetlands and other waters in the study area is provided below.

2.2 Identification of Section 404 Jurisdictional Wetlands (Special Aquatic Sites)

Where wetland field characteristics were present, the surveyor examined vegetation, soils, and hydrology using the Routine Determination Method outlined in the Corps Manual (Environmental Laboratory 1987) and the updated data forms, vegetation sampling methods, and hydric soil and hydrology indicators developed for the Regional Supplement (USACE 2010a).

Vegetation. Plants observed at each of the sample points were identified to species, when possible, using *The Jepson Manual, Vascular Plants of California, Second Edition* (Jepson Manual) (Baldwin et al. 2012). The wetland indicator status of each species was obtained from the *National Wetland Plant List: 2016 Wetland Ratings* (NWPL) (Lichvar et al. 2016). The recent revision of plant names in the Jepson Manual has led to several differences in nomenclature between the latest Jepson Manual and the 2016 NWPL. In these cases, recognized synonyms were also searched for their indicator status. A list of species for each sample point was then compiled, and a visual estimate of the percent cover of plant species was made following guidance provided in the Regional Supplement. It was then determined which of the sample points supported wetland vegetation using the applicable indicator (i.e., 1-Dominance Test; 2-Prevalence Test; or 3-Morphological Adaptations), as described in the Regional Supplement.

Vascular plant species are designated according to their frequency of occurrence in wetlands; hence, hydrophytic species are categorized as wetland indicators. Indicator categories, symbols, and qualitative definitions are provided in Table 2.

Table 2. Wetland Indicator Status Categories for Vascular Plants

Indicator Category	Symbol	Frequency of Occurrence
Obligate	OBL	Almost always occurs in wetlands
Facultative wetland	FACW	Usually occurs in wetlands
Facultative	FAC	Occurs in wetlands and non-wetlands
Facultative upland	FACU	Usually occurs in non-wetlands, but may occur in wetlands
Upland	UPL	Almost never occurs in wetlands

Source: USACE 2016a.

Obligate and facultative wetland indicator species are hydrophytes that occur “in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present” (Environmental Laboratory 1987). Facultative indicator species may be considered wetland indicators when found growing in hydric soils that experience periodic saturation. Plant species that are not on the regional list of wetland indicator species are considered upland species. A complete list of the vascular plants observed in the study area, including their current indicator statuses, has been provided in Appendix A.

Soils. Where possible, the top 22 inches of the soil profile were examined for hydric soil indicators. Diagnostic features include numerous indicators defined and described by the National Technical Committee for Hydric Soils (NRCS 2016). These indicators include the presence of organic soils (Histosols, A1), histic epipedons (A2), depleted matrix (F3), redox depressions (F8), redox dark surface (F6), and mottling indicated by the presence of gleyed or bright spots of colors (in the former case, blue grays; in the latter case, orange red or red brown) within the soil horizons observed, among other features. Mottling of soils usually indicates poor aeration and lack of good drainage.

Munsell Soil Notations (Munsell 2009) were recorded for the soil matrix of each soil sample. The Munsell color system is based on three color dimensions: hue, value, and chroma. A brief description of each component of the system is described below, in the order they are used in describing soil color (i.e., hue/value/chroma):

1. **Hue.** The Munsell Soil Color Chart is divided into five principal hues: yellow (Y), green (G), purple (P), blue (B), and red (R), along with intermediate hues such as yellow-red (YR) and green-yellow (GY). Example of commonly encountered hue numbers include 2.5YR, 10YR, and 5Y.
2. **Value.** *Value* refers to lightness, ranging from white to grey to black. Common numerical values for value in the Munsell Soil Color Chart range from 2 for saturated soils to 8 for faded or light colors. Hydric soils often show low-value colors when soils have accumulated sufficient organic material to indicate development under wetland conditions, but can show high-value colors when iron depletion has occurred, removing color value from the soil matrix. Value numbers are commonly reported as 8/, 2.5/, and 6/.
3. **Chroma.** *Chroma* describes the purity of the color, from “true” or “pure” colors to “pastel” or “washed out” colors. Chromas commonly range from 1 to 8, but can be higher for gleys. Soil matrix chroma values

that are 1 or less, or 2 or less when mottling is present, are typical of soils that have developed under anaerobic conditions. Chroma numbers are listed, for example, as /1, /5, and /8.

The Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2017) was consulted to determine which soil types have been mapped in the study area (Table 1, Figure 4). Detailed descriptions of these soil types are provided in Appendix B.

Hydrology. Each of the sample points was examined for positive field indicators (primary and secondary) of wetland hydrology, following the guidance provided in the Regional Supplement. Such indicators might include visual observation of inundation (A1) or soil saturation (A3), watermarks (B1), drift lines (B3), water-borne sediment deposits (B2), water-stained leaves (B9), or drainage patterns within wetlands (B10).

2.3 Identification of Section 404 Jurisdictional Other Waters

Historically, in nontidal waters, USACE jurisdiction extends to the ordinary high water mark (OHWM), which is defined in Title 33, Code of Federal Regulations (CFR), Part 328.3, as “the line on the shore established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation or the presence of litter and debris.” This guidance is based on the identification of the OHWM through examination of physical evidence of surface flow in the stream channel; there is no hydrologic definition of the OHWM.

In addition, *Regulatory Guidance Letter 05-05* (dated December 7, 2005) deals specifically with the topic of OHWM identification (USACE 2005). That publication lists the following physical characteristics that should be considered when making an OHWM determination: (1) natural lines impressed on the bank; (2) shelving; (3) changes in the character of the soil; (4) destruction of terrestrial vegetation; (5) wracking; (6) vegetation matted down, bent, or absent; (7) sediment sorting; (8) disturbed or washed away leaf litter; (9) scour; (10) deposition; (11) multiple observed flow events; (12) bed and banks; (13) water staining; and (14) changes in the plant community.

Just as with the Corps Manual, development of the definition of the OHWM and description of the field indicators to be used were based primarily on environmental conditions present in areas of the U.S. with consistent annual rain distribution; such is the case for the majority of the Western Mountains, Valley, and Coast region. Channel geomorphology in these areas has responded by developing field characteristics that reflect a system in relative equilibrium, and precipitation events are more likely to cause the development of “ordinary” features commonly used by USACE in identifying the lateral extent of streams.

The study area is located in the southernmost portion of Western Mountains, Valley, and Coast region and thus has a higher degree of seasonal and interannual variability in precipitation, similar to that of the Arid West. USACE has refined its methods and indicators for delineating the OHWM in these two regions, and has published *A Field Guide to the Identification of the OHWM in the Arid West Region of the Western U.S.: A Delineation Manual* (Lichvar and McColley 2008), and *A Guide to OHWM Indicators in Non-Perennial Streams in the Western*

Mountains, Valley and Coast Region of the U.S. (Mersel and Lichvar 2014). The guidance provided in both of these publications was used in this study to determine the lateral extent of “other waters” by the presence of one or more natural geomorphic field indicators, taking into consideration such factors as size of watershed, channel slope, landscape setting, elevation, gradient, land use practices, and soil type. An Arid West data form was completed during the delineation survey to document the results (USACE 2010b; Appendix D).

2.4 Identification of Coastal Zone Wetlands within CCC Jurisdiction

Surveys were also conducted within the project boundaries for areas that meet the physical criteria of wetlands according to the CCC, which are defined as land within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens. (Pub. Res. Code §30121). The CCC uses definitions similar to the federal government in defining wetland habitat. For purposes of implementing Section 404 of the federal Clean Water Act, the United States Environmental Protection Agency (EPA) and the USACE define wetlands as described above in Section 2.2. The USFWS uses a general definition from its wetlands classification system first published in 1979:

“Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water (Cowardin, et al. 1979). For purposes of this classification, wetlands must have 1 or more of the following 3 attributes: “(1) at least periodically, the land supports hydrophytes, (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.” (Cowardin, 1979) The USFWS definition includes, swamps; freshwater, brackish water, and saltwater marshes; bogs; vernal pools, periodically inundated saltflats; intertidal mudflats; wet meadows; wet pastures; springs and seeps; portions of lakes, ponds, rivers and streams; and all other areas which are periodically or permanently covered by shallow water, or dominated by hydrophytic vegetation, or in which the soils are predominantly hydric in nature.”

Both the CCC and the federal government (in the USFWS and the USACE) provide further specificity in their wetlands definitions to guide the process of wetlands delineation. The CCC’s regulations (California Code of Regulations Title 14 (14 CCR)) establish a **“one-parameter definition”** that only requires evidence of a single parameter to establish wetland conditions and accepts wetland determinations based on the presence of one parameter—wetland vegetation, wetland soils, or, under certain conditions, wetland hydrology (using the criteria described above, under the USACE methods, for each parameter), similar to the USFWS wetlands classification system. In contrast, the USACE generally uses a **three-parameter definition** for delineating wetlands. In the California coastal zone, the CCC, with the assistance of the California Department of Fish and Wildlife (CDFW), is responsible for determining the presence of wetlands subject to regulation under the CCC. The local government also has a direct role in the identification and delineation process in areas with a certified local coastal program. For wetland development projects requiring USACE review, the applicant may, in some

cases, need to obtain two delineation approvals, one for the coastal development permit, and another for the USACE Section 404 permit (CCC 2008).

The CCC delineation of wetlands in the field typically requires substantial evidence of indicators that can be easily observed or assayed. Wetlands typically occur on physical gradients (i.e., wet to dry conditions, hydric to nonhydric soils, and hydrophytic to meso/xerophytic vegetation). Delineations document boundaries between a predominance of hydrophytic vegetation and upland vegetation and boundaries between hydric and non-hydric soils. Because wetland delineation is not an exact science, the CCC recognizes the importance of professional judgement:

“Some wetlands may not be readily identifiable by simple means. In such cases, the CCC will also rely on the presence of hydrophytes and/or the presence of hydric soils. Thus, the presence or absence of hydrophytes and hydric soils make excellent physical parameters upon which to judge the existence of wetland habitat areas for the purposes of the Coastal Act, but they are not the sole criteria. In some cases, proper identification of wetlands will require the skills of a qualified professional.”

Resource and regulatory agencies have found it difficult to strictly define some wetlands because of the often transient hydrology, the absence of hydric soils, and the heterogeneous vegetation composition. Yet these areas exhibit many of the functions and values found in other wetlands. In the past, CCC staff has recognized some of these areas, including riparian areas, as “environmentally sensitive areas” within the meaning of Coastal Act §30107.5, and then regulated development through §30240. The semi-arid climate of California also presents problems for the identification and delineation of wetlands. Some wetlands in this part of California can remain dry for 1 or more seasons because of the Mediterranean climate typical of the state.

The CCC’s regulations acknowledge these distinctions by specifying some general decision rules for establishing the upland boundary of wetlands:

...the upland limit of a wetland shall be defined as:

- a. the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover;*
- b. the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or*
- c. in the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation, and land that is not. (14 CCR Section 13577)*

Therefore, additional scientific methods and guidance are required to facilitate the wetland delineation process in the field. A common source of guidance for wetland delineators is the 1987 USACE *Wetland Delineation Manual* and the *Regional Supplement*. Another important guidance document is the USFWS’s *List of Plant Species that Occur in Wetlands*. Similarly, guidance on the identification of hydric soils is provided by the Natural Resource Conservation Service in its *Field Indicators of Hydric Soils in the United States* (2006).

In a CCC delineation, the extent of both hydric soils and wetland vegetation should be determined and the wetland boundary drawn to coincide with that parameter that results in the larger wetland area. Where the presence of wetlands is difficult to determine because some field indicators appear ambiguous or unreliable, the CCC has occasionally, in past actions, considered strong evidence of upland conditions in making its wetland determination.

Section 3. Survey Results and Discussion

Prior to conducting fieldwork, HTH reviewed a variety of pertinent technical documents, including a prior Wetland Delineation (John Gilchrist & Associates 2004) and Biological Assessment (Coast Range Biological LLC 2013). HTH ecologists Matthew Mosher, B.S. and Maya Goklany, M.S. conducted the fieldwork for this evaluation. During the CCC delineation, the presence and frequency of hydrophytic vegetation and hydric soil indicators were used as the primary indicators for identifying potential wetland areas. The potential wetland areas were mapped onto a 1 inch: 400 ft scale aerial Photo base map of the project site (Figures 5 and 6). The current distribution of potential wetlands in the project site is shown in Figure 5.

Figure 6 depicts potential waters of the U.S. (seasonal wetlands) and non-jurisdictional uplands mapped in the study area and project site. Figure 7 depicts areas of hydrophytic vegetation occurring in the absence of other indicators of wetlands mapped in the study area for consideration by the CCC, which include all waters of the U.S. (seasonal wetlands), and additional areas colonized by mild or “facultative” hydrophytes and strongly hydrophytic, or “facultative-wetland” plants. Seven wetland data form sample points (SPs) were examined to identify Section 404 and one-parameter wetlands that may be claimed by the USACE and CCC, respectively (Figures 6 and 7, Appendix C). Since these features and other one-parameter wetlands mapped as part of this survey occur along the western boundary of the site, the acreages are reported for both the study area and project site in Table 3 below.

Table 3. Summary of Potentially Jurisdictional Waters in the Study Area and Project Site

Potential Section 404 / USACE Jurisdiction	Study Area (ac)*	Project Site (ac)*
Section 404 wetlands (SW-1 through SW-4)	0.10	0.05
Section 404 other waters	0.00	0.00
Total of potential Section 404 / USACE Jurisdiction	0.10	0.05
Potential CCC Jurisdiction (Hydrophytic Vegetation)		
Italian ryegrass / bristly ox-tongue (FAC)**	2.03	1.23
Poison hemlock (FAC)	<0.01	0.00
Willow Dock (FACW)***	0.06	0.06
Total of potential CCC jurisdiction (including USACE wetland acreage)	2.19	1.34
Non-jurisdictional Uplands	5.59	3.70
Total	7.78	5.04

*Study area includes areas adjacent to project site to cover possible indirect effects of the proposed project. Project Site includes the boundaries of the proposed project. Values are subject to rounding errors.

**FAC = Facultative Vegetation

***FACW = Facultative Wetland Vegetation



N:\Proposals\8783\Reports\ID of Waters\Fig 6 Preliminary ID of Waters of the U.S.mxd

Figure 6. Preliminary Identification of Waters of the U.S.

Half Moon Bay Hyatt

Preliminary Identification of Waters of the U.S. and State (3328-15)

August 2017



H. T. HARVEY & ASSOCIATES

Ecological Consultants



N:\Proposals\8783\Reports\ID of Waters\Fig 7 One-Parameter Wetlands.mxd

Figure 7. Areas Dominated by Hydrophytic Vegetation

Half Moon Bay Hyatt

Preliminary Identification of Waters of the U.S. and State (3328-15)

August 2017



H. T. HARVEY & ASSOCIATES

Ecological Consultants

The study area and project site contain potential Section 404 seasonal wetlands that support strongly hydrophytic vegetation, hydric soils (via map unit and landscape position), and wetland hydrology indicators. These areas appear saturated on aerial images during the rainy season (from October through May) from 2002 to 2017, support green vegetation well into the dry season (Google Inc. 2017 and Nationwide Environmental Title Research [NETR] 2017), and are situated in a geomorphic position (i.e., concave depressions) that hold water for a sufficient period of time on an annual basis to support hydrophytic vegetation. Soils throughout the study area were problematic as a result of intermittent disking, which mixes the upper soil profile, preventing distinct horizons and hydric characteristics from forming and breaking up redoximorphic indicators after they do form. This may be why hydric soil indicators as defined by the *Western Mountains, Valleys, and Coasts Manual* were not observed at any of the seven sample locations. Furthermore the study area is underlain by Botella clay loam, 0 to 2 percent slopes, nearly level (Figure 4), which is considered hydric only when found in depressions (NRCS 2017a). As such, the geomorphic position of areas colonized by hydrophytic vegetation was an important indicator of wetland hydrology used to determine the presence of Section 404 wetlands in the absence of hydric soil indicators (Figure 6).

In addition to the Section 404 wetlands described above, four additional areas were dominated by mildly hydrophytic vegetation (Figure 7), but did not occur in depressions or exhibit any other indicators of wetlands and therefore are not considered jurisdictional under Section 404 of the CWA. Though these technically meet one-parameter, in our opinion these still do not meet CCC wetland definitions due to the upland landscape position, the weedy, disturbance-loving vegetation present in most of these areas, the lack of indications of long term (at least 7 days per year) inundation or saturation at these locations, and the very wet growing season preceding this delineation, which likely allowed more mesic grassland vegetation to develop on site. These four mildly hydrophytic areas, which did not meet the USACE criteria for wetland hydrology or hydric soils, were observed on flat terrain that had been colonized by facultative and/or facultative-wetland plant species. Therefore based on this field evidence, it is our professional opinion that these areas are not acting as true “one-parameter wetlands” or environmentally sensitive habitat areas. This determination is subject to CCC concurrence.

Information assembled during this investigation and pertinent to the identification of jurisdictional wetlands and other waters is presented in the six appendices of this report. Please note, Appendix F has also been provided as an electronic attachment in Microsoft Excel format, per USACE (2016b) guidelines.

- Appendix A—Plants Observed in the Study Area
- Appendix B—Custom Soil Resource Report: San Mateo Area, California
- Appendix C—USACE Western Mountains, Valleys, and Coast Wetland Determination Data Forms
- Appendix D—Photographs of the Study Area
- Appendix E—Aquatic Resources Table
- Appendix F—Signed Statement from the Property Owner Allowing Access

3.1 Observations, Rationales, and Assumptions

Study area conditions observed during the delineation survey are reported here, along with pertinent background information and precipitation data.

Background Information

- The study area is approximately 0.33 mi west of Arroyo Leon, the nearest blue line watercourse (Figure 2), and 0.75 mi from the shoreline of the Pacific Ocean, the nearest traditionally navigable water. The seasonal wetlands and one-parameter wetlands in the site do not exhibit a direct surface connection to nearby streams and bodies of water, and furthermore, a high dry season water table was not observed at any of the seven sample locations. As such, these features are isolated and hydrology is fed by freshwater runoff from the surrounding areas and Section 404 other waters do not occur in the site.
- The Biological Assessment (Coast Range Biological LLC 2013) mapped a manmade roadside drainage ditch along the western edge of the study area. At the time of the field work conducted as part of the 2013 study, this ditch was “undefined” south of the James Ford Car Dealership, and included several irregular-shaped closed depressions. Section 404 wetlands (SW1-SW4, Figure 6) were mapped within these concave depressions. These features likely collect water that moves westward across the study area as sheet flow, in addition to run off from Highway 1. Additional details regarding the hydrology of these features and the ditch are discussed below.
- Based on a review of historical aerial images (Google Inc. 2017, NETR 2017), the study area has been primarily used for agriculture since the 1940s and has been intermittently disked and row-cropped. Aerial images from Google Inc. (2017) and photographs from the field work that was conducted as part of the Biological Assessment (Coast Range Biological LLC 2013) indicate that the study area was disked as recently as 2013. Circa 1956, Highway 1 and a linear roadside ditch were constructed along the western edge of the study area. In historical aerial images from NETR (2017), the alignment of the ditch appears to roughly follow the western boundary of the project site. Currently, a 25-ft wide Caltrans right-of-way buffers the project site from Highway 1. The ditch does not appear to have been maintained in the last decade and has been colonized by both native and nonnative vegetation, thus developing wetland characteristics. While the practice of disking has slightly removed the topographic distinction of the feature, it can still be identified on-the-ground as a concave depression. The ditch does not appear to replace any historical watercourses, and was likely constructed to collect runoff from the adjacent roadway. While it is unclear in historical aerial images as to whether this feature has supported wetlands in the past, strongly hydrophytic plants have colonized portions of the former ditch, and Section 404 wetlands (SW1-SW4, Figure 6) were mapped along its alignment. Typically, the USACE does not claim ditches constructed in uplands that do not replace natural features, until such time as the ditches are left unmaintained for a long enough period to have developed wetlands.
- The delineation survey was performed using the “Routine Method of Determination” using three parameters, as outlined in the Corps Manual and the Western Mountains, Valley, and Coast Regional

Supplement. As previously mentioned, soils in the study area and project site were problematic as a result of intermittent disking, which mixes the upper soil profile, preventing distinct horizons and hydric characteristics from forming. As such, hydric soil indicators were not observed at any of the seven sample locations, including the clearly wettest areas on site supporting obligate (OBL) wetland vegetation such as pennyroyal (Appendix C).

Precipitation Data

- The 30-year climate normals for the project vicinity indicate that the site receives approximately 29.16 inches of annual rainfall with the majority occurring from October through May. Temperature ranges from 48 to 64 degrees Fahrenheit. From September 2016 to June 2017, approximately 41.56 inches of precipitation occurred at the site, and thus the winter was wetter-than-average (143 percent of normal). The site had received 0.30 inches of rainfall during May 2017, and 0.22 inches in the week prior to the June 13, 2017 site visit.
- This preliminary delineation assumes that normal circumstances prevailed at the time of the June 2017 survey, and results are based upon the conditions present. Prior to the delineation survey, Ms. Goklany visited the site on May 30, 2017 to conduct a reconnaissance survey. Due to the above-average rainfall during the 2016/2017 wet season (PRISM 2017), it was determined that soils and hydrology in the site would more closely resemble “normal” conditions if the site was given several weeks to dry down before conducting a formal delineation. Moreover, postponing the delineation survey to a later date was necessary to allow vegetation to produce the flowers and fruits that are often necessary for identification of plants to the species taxonomic level.

Site Conditions and Observations

- Ponded water was observed in the four 3-parameter seasonal wetlands during the May 30, 2017 site visit. Also at this time, the western portion of the project site where Italian ryegrass is dominant was slightly more moist than the surrounding areas, but was not saturated or inundated in any locations. The willow dock areas exhibited no difference in soil moisture from surrounding upland areas in May of 2017.
- The June 13, 2017 delineation survey was conducted after the study area had several weeks of time to dry down following heavy rains in the winter and spring of 2016/2017. Surface water was not evident in any location in the study area at this time. The majority of plants were mature and flowering, and were identifiable to species.
- At the time of the survey, the Caltrans right-of-way between Highway 1 and the western boundary of the project site had been mowed, in addition to the area surrounding the trail and statue at the southern end of the study area. The landowner held off mowing in the rest of the project site before the completion of the wetland delineation survey to allow vegetation to mature and flower.
- The site is a relatively flat, alluvial floodplain with an elevation that ranges from 90 to 95 ft EGM96 (Figure 2 and Google Inc. 2017).

- One soil type is found in the study area: Botella clay loam, 0 to 2 percent slopes (Figure 4). This soil type is well-drained and is formed from material washed from sedimentary rocks. It typically occurs in small alluvial valleys and on gently sloping benches, terraces, and fans (SCS 1961, also see Appendix B). It is not considered to be a hydric soil (NRCS 2017).
- The USFWS NWI does not identify any wetland/aquatic features in the study area (Figure 5). It does identify a freshwater emergent wetland approximately 0.30 miles to the west in an agricultural field on the opposite side of Highway 1. In addition, it identifies both freshwater forested/shrub wetland and freshwater pond approximately 0.25 miles to the east within- and immediately adjacent to the Arroyo Leon stream channel.
- Four seasonal wetland features (SW1-4, Figure 6) were determined to meet the USACE criteria for Section 404 wetlands. These features meet the USACE criteria for hydrophytic vegetation and wetland hydrology. Soil across the study area is relatively homogenous, likely as a result of intermittent disking. Soil color was recorded as 10 YR 3/1 and 10 YR 2/1, and texture was generally sandy clay or clay loam. Soil profiles ranged from slightly damp to very dry, and no horizons were evident at the sample locations. Redoximorphic hydric soil indicators were not observed at any of the sample locations.
- Seasonal wetlands would also be claimed by the CCC. In addition, the CCC will consider the hydrophytic vegetation areas depicted on Figure 7 to determine if these are one-parameter wetlands.
- The largest area of hydrophytic vegetation was co-dominated by Italian ryegrass (FAC) and bristly ox-tongue (FAC). Although bristly ox-tongue has a facultative rating in the Mountains, Valleys, and Coasts Region and Arid West Region, the rating in all other USACE Regions for this species is upland (UPL). Based on this species' weedy, disturbance-loving nature, we do not consider it a reliable plant for wetland determinations when occurring over a large, infested area as seen on this site.
- Two areas were only just dominated by willow dock (50% cover). The remaining vegetation in these areas was comprised of several upland species including ripgut brome (*Bromus diandrus*, UPL), wild oats (*Avena* sp., UPL), and wild radish (*Raphanus sativus*, UPL). These strongly upland species cumulatively providing an additional 37% cover, but each upland species individually fell short of the 20% of vegetation cover required to be considered a "dominant species". These areas therefore met the technical definition of hydrophytic vegetation using the USACE Dominance Test (Appendix C, SP7). However, the presence of so much strongly upland vegetation co-occurring with the facultative wetland species willow dock suggests that these areas do not have true wetland functions and values.

Rationale for Sample Point Choice

- SP1 was placed in uplands outside adjacent to SW-2 on a gentle slope leading down from Highway 1 (Figure 6, Appendix C). This location, near the western border of the project site and the Caltrans right-of-way, was dominated by bristly ox-tongue, a facultative species. Hydric soil and wetland hydrology indicators were not observed at this location.

- SP2 was placed on the edge of a concave depression that has been colonized by pennyroyal, an obligate species, to delineate the border of SW-2 (Figure 6, Appendix C). This transitional zone was co-dominated by bristly-ox tongue and Italian ryegrass (facultative species). SW-2 occurs along the former ditch that is visible in historical aerial images (Google Inc. 2017 and NETR 2017), as described above. This area appears saturated during the rainy season on aerial imagery from 2002 to 2017, and supports green vegetation well into the dry season (Google Inc. 2017 and NETR 2017). Surface water was observed in these features in May 2017. Further, though the features were dry in June of 2017, cracks in the surface soil were observed, indicating that surface water had recently been present here. In conclusion, SW-2 meets the USACE criteria for hydrophytic vegetation and primary/secondary wetland hydrology indicators for surface soil cracks (B6), geomorphic position (D2), and saturation visible on aerial imagery (C9).
- SP3 was placed within SW-3 to investigate a concave depression along the alignment of the former ditch (Figure 6, Appendix C). This area is dominated by bristly-ox tongue (FAC) and Italian ryegrass (FAC). Other facultative species, such as willow dock, velvet grass (*Holcus lanatus*, FAC), prostrate knotweed (*Polygonum aviculare*, FAC) and birdsfoot trefoil (*Lotus corniculatus*, FAC) occur here, in addition to a trace amount of annual rabbitsfoot grass (*Polypogon monspeliensis*, FACW). This area appears saturated during the rainy season on aerial imagery from 2002 to 2017, and supports green vegetation well into the dry season (Google Inc. 2017 and NETR 2017). SW-3 meets the USACE criteria for hydrophytic vegetation and secondary wetland hydrology indicators for geomorphic position (D2) and saturation visible on aerial imagery (C9). An additional wetland feature (SW-4) occurs to the south of this location, and supports a similar plant community and exhibits these same indicators of wetland hydrology.
- SP4 was placed within SW-1 to investigate a concave depression along the alignment of the former ditch (Figure 6, Appendix C). This area is dominated by Italian ryegrass. Other facultative species, such as bristly ox-tongue, curly willow dock, and velvet grass occur here, in addition to annual rabbitsfoot grass, which distinguishes SW-1 from the surrounding mesic grassland dominated by Italian ryegrass and bristly ox-tongue. This area appears saturated during the rainy season on aerial imagery from 2002 to 2017, and supports green vegetation well into the dry season (Google Inc. 2017 and NETR 2017). SW-1 meets the USACE criteria for hydrophytic vegetation and secondary wetland hydrology indicators for geomorphic position (D2) and saturation visible on aerial imagery (C9).
- SP5 and SP6 were placed in uplands adjacent to SW-1 on flat terrain (Figure 6, Appendix C). These areas were dominated by upland plants, such as wild radish (*Raphanus sativus*) and wild oats (*Avena* sp.). These locations do not appear saturated on aerial imagery from 2002 to 2017, in comparison to the western portion of the study area. Hydric soil and wetland hydrology indicators were not observed here.
- SP7 was placed on flat terrain in a patch of willow dock, a facultative wetland species (Figures 6 and 7, Appendix C). This location was chosen to examine the soil and hydrology of an area dominated by this moderately hydrophytic plant. Hydric soil and wetland hydrology indicators were not observed here and patches of willow dock occupying a similar landscape position in the eastern portion of the study area were determined to occur outside Section 404 and USACE jurisdiction.

Photo Points

- Photo point labels, coordinates, and rationale for the photo are include in Table 4.

Table 4. Coordinates and Rationale for Photo Points

Label	Lat, Long	Rationale
Photo_1-NW	37.45188128, -122.430445899	Upland sample location SP1
Photo_2-N	37.451887259, -122.430414235	Wetland sample location SP2
Photo_3-NW	37.451887259, -122.430414235	Near wetland sample location SP2, shows surface soil cracks (wetland hydrology indicator B6)
Photo_4-NW	37.451655724, -122.430257299	Wetland sampling location SP3
Photo_5-E	37.452296145, -122.430575133	Wetland sampling location SP4
Photo_6-W	37.452312554, -122.430385971	Upland sample location SP5
Photo_7-E	37.452343318, -122.430196085	Upland sample location SP6
Photo_8-NA	37.453020534, -122.430476124	Comparison of soil from upland sample location SP7 and SW-1
Photo_9-NA	36.910470702, -121.770759226	Upland sample location SP7 with willow dock
Photo_10-N	37.451111999, -122.429992999	Uplands with poison hemlock
Photo_11-W	37.450924999, -122.429555999	Uplands with mowed area and developed trail

3.2 Areas Meeting the Regulatory Definition of Jurisdictional Waters

3.2.1 Identification of Section 404 Potentially Jurisdictional Wetlands (Special Aquatic Sites)

Four seasonal wetland features (SW1-SW4, Figure 6) were determined to meet the USACE criteria for Section 404 wetlands. Three sample locations (SP2, SP3, and SP4; Figure 6) were placed in wetlands. A summary of the wetland data form results is presented in Table 5. The data are also presented on the complete forms in Appendix C. Each of these features occur along the alignment of the former ditch and straddle the western project boundary. While the majority of the western half of the study area was dominated by mildly hydrophytic, or facultative plants (such as Italian ryegrass and bristly ox-tongue), more strongly hydrophytic plants occur in seasonal wetlands, such as annual rabbitsfoot grass (FACW) and pennyroyal (OBL). Seasonal wetlands occurred in the lowest-lying areas of the site within concave depressions, and thus exhibited a geomorphic position that is considered a secondary indicator of wetland hydrology (D2).

As previously mentioned, the study area is underlain by Botella clay loam, 0 to 2 percent slopes, nearly level (Figure 4). This soil type is considered hydric when it occurs in depressions (NRCS 2017a). However, when this soil type occurs on flat- or “nearly level” terrain, it may not be considered a hydric soil type (NRCS 2017b). As such, the geomorphic position of areas colonized by hydrophytic vegetation was an important indicator of

wetland hydrology used to determine the presence of Section 404 wetlands. In addition, seasonal wetlands occur in an area that appears saturated in historical aerial imagery (C9) and surface soil cracks (B6) were noted at one sample location (SP2, Appendix C).

Table 5. Summary of Wetland Data Forms Pertaining to Study Area

Name	Sampling Rationale	Hydrophytic Vegetation?	Hydric Soil?	Wetland Hydrology?	Overall Wetland Assessment
SP1	SP1 was placed in uplands adjacent to SW-2 on a gentle slope leading down from Highway 1.	Yes	No	No	Should be considered by the CCC, but appears to be upland in terms of functions and values.
SP2	SP2 was placed on the edge of a concave depression to delineate the border of SW-2.	Yes	Yes ¹	Yes	Three parameter wetland
SP3	SP3 was placed within a concave depression to delineate the border of SW-3.	Yes	Yes	Yes	Three parameter wetland
SP4	SP4 was placed within a concave depression to delineate the border of SW-1.	Yes	Yes	Yes	Three parameter wetland
SP5	SP5 was placed on flat terrain in uplands to delineate the border of SW-1.	No	No	No	Non-jurisdictional upland
SP6	SP6 was placed on flat terrain in uplands to delineate the border of SW-1.	No	No	No	Non-jurisdictional upland
SP7	SP7 was placed on flat terrain in an area colonized by willow dock	Yes	No	No	Should be considered by the CCC, but appears to be upland in terms of functions and values.

3.2.2 Areas Not Meeting the Regulatory Definition of Waters of the U.S.

The remainder of the study area did not meet the regulatory definition of Section 404 wetlands or other waters (Figure 6). Four sample locations (SP1, SP5, SP6, and SP7; Appendix C) were placed in areas outside USACE jurisdiction. Some portions of the study area that do not fall under the jurisdiction of the USACE do however, fall within CCC jurisdiction. These areas may be classified as mesic grasslands and meet the technical USACE criteria for hydrophytic vegetation. Uplands that fall outside both agencies' jurisdictions occur on flat terrain in the eastern half of the site and along the edge of Highway 1. Non-jurisdictional uplands occur outside of the

¹ By map unit designation and landscape position

area that appears saturated during the rainy season on aerial imagery from 2002 to 2017 (Google Inc. 2017 and NETR 2017). Vegetated uplands were dominated by wild radish and wild oats, and include a strip of crimson bottlebrush trees (*Callistemon citrinus*, UPL) along the eastern border of the study area. Non-vegetated uplands include an asphalt parking area and buildings associated with the car dealership in the northern portion of the study area, and a trail and statue in the southern portion. Soil across the study area is relatively homogenous, likely as a result of intermittent discing, and there were no notable differences between soils in Section 404 wetlands, one-parameter wetlands, or uplands in the site.

3.2.3 Identification of One-Parameter Wetlands

Areas dominated by hydrophytic vegetation in the absence of hydric soils or wetland hydrology are depicted on Figure 7. Seasonal wetlands (SW1-SW4, Figures 6 and 7) would be claimed by both the USACE and CCC. As discussed above, these areas should be considered by the CCC for concurrence with our determination that these areas do not exhibit true wetland values or functions. Two sample locations (SP1 and SP7; Appendix C) were placed in these areas (Figure 7). Two patches of willow dock (FACW) were mapped in the study area in flat terrain, showed no difference in soil moisture from surrounding areas dominated by upland vegetation at any site visit, and were not visible in aerial signature. The remaining vegetation in these areas was comprised of several upland species, but as described above, these areas narrowly met the technical definition of hydrophytic vegetation using the USACE Dominance Test (Appendix C, SP7). However, it is our opinion that the presence of so much strongly upland vegetation co-occurring with the facultative wetland species willow dock suggests that these areas do not have true wetland functions and values.

Much of the western portion of the site was dominated by Italian ryegrass (FAC), bristly ox-tongue (FAC or UPL), and poison hemlock (FAC). While these plants have the ability to establish and persist in areas with seasonal wetland hydrology, they are widespread in uplands in the San Francisco Bay region, frequently colonizing disturbed roadsides and agricultural fields near the coastline (Calflora 2017, Baldwin et al. 2012, and personal observations by M. Goklany, 2013-2017). The presence of these mildly hydrophytic plants alone does not indicate that these areas are covered periodically or permanently with shallow water, or that the water table is usually at or near the surface of the land (Cowardin, et al. 1979). In the absence of wetland landscape position and wetland hydrology, the CCC may choose to disclaim the flat portions of the study area dominated by willow dock, Italian ryegrass, bristly ox-tongue, and poison hemlock. Because we do not believe these areas are acting as true wetlands or support truly hydrophytic vegetation communities, we recommend that the CCC disclaim these areas as ESHAs under the CZMA.

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Appendix A. Plants Observed in the Study Area

Family	Scientific Name	Common Name	USACE Wetland Indicator Status
Apiaceae	<i>Conium maculatum</i>	Poison hemlock	FAC
Asteraceae	<i>Arctotheca calendula</i>	Cape weed	UPL
Asteraceae	<i>Carduus pycnocephalus</i>	Italian thistle	UPL
Asteraceae	<i>Helminthotheca echinodes</i>	Bristly ox-tongue	FAC or FACU
Asteraceae	<i>Sonchus asper</i>	Sow thistle	FACU
Boraginaceae	<i>Borago officinalis</i>	Borage	UPL
Brassicaceae	<i>Brassica nigra</i>	Black mustard	UPL
Brassicaceae	<i>Raphanus sativus</i>	Cultivated radish	UPL
Convolvulaceae	<i>Convolvulus arvensis</i>	Field blindweed	UPL
Cupressaceae	<i>Hesperocyparis</i> sp.	Cypress	NA
Cyperaceae	<i>Cyperus eragrostis</i>	tall flatsedge	FACW
Euphorbiaceae	<i>Mercurialis annua</i>	Annual mercury	UPL
Fabaceae	<i>Lotus corniculatus</i>	Bird's foot trefoil	FAC
Fabaceae	<i>Medicago polymorpha</i>	Bur clover	FACU
Fabaceae	<i>Vicia hirsuta</i>	Hairy vetch	UPI
Geraniaceae	<i>Erodium cicutarium</i>	Coastal heron's bill	UPL
Geraniaceae	<i>Geranium dissectum</i>	Cut leaved geranium	UPL
Lamiaceae	<i>Mentha pulegium</i>	Pennyroyal	OBL
Malvaceae	<i>Malva nicaeensis</i>	Bull mallow	UPL
Myrsinaceae	<i>Lysimachia arvensis</i>	Scarlet pimpernel	UPL
Myrtaceae	<i>Callistemon citrinus</i>	Crimson bottlebrush	UPL
Papaveraceae	<i>Eschscholzia californica</i>	California poppy	UPL
Plantaginaceae	<i>Veronica persicaria</i>	Neckweed	UPL
Poaceae	<i>Avena</i> sp.	Wild oat	UPL
Poaceae	<i>Bromus diandrus</i>	Ripgut brome	UPL
Poaceae	<i>Bromus hordeaceus</i>	Soft brome	FACU
Poaceae	<i>Elymus caput-medusae</i>	Medusa head	UPI
Poaceae	<i>Festuca perennis</i>	Italian rye grass	FAC
Poaceae	<i>Holcus lanatus</i>	Velvet grass	FAC
Poaceae	<i>Polypogon monspeliensis</i>	Annual beard grass	FACW
Polygonaceae	<i>Polygonum aviculare</i>	Prostrate knotweed	FAC
Polygonaceae	<i>Rumex crispus</i>	Curly dock	FAC
Polygonaceae	<i>Rumex transitorius</i>	Willow dock	FACW
Rosaceae	<i>Rubus armeniacus</i>	Himalayan blackberry	FACU

Notes:

Wetland Indicator Status Key (see also Table 2):

OBL = Obligate wetland species, occurs almost always in wetlands.

FACW = Facultative wetland species, usually occurs in wetlands, but may also occur in non-wetlands.

FAC = Facultative species, occurs in wetlands and non-wetlands.

FACU = Facultative upland species, usually occurs in non-wetlands, but may occur in wetlands.

UPL = Upland species, almost never occurs in wetlands.

- = Not able to identify to species, therefore no indicator status listed

Appendix B. Custom Soil Resources Report for the San Mateo Area, California



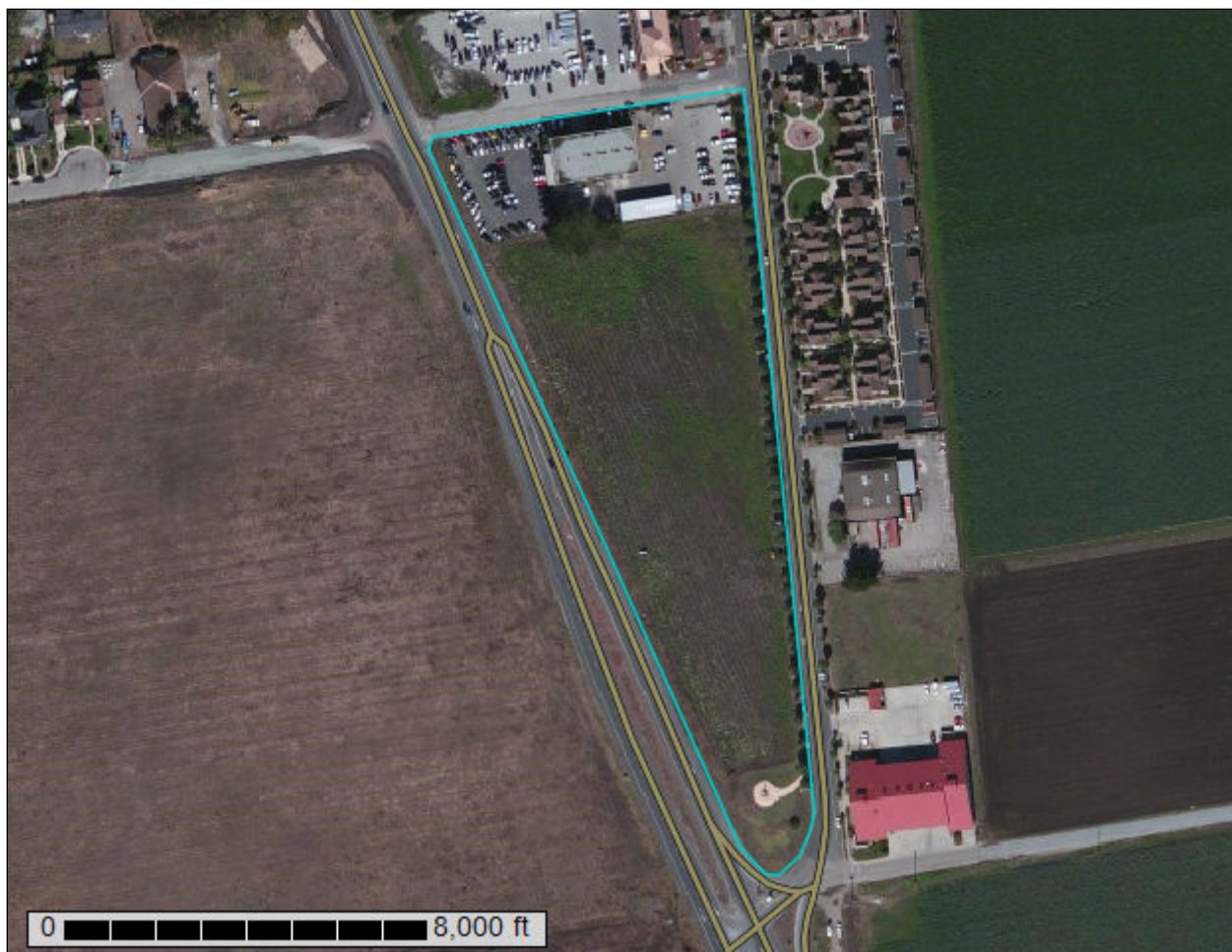
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **San Mateo Area, California**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Mateo Area, California
Survey Area Data: Version 10, Sep 12, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 26, 2010—Sep 17, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

San Mateo Area, California (CA637)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BcA	Botella clay loam, 0 to 2 percent slopes, MLRA 14	7.9	100.0%
Totals for Area of Interest		7.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Mateo Area, California

BcA—Botella clay loam, 0 to 2 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2tyz5
Elevation: 0 to 1,110 feet
Mean annual precipitation: 16 to 29 inches
Mean annual air temperature: 55 to 60 degrees F
Frost-free period: 300 to 360 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Botella and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Botella

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 9 inches: clay loam
Bt - 9 to 14 inches: clay loam
2Bt - 14 to 41 inches: silty clay loam
3Bt - 41 to 65 inches: sandy clay loam
3C - 65 to 72 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Pachic argixerolls, very slowly permeable clay sub soil

Percent of map unit: 5 percent

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Landform: Depressions, swales
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: Yes

Clear lake, hydric

Percent of map unit: 3 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: Yes

Conejo

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Garretson

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Elder

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

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Appendix C. USACE Western Mountains, Valleys, and Coast Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project Site: Half Moon Bay Hyatt Project City/County: Half Moon Bay/San Mateo Sampling Date: 06/13/2017
 Applicant/Owner: Greg Jamison State: CA Sampling Point: SP1
 Investigator(s): Maya Goklany Section/Township/Range: T5S, R5W, sec 32
 Landform (hillslope, terrace, etc.): Alluvial plain Local Relief (concave, convex, none): None Slope (%): 0-5%
 Subregion (LRR): C Lat: 37.45188 Long: -122.4304459 Datum: WGS84
 Soil Map Unit Name: Botella clay loam, 0 to 2 percent slopes, nearly level NWI classification N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation Soil X or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			

Remarks: The 2016/2017 rainy season was wetter-than-average (143 percent of normal precipitation). The site had received 0.30 inches of rainfall during the month prior to this site visit, and 0.22 inches in the previous week. Conditions are substantially drier now than observed during a reconnaissance survey of the study area on May 30, 2017. This upland sample location is within a flat area in a mesic grassland on the border of the Caltrans right-of-way and the agricultural field that has been in cultivation since the 1940's. Since then, the agricultural field has been intermittently disced and row-cropped.

VEGETATION

Tree Stratum	(Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.					
2.					
3.					
Total Cover:		0			
Sapling/Shrub Stratum	(Plot size: 30' x 30')				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL Species <u> </u> x 5 = <u> </u> Column totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1.					
2.					
3.					
Total Cover:		0			
Herb Stratum	(Plot size: 5' x 5')				Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u>X</u> 2 – Dominance Text is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 – Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 – Wetland Non-vascular Plants ¹ (Explain) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1.	<u>Helminthotheca echioides</u>	35	Y	FAC	
2.	<u>Brassica nigra</u>	5	N	UPL	
3.	<u>Avena sp.</u>	10	N	UPL	
4.	<u>Festuca perennis</u>	5	N	FAC	
5.					
6.					
7.					
8.					
9.					
10.					
11.					
Total Cover:		55			
Woody Vine Stratum	(Plot size: 30' x 30')				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1.					
2.					
Total Cover:		0			
% Bare Ground in Herb Stratum		10			

Remarks: Dominance test: $55 \times 0.5 = 27.5$, $102 \times 0.2 = 11$
 Vegetation does not pass the FAC-neutral test. Thatch covers 35 percent of the herb plot. The sample location is in the Caltrans right of way, some of which (to the west) has been recently mowed. The landowner has held off on mowing at this location this year to allow vegetation to mature. The majority of plants were mature and flowering. Although this sample location is dominated by *Helminthotheca echioides*, this species is rarely observed in wetlands near the border of the Western Mountains region and Arid West, where the study area is located (personal observation, Maya Goklany).

SOIL

Sampling Point: SP1

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (2 or more required)	
☐ Surface Water (A1)	☐ Water-stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
☐ High Water Table (A2)	☐ Salt Crust (B11)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Geomorphic Position (D2)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Plowed Soils (C6)	☐ FAC-Neutral Test (D5)	
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)	☐ Raised Ant Mounds (D6) (LLR A)	
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)	☐ Frost-Heave Hummocks (D7)	
☐ Inundation Visible on Aerial Imagery (B7)			
☐ Sparsely Vegetated Concave Surface (B8)			
Field Observations: Surface Water Present? Yes ☐ No ☒ X Depth (inches): Water Table Present? Yes ☐ No ☒ X Depth (inches): Saturation Present? Yes ☐ No ☒ X Depth (inches): (includes capillary fringe)		Wetland Hydrology Present? Yes ☐ No ☒ X	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: This sample location is near the western edge of the site, and is outside the area that appears saturated during the rainy season on aerial imagery from 2002 to 2017, and supports green vegetation well into the dry season (Google Inc. 2017 and NETR 2017). It is on a slight slope and does not exhibit a geomorphic position that would allow it to hold water long enough for wetlands to form, in comparison to wetland sample locations (SP2, SP3, and SP4). As such, there are no indicators of wetland hydrology.			

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project Site: Half Moon Bay Hyatt Project City/County: Half Moon Bay/San Mateo Sampling Date: 06/13/2017
 Applicant/Owner: Greg Jamison State: CA Sampling Point: SP2
 Investigator(s): Maya Goklany, Matthew Mosher Section/Township/Range: T5S, R5W, sec 32
 Landform (hillslope, terrace, etc.): Alluvial plain Local Relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR): C Lat: 37.45189 Long: -122.4304142 Datum: WGS84
 Soil Map Unit Name: Botella clay loam, 0 to 2 percent slopes, nearly level NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation Soil X or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Remarks: The 2016/2017 rainy season was wetter-than-average (143 percent of normal precipitation). The site had received 0.30 inches of rainfall during the month prior to this site visit, and 0.22 inches in the previous week. Conditions are substantially drier now than observed during a reconnaissance survey of the study area on May 30, 2017. The sample location is within a low-lying depression in a mesic grassland that has been in cultivation since the 1940's. Since then, the agricultural field has been intermittently disced and row-cropped. A ditch appears in aerial images from 1956 when Highway 1 was constructed adjacent to the study area, and its alignment roughly corresponds to the lowest portion of the site (NETR 2017). As such, run-off collects in the remnant ditch and has allowed seasonal wetlands to form.

VEGETATION

Tree Stratum	(Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
Total Cover:		0			
Sapling/Shrub Stratum	(Plot size: 30' x 30')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL Species _____ x 5 = _____ Column totals _____ (A) _____ (B) Prevalence Index = B/A = _____
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
Total Cover:		0			
Herb Stratum	(Plot size: 5' x 5')				Hydrophytic Vegetation Indicators: ___ 1 – Rapid Test for Hydrophytic Vegetation ___ x 2 – Dominance Text is >50% ___ 3 – Prevalence Index is ≤3.0 ¹ ___ 4 – Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 – Wetland Non-vascular Plants ¹ (Explain) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1.	<u>Festuca perennis</u>	70	Y	FAC	
2.	<u>Helminthotheca echioides</u>	50	Y	FAC	
3.	<u>Mentha pulegium</u>	5	N	OBL	
4.	<u>Rumex crispus</u>	3	N	FAC	
5.	<u>Holcus lanatus</u>	1	N	FAC	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
9.	_____	_____	_____	_____	
10.	_____	_____	_____	_____	
11.	_____	_____	_____	_____	
Total Cover:		129			
Woody Vine Stratum	(Plot size: 30' x 30')				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
Total Cover:		0			
% Bare Ground in Herb Stratum		0			

Remarks: Dominance test: 129 x 0.5 = 64.5, 129 x 0.2 = 25.8
 Vegetation does not pass the FAC-neutral test. The study area is not currently in cultivation. The landowner has held off on mowing this year at this location to allow vegetation to mature. The majority of plants were mature and flowering, with the exception of *Mentha pulegium* which had immature flower buds at the time of this survey. This sample location was placed on the edge of a seasonal wetland to determine its boundary, and there is greater coverage of *M. pulegium* within the lowest-lying portions of the wetland to the south and west.

SOIL

Sampling Point: SP2

[illegible]

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project Site: HMB Hyatt City/County: Half Moon Bay Sampling Date: 06/13/2017
 Applicant/Owner: Greg Jamison State: CA Sampling Point: SP3
 Investigator(s): Maya Goklany, Matthew Mosher Section/Township/Range: T5S, R5W, sec 32
 Landform (hillslope, terrace, etc.): Alluvial plain Local Relief (concave, convex, none): Slightly concave Slope (%): 0-1%
 Subregion (LRR): C Lat: 37.45166 Long: -122.4302573 Datum: WGS84
 Soil Map Unit Name: Botella clay loam, 0 to 2 percent slopes, nearly level NWI classification N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation Soil X or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Remarks: The 2016/2017 rainy season was wetter-than-average (143 percent of normal precipitation). The site had received 0.30 inches of rainfall during the month prior to this site visit, and 0.22 inches in the previous week. Conditions are substantially drier now than observed during a reconnaissance survey of the study area on May 30, 2017. This wetland sample location is on the edge of a low-lying depression in a mesic grassland that has been in cultivation since the 1940's. Since then, the agricultural field has been intermittently disced and row-cropped. A ditch appears in aerial images from 1956 when Highway 1 was constructed adjacent to the study area, and its alignment roughly corresponds to the lowest portion of the site (NETR 2017). As such, run-off collects in the remnant ditch and has allowed seasonal wetlands to form.

VEGETATION

Tree Stratum	(Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>NA</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
Total Cover:		<u>0</u>			
Sapling/Shrub Stratum	(Plot size: 30' x 30')				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL Species <u> </u> x 5 = <u> </u> Column totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
Total Cover:		<u>0</u>			
Herb Stratum	(Plot size: 5' x 5')				Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u> </u> 2 – Dominance Text is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 – Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 – Wetland Non-vascular Plants ¹ (Explain) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Polygonum aviculare</u>		<u>7</u>	<u>N</u>	<u>FAC</u>	
2. <u>Helminthotheca echioides</u>		<u>40</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Festuca perennis</u>		<u>50</u>	<u>Y</u>	<u>FAC</u>	
4. <u>Bromus hordeaceus</u>		<u><1</u>	<u>N</u>	<u>FACU</u>	
5. <u>Polypogon monspeliensis</u>		<u><1</u>	<u>N</u>	<u>FACW</u>	
6. <u>Lotus corniculatus</u>		<u>3</u>	<u>N</u>	<u>FAC</u>	
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
Total Cover:		<u>104</u>			
Woody Vine Stratum	(Plot size: 30' x 30')				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>N/A</u>					
2. <u> </u>					
Total Cover:		<u> </u>			
% Bare Ground in Herb Stratum		<u>0</u>			

Remarks: $104 \times 0.5 = 52$, $104 \times 0.2 = 20.8$
 Vegetation does not pass the FAC-neutral test. The study area is not currently in cultivation. The landowner has held off on mowing this year at this location to allow vegetation to mature. The majority of plants were mature and flowering. This sample location was placed on the edge of a seasonal wetland to determine its boundary, and there is greater coverage of *Polypogon monspeliensis* within the lowest-lying portions of the wetland to the north.

SOIL

Sampling Point: SP3

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (2 or more required)	
☐ Surface Water (A1)	☐ Water-stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
☐ High Water Table (A2)	☐ Salt Crust (B11)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☒ Saturation Visible on Aerial Imagery (C9)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)	☒ Geomorphic Position (D2)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Plowed Soils (C6)	☐ FAC-Neutral Test (D5)	
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LLR A)	☐ Raised Ant Mounds (D6) (LLR A)	
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)	☐ Frost-Heave Hummocks (D7)	
☐ Inundation Visible on Aerial Imagery (B7)			
☐ Sparsely Vegetated Concave Surface (B8)			
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☐ No ☒	Depth (inches):	
Saturation Present?	Yes ☐ No ☒	Depth (inches):	
(includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Sample location is within a low-lying depression that corresponds to the alignment of a former ditch. This area appears saturated during the rainy season on aerial imagery from 2002 to 2017, and supports green vegetation well into the dry season (Google Inc. 2017 and NETR 2017). While the majority of the field is a mesic grassland, this sample location exhibits a geomorphic position that allows it to hold water for a longer period of time, allowing seasonal wetlands to form.			

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project Site: Half Moon Bay Hyatt Project City/County: Half Moon Bay/San Mateo Sampling Date: 06/13/2017
 Applicant/Owner: Greg Jamison State: CA Sampling Point: SP4
 Investigator(s): Maya Goklany, Matthew Mosher Section/Township/Range: T5S, R5W, sec 32
 Landform (hillslope, terrace, etc.): Alluvial plain Local Relief (concave, convex, none): Slightly concave Slope (%): 0-2%
 Subregion (LRR): C Lat: 37.4523 Long: -122.4305751 Datum: WGS84
 Soil Map Unit Name: Botella clay loam, 0 to 2 percent slopes, nearly level NWI classification N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation Soil X or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Remarks: The 2016/2017 rainy season was wetter-than-average (143 percent of normal precipitation). The site had received 0.30 inches of rainfall during the month prior to this site visit, and 0.22 inches in the previous week. Conditions are substantially drier now than observed during a reconnaissance survey of the study area on May 30, 2017. This wetland sample location is on the edge of a low-lying depression in a mesic grassland that has been in cultivation since the 1940's. Since then, the agricultural field has been intermittently disced and row-cropped. A ditch appears in aerial images from 1956 when Highway 1 was constructed adjacent to the study area, and its alignment roughly corresponds to the lowest portion of the site (NETR 2017). As such, run-off collects in the remnant ditch and has allowed seasonal wetlands to form.

VEGETATION

Tree Stratum	(Plot size: <u>30' x 30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
Sapling/Shrub Stratum	(Plot size: <u>30' x 30'</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL Species <u> </u> x 5 = <u> </u> Column totals <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
Herb Stratum	(Plot size: <u>5' x 5'</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u>X</u> 2 – Dominance Text is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 – Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 – Wetland Non-vascular Plants ¹ (Explain) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1.	<u>Festuca perennis</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	
2.	<u>Helminthotheca echioides</u>	<u>4</u>	<u>N</u>	<u>FAC</u>	
3.	<u>Polypogon monspeliensis</u>	<u>15</u>	<u>N</u>	<u>FACW</u>	
4.	<u>Rumex crispus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5.	<u>Holcus lanatus</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
6.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
7.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
8.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
9.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
10.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
11.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>114</u>			
Woody Vine Stratum	(Plot size: <u>30' x 30'</u>)				
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
% Bare Ground in Herb Stratum		<u>0</u>			

Remarks: Dominance test: 114 x 0.5 = 57, 110 x 0.2 = 22.8
 Vegetation does not pass the FAC-neutral test. The study area is not currently in cultivation. The landowner has held off on mowing this year to allow vegetation to mature. The majority of plants were mature and flowering. This sample location was placed on the edge of a seasonal wetland to determine its boundary, and there is greater coverage of *Polypogon monspeliensis* within the lowest-lying portions of the wetland to the east, north, and south.

SOIL

Sampling Point: SP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10 YR 2/1	100					Clay loam	Many fine roots in the top 6 inches of the profile
								Small gravels throughout profile

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☒ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (If present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐**Remarks:**

Soil is slightly damp throughout the profile. Soils are problematic because the field has been intermittently disced, which is most recently evident in aerial imagery from 2012 (Google Inc. 2017). As such, hydric indicators have not had sufficient time to develop at this sample location and distinct horizons are not evident in the profile. Portions of the study area were heavily saturated during a previous site visit on May 30, 2017. Soils within the Botella series are considered hydric when occurring in depressions (NRCS 2017a). However, they are not considered hydric when occurring on level terrain (NRCS 2017b). Since this sample location is within a depressional area, the soil may be considered hydric.

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (minimum of one required: check all that apply)**

☐ Surface Water (A1)	☐ Water-stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	
☐ Saturation (A3)	☐ Salt Crust (B11)
☐ Water Marks (B1)	☐ Aquatic Invertebrates (B13)
☐ Sediment Deposits (B2)	☐ Hydrogen Sulfide Odor (C1)
☐ Drift Deposits (B3)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Algal Mat or Crust (B4)	☐ Presence of Reduced Iron (C4)
☐ Iron Deposits (B5)	☐ Recent Iron Reduction in Plowed Soils (C6)
☐ Surface Soil Cracks (B6)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (2 or more required)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☒ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LLR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____
Saturation Present?	Yes ☐ No ☒	Depth (inches): _____
(includes capillary fringe)		

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sample location is within a low-lying depression that corresponds to the alignment of a former ditch. This area appears saturated during the rainy season on aerial imagery from 2002 to 2017, and supports green vegetation well into the dry season (Google Inc. 2017 and NETR 2017). While the majority of the field is a mesic grassland, this sample location exhibits a geomorphic position that allows it to hold water for a longer period of time, allowing seasonal wetlands to form.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project Site: Half Moon Bay Hyatt Project City/County: Half Moon Bay/San Mateo Sampling Date: 06/13/2017
 Applicant/Owner: Greg Jamison State: CA Sampling Point: SP5
 Investigator(s): Maya Goklany, Matthew Mosher Section/Township/Range: T5S, R5W, sec 32
 Landform (hillslope, terrace, etc.): Alluvial plain Local Relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR): C Lat: 37.45231 Long: -122.430386 Datum: WGS84
 Soil Map Unit Name: Botella clay loam, 0 to 2 percent slopes, nearly level NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation Soil X or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			
Remarks: The 2016/2017 rainy season was wetter-than-average (143 percent of normal precipitation). The site had received 0.30 inches of rainfall during the month prior to this site visit, and 0.22 inches in the previous week. Conditions are substantially drier now than observed during a reconnaissance survey of the study area on May 30, 2017. This upland sample location is within a flat area in a mesic grassland that has been in cultivation since the 1940's. Since then, the agricultural field has been intermittently disced and row-cropped.					

VEGETATION

Tree Stratum	(Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
Sapling/Shrub Stratum (Plot size: 30' x 30')					
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u>11</u> x 3 = <u>33</u> FACU species <u> </u> x 4 = <u> </u> UPL Species <u>65</u> x 5 = <u>310</u> Column totals <u>76</u> (A) <u>343</u> (B)
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
Herb Stratum (Plot size: 5' x 5')					
1.	<u>Raphanus sativus</u>	<u>40</u>	<u>Y</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u> </u> 2 – Dominance Text is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 – Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 – Wetland Non-vascular Plants ¹ (Explain) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2.	<u>Rumex crispus</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	
3.	<u>Avena sp.</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
4.	<u>Festuca perennis</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
6.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
7.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
8.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
9.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
10.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
11.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>76</u>			
Woody Vine Stratum (Plot size: 30' x 30')					
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: Dominance test: $76 \times 0.5 = 38$, $76 \times 0.2 = 15.2$
 Vegetation does not pass the FAC-neutral test. The study area is not currently in cultivation. The landowner has held off on mowing at this location this year to allow vegetation to mature. The majority of plants were mature and flowering.

SOIL

Sampling Point: SP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10 YR 2/1	100					Clay loam	Few fine roots in the top 7 inches of the profile
								Gravel throughout profile

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☒ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil is dry throughout the profile. Soils are problematic because the field has been intermittently discd, which is most recently evident in aerial imagery from 2012 (Google Inc. 2017). Soils within the Botella series are considered hydric when occurring in depressions (NRCS 2017a). However, they are not considered hydric when occurring on level terrain (NRCS 2017b). Since this sample location is not within a depressional area, the soil was not considered hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

☐ Surface Water (A1)	☐ Water-stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	
☐ Saturation (A3)	☐ Salt Crust (B11)
☐ Water Marks (B1)	☐ Aquatic Invertebrates (B13)
☐ Sediment Deposits (B2)	☐ Hydrogen Sulfide Odor (C1)
☐ Drift Deposits (B3)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Algal Mat or Crust (B4)	☐ Presence of Reduced Iron (C4)
☐ Iron Deposits (B5)	☐ Recent Iron Reduction in Plowed Soils (C6)
☐ Surface Soil Cracks (B6)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (2 or more required)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LLR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____Water Table Present? Yes _____ No X Depth (inches): _____Saturation Present? Yes _____ No X Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This sample location is outside of the portion of the site that appears saturated during the rainy season on aerial imagery from 2002 to 2017. It is in a flat area and does not exhibit a geomorphic position that would allow it to hold water long enough for wetlands to form, in comparison to wetland sample locations (SP2, SP3, and SP4). As such, there are no indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project Site: Half Moon Bay Hyatt Project City/County: Half Moon Bay/San Mateo Sampling Date: 06/13/2017
 Applicant/Owner: Greg Jamison State: CA Sampling Point: SP6
 Investigator(s): Maya Goklany, Matthew Mosher Section/Township/Range: T5S, R5W, sec 32
 Landform (hillslope, terrace, etc.): Alluvial plain Local Relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR): C Lat: 37.45234 Long: -122.4301961 Datum: WGS84
 Soil Map Unit Name: Botella clay loan, 0 to 2 percent slopes, nearly level NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation Soil X or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			

Remarks: The 2016/2017 rainy season was wetter-than-average (143 percent of normal precipitation). The site had received 0.30 inches of rainfall during the month prior to this site visit, and 0.22 inches in the previous week. Conditions are substantially drier now than observed during a reconnaissance survey of the study area on May 30, 2017. This upland sample location is within a flat area in a mesic grassland that has been in cultivation since the 1940's. Since then, the agricultural field has been intermittently disced and row-cropped.

VEGETATION

Tree Stratum	(Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
Sapling/Shrub Stratum	(Plot size: 30' x 30')				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u>2</u> x 3 = <u>6</u> FACU species <u> </u> x 4 = <u> </u> UPL Species <u>100</u> x 5 = <u>500</u> Column totals <u>102</u> (A) <u>506</u> (B) Prevalence Index = B/A = <u>5.0</u>
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
Herb Stratum	(Plot size: 5' x 5')				Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u> </u> 2 – Dominance Text is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 – Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 – Wetland Non-vascular Plants ¹ (Explain) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1.	<u>Raphanus sativus</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>	
2.	<u>Rumex crispus</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
3.	<u>Avena sp.</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
6.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
7.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
8.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
9.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
10.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>102</u>			
Woody Vine Stratum	(Plot size: 30' x 30')				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
% Bare Ground in Herb Stratum		<u>0</u>			

Remarks: Dominance test: 102 x 0.5 = 51, 102 x 0.2 = 20.4
 Vegetation does not pass the FAC-neutral test. The study area is not currently in cultivation. The landowner has held off on mowing at this location this year to allow vegetation to mature. The majority of plants were mature and flowering.

SOIL

Sampling Point: SP6

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (2 or more required)	
☐ Surface Water (A1)	☐ Water-stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
☐ High Water Table (A2)			
☐ Saturation (A3)	☐ Salt Crust (B11)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Aquatic Invertebrates (B13)	☐ Dry-Season Water Table (C2)	
☐ Sediment Deposits (B2)	☐ Hydrogen Sulfide Odor (C1)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Geomorphic Position (D2)	
☐ Algal Mat or Crust (B4)	☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)	
☐ Iron Deposits (B5)	☐ Recent Iron Reduction in Plowed Soils (C6)	☐ FAC-Neutral Test (D5)	
☐ Surface Soil Cracks (B6)	☐ Stunted or Stressed Plants (D1) (LRR A)	☐ Raised Ant Mounds (D6) (LLR A)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Frost-Heave Hummocks (D7)	
☐ Sparsely Vegetated Concave Surface (B8)			
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☐ No ☒ Depth (inches): Saturation Present? Yes ☐ No ☒ Depth (inches): (includes capillary fringe)		Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: This sample location is near the eastern edge of the portion of the site that appears saturated during the rainy season on aerial imagery from 2002 to 2017, and supports green vegetation well into the dry season (Google Inc. 2017 and NETR 2017). It is in a flat area and does not exhibit a geomorphic position that would allow it to hold water long enough for wetlands to form, in comparison to wetland sample locations (SP2, SP3, and SP4). As such, there are no indicators of wetland hydrology.			

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project Site: Half Moon Bay Hyatt Project City/County: Half Moon Bay/San Mateo Sampling Date: 06/27/2017
 Applicant/Owner: Greg Jamison State: CA Sampling Point: SP7
 Investigator(s): Maya Goklany Section/Township/Range: T5S, R5W, sec 32
 Landform (hillslope, terrace, etc.): Alluvial plain Local Relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR): C Lat: 37.45302 Long: -122.4304761 Datum: WGS84
 Soil Map Unit Name: Botella clay loam, 0 to 2 percent slopes, nearly level NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation Soil X or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>			

Remarks: The 2016/2017 rainy season was wetter-than-average (143 percent of normal precipitation). The site had received 0.30 inches of rainfall during the month prior to this site visit, and 0.22 inches in the previous week. Conditions are substantially drier now than observed during a reconnaissance survey of the study area on May 30, 2017. The upland sample location is within a flat area in a mesic grassland that has been in cultivation since the 1940's. Since then, the agricultural field has been intermittently disced and row-cropped.

VEGETATION

Tree Stratum	(Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
Sapling/Shrub Stratum (Plot size: 30' x 30')					
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL Species <u> </u> x 5 = <u> </u> Column totals <u> </u> (A) <u> </u> (B)
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
Herb Stratum (Plot size: 5' x 5')					
1.	<u>Rumex transitorius</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u>X</u> 2 – Dominance Text is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 – Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 – Wetland Non-vascular Plants ¹ (Explain) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2.	<u>Bromus diandrus</u>	<u>7</u>	<u>N</u>	<u>UPL</u>	
3.	<u>Avena sp.</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	
4.	<u>Raphanus sativus</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
6.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
7.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
8.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
9.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
10.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
11.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>87</u>			
Woody Vine Stratum (Plot size: 30' x 30')					
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover:		<u>0</u>			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: Dominance test: $87 \times 43.5 = 27.5$, $87 \times 0.2 = 17.4$
 Vegetation passes the FAC-neutral test. Thatch covers 13 percent of the herb plot. The landowner has held off on mowing within this location this year to allow vegetation to mature. The majority of plants were mature and flowering.

SOIL

Sampling Point: SP7

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (2 or more required)	
☐ Surface Water (A1)	☐ Water-stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	
☐ High Water Table (A2)	☐ Salt Crust (B11)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Geomorphic Position (D2)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Plowed Soils (C6)	☒ FAC-Neutral Test (D5)	
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)	☐ Raised Ant Mounds (D6) (LLR A)	
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)	☐ Frost-Heave Hummocks (D7)	
☐ Inundation Visible on Aerial Imagery (B7)			
☐ Sparsely Vegetated Concave Surface (B8)			
Field Observations:			
Surface Water Present?	Yes ☐ No ☒ X	Depth (inches):	
Water Table Present?	Yes ☐ No ☒ X	Depth (inches):	
Saturation Present?	Yes ☐ No ☒ X	Depth (inches):	
(includes capillary fringe)		Wetland Hydrology Present? Yes ☐ No ☒ X	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: This sample location is near the western edge of the site, and is outside the area that appears saturated during the rainy season on aerial imagery from 2002 to 2017, and supports green vegetation well into the dry season (Google Inc. 2017 and NETR 2017). It is on flat terrain and does not exhibit a geomorphic position that would allow it to hold water long enough for 2-parameter wetlands to form, in comparison to wetland sample locations (SP2, SP3, and SP4). As such, there are no indicators of wetland hydrology.			

Appendix D. Photographs of the Study Area



Photo 1. Upland sample location SP1. Photo was taken facing NW on June 13, 2017 (Photo_1-NW, Figure 6).



Photo 2. Wetland sampling location SP2. Photo was taken facing N on June 13, 2017 (Photo_2-N, Figure 6).



Photo 3. Near wetland sample location SP2 (within the boundaries of wetland SW-2) to illustrate surface soil cracks (wetland hydrology indicator B6). Photo was taken facing N on June 27, 2017 (Photo_3-N, Figure 6).



Photo 4. Wetland sampling location SP3. Photo was taken facing NW on June 13, 2017 (Photo_4-NW, Figure 6).



Photo 5. Wetland sample location SP4. Photo was taken facing E on June 13, 2017 (Photo_5-E, Figure 6).



Photo 6. Upland sample location (SP5). Photo was taken facing W on June 13, 2017 (Photo_6-W, Figure 6).



Photo 7. Upland sample location (SP6). Photo was taken facing W on June 13, 2017 (Photo_7-W, Figure 6).



Photo 8. Soil on the top of the shovel is from SP7, whereas the soil on the lower portion of the shovel was taken from the wetland SW-1. (Photo_8-NA, Figure 6).



Photo 9. Upland sample location SP7 with willow dock. Photo was taken facing the ground surface on June 27, 2017 (Photo_9-NA, Figure 6).



Photo 10. Uplands with poison hemlock. Photo was taken facing N on June 27, 2017 (Photo_10-N, Figure 6).



Photo 11. Uplands with a mowed area and developed trail. Photo was taken facing W on June 13, 2017 (Photo_11-W, Figure 6).

Appendix E. Aquatic Resources Table

Waters Name	Cowardin Code ¹	Measurement Type	Amount	Units	Measurement Type	Amount	Units	Waters Type ²	Latitude	Longitude	Local Waterway
SW-1	PEM3C	Area	0.05	Acre	Linear	226	Feet	ISOLATE	37.45225	-122.431	Arroyo Leon
SW-2	PEM3C	Area	0.00	Acre	Linear	29	Feet	ISOLATE	37.45186	-122.43	Arroyo Leon
SW-3	PEM3C	Area	0.02	Acre	Linear	62	Feet	ISOLATE	37.45168	-122.43	Arroyo Leon
SW-4	PEM3C	Area	0.03	Acre	Linear	227	Feet	ISOLATE	37.4513	-122.43	Arroyo Leon

¹ Cowardin et al. (1979) code:

PEM3C = palustrine, emergent, rooted vascular, seasonally flooded

² Waters type abbreviations and definitions:

ISOLATE = Isolated (interstate or intrastate) waters, including isolated wetlands

Appendix F. Signed Statement from the Property Owner Allowing Access

I, Greg Jamison, will allow Corps personnel to enter the property at 100 Seymour Street in the City of Half Moon Bay, California to collect samples during normal business hours. The property is not land-locked, therefore permission from the adjacent property owner(s) in order to provide access is not necessary.

Thank you,

Greg Jamison
RGJC South, LLC
PO Box 3095
Half Moon Bay, CA 94019
650.243.8954
greg1@coastside.us