APPENDIX D
Biological Resources Report

H. T. HARVEY & ASSOCIATES
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50 years of field notes, exploration, and excellence

New Horizons Development Project
Biological Resources Report

Project #4046-02

Prepared for:

Maria Kisyova
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

Prepared by:

H. T. Harvey & Associates

June 12, 2023

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List of Preparers

Steve Rottenborn, Ph.D., Principal/Senior Wildlife Ecologist
Kelly Hardwicke, Ph.D., Associate Plant/Wetland Ecologist
Katie Gallagher, M.S., Project Manager/Senior Plant Ecologist
Jane Lien, B.S., Wildlife Ecologist
Abra Kaiser, B.A., GIS Analyst

Section 1. Introduction

This report describes the biological resources present in the area of the proposed New Horizons Development Project (project), as well as the potential biological impacts of the proposed project and measures necessary to reduce these impacts to less-than-significant levels under the California Environmental Quality Act (CEQA). This assessment is based on the project maps and description provided to H. T. Harvey & Associates by David J. Powers & Associates, Morgan Hill Devco, and Ruggeri-Jensen-Azar (RJA) through May 2023.

1.1 Project Location and Existing Setting

The approximately 77.11-acre project site is located at the northeast quadrant of Barrett Avenue and Hill Road in the City of Morgan (Figure 1). The project site is largely undeveloped, and the ground is predominantly fallowed agricultural land. There are four vacant structures, formerly used for agricultural purposes, totaling approximately 25,000 square feet on the southeastern portion of the site, surrounded by trees. There is an existing retention basin on the site. Tennant Creek transects the southwestern part of the project site (Figure 2).

The project site is bounded by Barrett Avenue, agricultural land, and rural residences to the south; Hill Road and rural residences to the west; and single-family residences to the north and east. Sorrel Drive is located northeast of the site. Jackson Park and Jackson Elementary School are located adjacent to the project site's northeastern boundary. The site is in the Coyote Valley, east of Highway 101, roughly 0.4 miles west of the foothills of the Diablo Coast Range. The project area is located on the *Mount Sizer*, *California* 7.5-minute United States Geological Survey (USGS) quadrangles.

1.2 Project Description

The proposed project would remove the existing structures, subdivide the project site into 283 lots, and develop 337 residential units, including 262 one- to two-story single-family detached houses, 20 two-story age-restricted single-family houses, and 55 age-restricted three-story condominiums. The maximum height of the single-family residences would be 32 feet above the ground surface, and the condominiums would have a maximum height of 44 feet. Single-family detached houses would be located throughout the entire site. The age-restricted cottages and condominiums would be centrally located on the site.

The project would include approximately four acres of private open space and nine acres of public open space. The project also proposes off-site improvements to Jackson Park, Jackson Elementary School, Hill Road, and Barrett Avenue (the project's open space and off-site improvements are described in more detail in Sections 1.1.2 and 1.1.8).

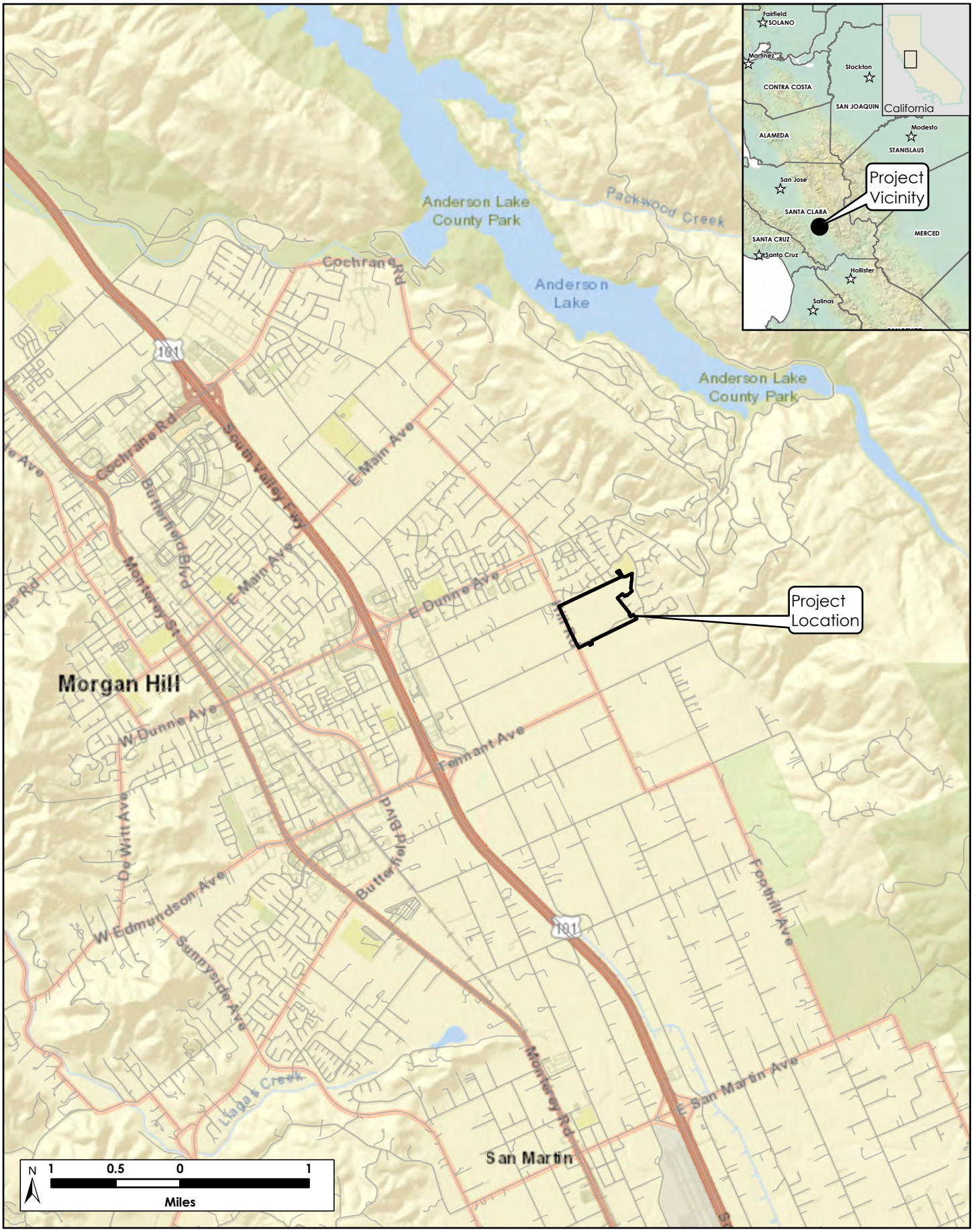

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Figure 1. Vicinity Map

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Figure 2. Project Area
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1.1.1 Site Access, Circulation, and Parking

Tennant Creek flows through the southwestern part of the site. The portion of the site between the creek and Hill Road would be accessed via one 36-foot driveway on Hill Road and one driveway on Barrett Avenue. The rest of the project site, east of Tennant Creek would be accessed from Barrett Avenue. The project would create driveway connections to Fountain Avenue and Sorrel Drive, linking the proposed residences to the adjacent residential neighborhood to the north. The project would add four internal private streets, courts, and alleys to provide circulation and connectivity within the proposed neighborhood. Access for emergency vehicles would connect a proposed road to Barrett Avenue via open space above the banks of Tennant Creek.

The project would include 1,557 parking spaces, consisting of 641 covered spaces and 916 uncovered spaces.

1.1.2 Open Space and Recreation

The project would provide approximately four acres of private open space, consisting of passive park and recreation areas. The private open space would include a centrally located community clubhouse, a small pond with fountains, and a pool. The pond would be concrete-lined, with a maximum depth of 8 feet and a 5-foot wide, 18-inch deep ledge. Water from the existing on-site well would be used to fill the pond, and water would be recirculated via a pump from the pond to a waterfall feature above the pond. The open space area would also include an amphitheater, playground, dog parks, and senior living amenities. In addition, the project would contain private open lawn areas. A new, clear-span pedestrian bridge over Tennant Creek is also proposed.

The project also proposes to dedicate approximately nine acres of land to public park/open space. This includes the improvements to the Jackson Trail and an approximately two-acre expansion of Jackson Park.

1.1.3 Landscaping and Trees

Of the 47 trees currently existing on the project site, 32 would be removed and 15 would remain on-site. A variety of trees and shrubs would be planted throughout the parking lots, around building perimeters, and along sidewalks.

1.1.4 Utilities

The project would construct new storm drain, sanitary sewer, and water lines that would connect to the City's existing systems in Barrett Avenue and Hill Road. The existing retention basin would be relocated from its existing location to the north. The existing storm drain lines that connect to the existing retention basin would be removed. An unnamed ephemeral drainage that conveys water from Jackson Park to the existing bioretention basin would be converted to an underground storm drain.

New water lines would connect to the existing water mains in Barrett Avenue and Hill Road, sanitary sewer lines would connect to new sewer lines in Barrett Avenue, and storm drains would connect to a new storm drain in Barrett Avenue. An existing groundwater well will remain onsite.

Gas and electric utilities would be provided by the Pacific Gas and Electric Company (PG&E). PG&E has easements for two existing gas lines on the eastern portion of the project site. The two gas lines would remain on the project site.

1.1.5 Storm Drainage

Additionally, the project would include three bioretention basins. One basin would be located south of Barrett Avenue adjacent to the proposed roundabout and a second would be located at the corner of Sorrel Drive and Barrett Avenue. A third basin is proposed offsite in the northeast corner adjacent to Jackson Park. Subsurface stormwater treatment chambers are proposed on both sides of Tennant Creek north of Barrett Avenue.

1.1.6 Stormwater Flow

Short segments of Tennant Creek on either side of (and at) Barrett Avenue will be realigned. Currently, Tennant Creek takes a hard turn immediately upstream from Barrett Avenue, slowing down the flow and causing upstream flooding. The project proposes to straighten the creek right at Barrett Avenue to reduce flooding, and to replace the culverts carrying the creek under the road. Riprap will be placed for stabilization at the outlet of the new culvert.

In addition, a small existing culvert carrying a farm road over Tennant Creek in the west-central part of the site will be removed and the banks will be graded to match those upstream and downstream, thereby restoring this small section of creek channel.

An unnamed ephemeral drainage in the eastern portion of the property will be piped to convert it to an underground stormdrain. This drainage collects runoff from residential areas upslope to the east and flows through a narrow ditch on the project site before entering an existing pipe. The project proposes to extend the pipe upstream to the edge of the project site.

1.1.7 Construction and Phasing

The proposed project would be constructed in three stages. Stage one includes in-tract and off-site public improvements, stage two includes recreational amenities, and stage three includes residential development. Full demolition and construction of the project would take approximately 60 months.

1.1.8 General Plan and Zoning

The project site is zoned as Residential Detached Medium Density (RDM) and has a General Plan land use designation of Residential Detached Medium (up to seven dwelling units per acre). The proposal includes amending the General Plan land use designation for 2.29-acres to increase the density from Residential Detached Medium to Residential Attached Medium to allow for a centrally located Senior Living Facility. A zoning amendment is proposed to add the Planned Development Combining District, which would allow a variety of unit types ranging from single-family detached units to multi-family attached units.

1.1.9 Off-Site Improvements

The project proposes off-site improvements to Jackson Park, Jackson Trail, and Barrett Avenue. As discussed previously, the existing on-site detention basin would be relocated to the north and is proposed as an improvement to Jackson Park. The detention basin would connect to a storm drain culvert that would divert 100-year flows to the basin.

The project proposes approximately 1.8 acres of public open space dedication, of which 1.4 acres would go towards general public open space, and 0.4 acres would be offered to Jackson Park. Other off-site improvements include improvements to Hill Road, Barrett Avenue, and Sorrel Drive. The Hill Road and Barrett Avenue improvements would include curb and gutter with landscape strip, sidewalk, and streetlights. Barrett Avenue would be improved to meet public street standards and include a roundabout. Sorrel Drive would be connected through the project near Jackson Park, and improvements would be made to the intersection at Sorrel Drive and Barrett Avenue.

Section 2. Methods

2.1 Background Review

Prior to conducting field work, H. T. Harvey & Associates ecologists reviewed the project description and maps provided by David J. Powers & Associates, Morgan Hill Devco, and RJA through May 2023; aerial images (Google LLC. 2023); a USGS topographic map; the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) (2023); habitat and species information from the Santa Clara Valley Habitat Plan (VHP, ICF International 2012); reports prepared by H. T. Harvey & Associates for other projects in the vicinity; information in public comments on the project's Notice of Preparation; and other relevant reports, scientific literature, and technical databases. We also reviewed the Inventory of Existing Trees, Morgan Hill Development Company, Hill Avenue and Barrett Avenue, Morgan Hill, California, conducted by DMJ Builders, Inc. and provided here as Appendix A. For the purposes of this report, the "project vicinity" is defined as the area within a 5-mile radius surrounding the project site.

We reviewed the CNDDB for all plant and wildlife species within a five-mile radius in the project region. In addition, for plants, we reviewed all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B lists occurring in the project region, which is defined as the *Mount Sizer, California* USGS 7.5-minute quadrangle and surrounding eight quadrangles (*Morgan Hill, Lick Observatory, Isabel Valley, Mount Stakes, Mississippi Creek, Gilroy Hot Springs, Gilroy, Mount Madonna, California*). Quadrangle-level results are not consistently maintained for CRPR 3 and 4 species, so we also conducted a search of Santa Clara County in the CNPS Rare Plant Inventory for records of CRPR 3 and 4 species' occurrences (CNPS 2023). The Jepson Flora Project (Jepson Flora Project 2023) was the primary taxonomic reference used to identify plant species encountered onsite. We queried the CNDDB (2023) for natural communities of special concern that occur in the vicinity of the project site, and we perused records of birds reported in nearby areas on eBird (Cornell Lab of Ornithology 2023).

2.2 Site Visits

Reconnaissance-level field surveys of the project site were conducted by H. T. Harvey & Associates senior plant ecologist Katie Gallagher, M.S., and wildlife biologist Jane Lien, B.S. on June 3, 2021. The purpose of these surveys was to provide an impact assessment specific to the proposed construction of the housing development as described above. Specifically, surveys were conducted to (1) assess existing biotic habitats and plant and animal communities within the project site, and (2) assess the project site for its potential to support special-status species and their habitats.

Because the proposed project is a "covered project" under the approved VHP (ICF International 2012), VHP mapping of land cover types was referenced, though it was field-verified and modified as necessary based upon site conditions observed during the field survey (Figure 3). In addition, H. T. Harvey & Associates ecologist

Jane Lien, B.S., conducted a focused survey for (1) suitable burrowing owl (*Athene cunicularia*) roosting and nesting habitat (i.e., burrows of California ground squirrels [*Otospermophilus beecheyi*]) within 250 feet of the project site, (2) evidence of previous raptor nesting activity (i.e., large stick nests), (3) potential bat roosting habitat, and (4) nests of the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). Because evidence of bat roosting (guano) was observed in an existing building, a dusk bat survey was conducted on June 9, 2021 by H. T. Harvey bat biologist Kim Briones, M.S. and senior wildlife ecologist Steve Rottenborn, Ph.D.; they looked for bats exiting the building and used acoustic monitoring equipment to record bat calls and determine the species of bats present.

On April 30, 2021, H. T. Harvey & Associates' wetland ecologist, Mark Bibbo, M.S. performed a delineation of wetlands and other waters on the property. The site was surveyed for jurisdictional waters (wetlands and other waters) that may be subject to regulation under Section 404 of the Clean Water Act administered by the U.S. Army Corps of Engineers (USACE). The survey also delineated the extent of waters of the state that may be subject to regulation under the Section 401 of the CWA and the Porter Cologne Water Quality Control Act administered by the Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW). The Preliminary Delineation of Wetlands and Other Waters report is provided as Appendix B.

2.3 Impact Assessment

Impacts of project activities were analyzed based on an overlay of project design CAD files provided in April and May 2023 on the site's land cover types and biological resources.

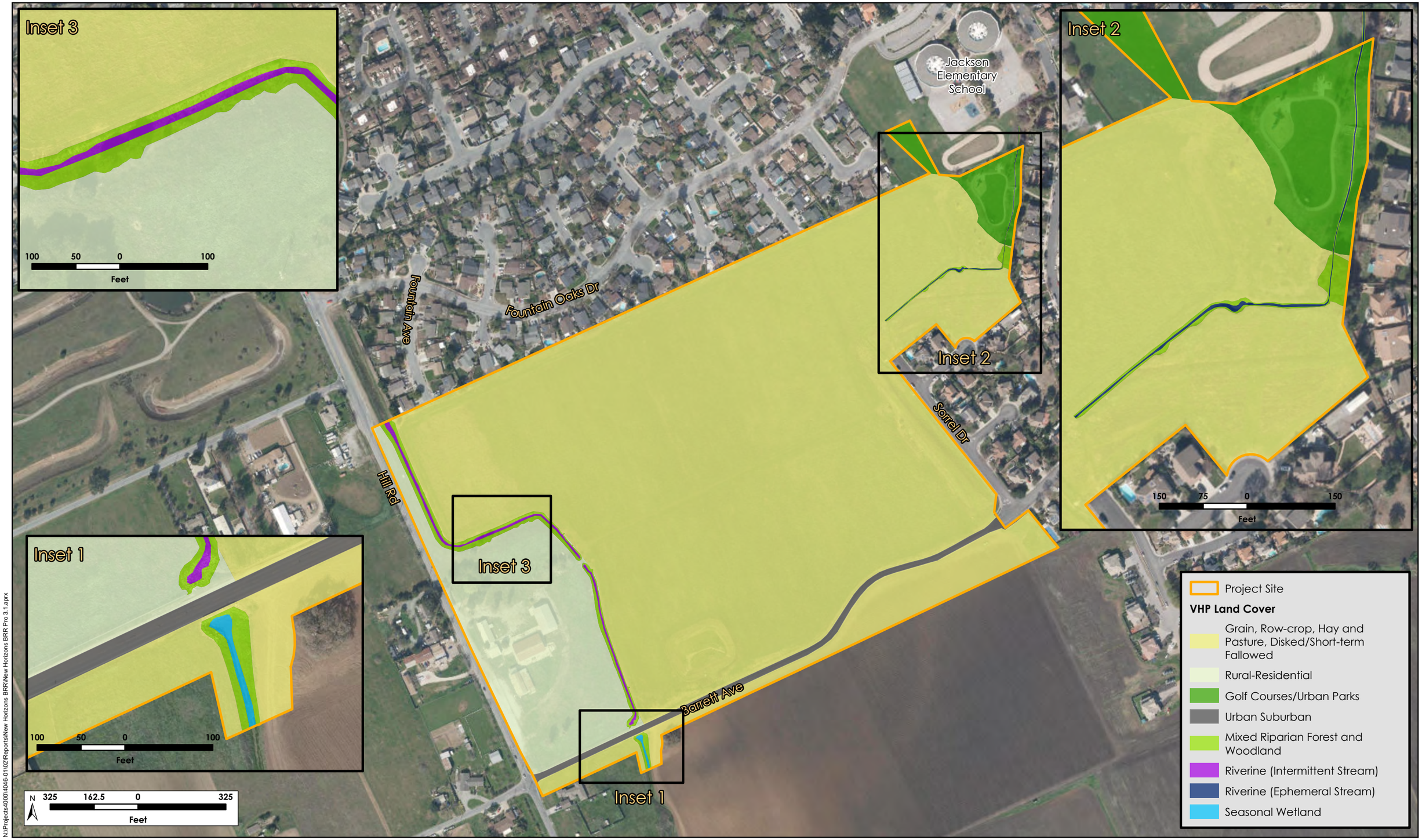

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Figure 3. Land Cover Map
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Section 3. Regulatory Setting

Biological resources on the project site are regulated by a number of federal, state, and local laws and ordinances, as described below.

3.1 Federal Regulations

3.1.1 Clean Water Act

The CWA functions to maintain and restore the physical, chemical, and biological integrity of waters of the U.S., which include, but are not limited to, tributaries to traditionally navigable waters currently or historically used for interstate or foreign commerce, and adjacent wetlands. Historically, in non-tidal waters, USACE jurisdiction extends to the Ordinary High Water (OHW) mark, which is defined in Title 33, Code of Federal Regulations, Part 328.3. If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark to the outer edges of the wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and, depending on the circumstances, may be subject to USACE jurisdiction. In tidal waters, USACE jurisdiction extends to the landward extent of vegetation associated with salt or brackish water or the high tide line. The high tide line is defined in 33 Code of Federal Regulations Part 328.3 as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide." If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark or high tide line to the outer edges of the wetlands.

In May 2023, the U.S. Supreme Court's decision in *Sackett vs. EPA* narrowed federal wetland authority under the CWA, indicating that wetlands may be considered jurisdictional if they are adjacent to waters of the U.S. and have a continuous surface connection with those waters. This decision also affirmed that waters of the U.S. should be "relatively permanent", calling into question whether features such as ephemeral streams would be considered waters of the U.S.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of Section 401 Water Quality Certification. The State Water Resources Control Board (SWRCB) is the state agency (together with the RWQCBs) charged with implementing water quality certification in California.

Project Applicability: Tennant Creek is expected to be considered waters of the U.S. by the USACE based on the presence of OHW marks on opposing banks, regular flow, intermittent hydrology in most years, and indirect hydrologic connectivity to traditionally navigable waters (the Pajaro River and eventually Monterey Bay). The seasonal wetlands downstream of Tennant Creek's culvert under Barrett Avenue are within the OHW marks and were determined to be three-parameter wetlands (USACE 2008) based on the presence of hydrophytic vegetation, direct observations of hydrology (i.e., flowing surface water), and their location between the OHW

marks. Therefore, we expect that a Section 404 permit from the USACE would be necessary to authorize the project's proposed impacts on wetlands and other waters. An unnamed ephemeral drainage in the northeastern part of the site may not be considered waters of the U.S. per the *Sackett vs. EPA* decision; the USACE will ultimately determine the limits of jurisdictional wetlands and other waters of the U.S. on the site.

3.1.2 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects federally listed wildlife species from harm or *take*, which is broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." *Take* can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as *take* even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA only if they occur on federal lands.

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) have jurisdiction over federally listed, threatened, and endangered species under FESA. The USFWS also maintains lists of proposed and candidate species. Species on these lists are not legally protected under FESA, but may become listed in the near future and are often included in their review of a project.

Project Applicability: No federally listed or candidate plant species occur on the project site. There is some potential (albeit low) for the federally threatened California red-legged frog (*Rana draytonii*) and California tiger salamander (*Ambystoma californiense*) to occasionally disperse onto the site from offsite breeding locations, and individuals of these species may be affected by the proposed project. The project is covered by the VHP, which would provide incidental take approval if individuals of these species are impacted.

3.1.3 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from the NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by the NMFS.

Project Applicability: The intermittent and ephemeral streams on the project site do not have a sufficient hydroperiod, nor do they have adequate downstream connectivity to more permanent waterways, to support fish. Thus, no FMP-managed fishes are present, and no EFH is present.

3.1.4 Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), 16 U.S.C. Section 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests; and prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the Department of the Interior in its April 16, 2003 Migratory Bird Permit Memorandum. Nest starts (nests that are under construction and do not yet contain eggs) are not protected from destruction.

Project Applicability: All native bird species that occur in the project area are protected under the MBTA.

3.2 State Regulations

3.2.1 Porter-Cologne Water Quality Control Act

The SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect waters of the state. Their authority comes from the CWA and Porter-Cologne. Porter-Cologne broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Moreover, the San Francisco Bay Region RWQCB's Assistant Executive Director has stated that, in practice, the RWQCBs claim jurisdiction over riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures describe riparian habitat buffers as important resources that may both be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs to impact.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that a proposed project will uphold state water quality standards. Because California's jurisdiction to regulate its water resources is much broader than that of the federal government, proposed impacts on waters of the state require Water Quality Certification even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not. Under the Porter-Cologne, the SWRCB and the nine regional boards also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES)

permits and Waste Discharge Requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

Project Applicability: Waters of the state include all potential waters of the U.S., including Tennant Creek and the seasonal wetlands in the creek south of Barrett Avenue. The RWQCB is also expected to take jurisdiction over the small ephemeral drainage in the northeastern part of the project area. The RWQCB will also consider the riparian vegetation rooted below top of bank and areas of the riparian banks above OHW and below top of bank to be important buffers to waters of the state associated with the creek and the ephemeral drainage (Figure 3). Therefore, we expect that a Section 401 water quality certification from the RWQCB would be necessary to authorize the project's proposed impacts on wetlands and riparian buffers regulated by the RWQCB.

3.2.2 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with CESA, the CDFW has jurisdiction over state-listed species (Fish and Game Code 2070). The CDFW regulates activities that may result in *take* of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of *take* under the California Fish and Game Code. The CDFW, however, has interpreted *take* to include the "killing of a member of a species which is the proximate result of habitat modification."

Project Applicability: No suitable habitat for any state-listed plant species occurs in the project area, and thus no state-listed plants are reasonably expected to occur in the project area. As mentioned above, there is some potential for the state-threatened California tiger salamander to occasionally disperse onto the site from offsite breeding locations, and individuals may be affected by the proposed project. The project is covered by the VHP, which would provide incidental take approval if individuals of this species are impacted. The tricolored blackbird (*Agelaius tricolor*), a state-listed species, may occasionally forage on the project site as a forager, and the mountain lion (*Puma concolor*) Southern California/Central Coast Evolutionarily Significant Unit (ESU), a candidate for state listing, may occur as a transient on the site, but neither of these species will be "taken" by the proposed project (as defined by CESA), as these species do not breed on the site, and individuals are mobile and are therefore expected to voluntarily move away from project activities before take occurs.

3.2.3 California Environmental Quality Act

CEQA is a state law that requires state and local agencies to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources,

and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA known as the State CEQA Guidelines.

Section 15380(b) of the State CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the FESA and the CESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW or species that are locally or regionally rare.

The CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists". Species on these lists are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA Section 15380(b).

The CNPS, a non-governmental conservation organization, has developed CRPRs for plant species of concern in California in the CNPS Inventory of Rare and Endangered Plants. The CRPRs include lichens, vascular, and non-vascular plants, and are defined as follows:

- CRPR 1A Plants considered extinct.
- CRPR 1B Plants rare, threatened, or endangered in California and elsewhere.
- CRPR 2A Plants considered extinct in California but more common elsewhere.
- CRPR 2B Plants rare, threatened, or endangered in California but more common elsewhere.
- CRPR 3 Plants about which more information is needed - review list.
- CRPR 4 Plants of limited distribution-watch list.

The CRPRs are further described by the following threat code extensions:

- .1—seriously endangered in California;
- .2—fairly endangered in California;
- .3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA's Section 15380 criteria, and

adverse effects to these species may be considered significant. Impacts on plants that are listed by the CNPS on CRPR 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those of CRPR 1B or 2, impacts on them are less frequently considered significant.

Compliance with CEQA Guidelines Section 15065(a) requires consideration of natural communities of special concern, in addition to plant and wildlife species. Vegetation types of "special concern" are tracked in Rarefind (CNDDB 2023). Further, the CDFW ranks sensitive vegetation alliances based on their global (G) and state (S) rankings analogous to those provided in the CNDDB. Global rankings (G1–G5) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas S rankings are a reflection of the condition of a habitat within California. If an alliance is marked as a G1–G3, all of the associations within it would also be of high priority. The CDFW provides the Vegetation Classification and Mapping Program's currently accepted list of vegetation alliances and associations (CDFW 2023).

Project Applicability: All potential impacts on biological resources will be considered during CEQA review of the project in the context of this biological resources report. Project impacts are discussed in Section 6 below.

3.2.4 California Fish and Game Code

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A *stream* is defined in Title 14, California Code of Regulations Section 1.72, as "a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code Section 2786 defines *riparian habitat* as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, CDFW would claim jurisdiction over a stream's bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

Pursuant to California Fish and Game Code Section 1603, CDFW regulates any project proposed by any person that will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds." California Fish and Game Code Section 1602 requires an entity to notify CDFW of any proposed activity that may modify a river, stream, or lake. If CDFW determines that proposed activities may substantially adversely affect fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) must be prepared. The LSAA sets reasonable conditions necessary to protect fish and wildlife, and must comply with CEQA. The applicant may then proceed with the activity in accordance with the final LSAA.

Certain sections of the California Fish and Game Code describe regulations pertaining to protection of certain wildlife species. For example, Code Section 2000 prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided by other sections of the code.

The California Fish and Game Code Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered *take* by the CDFW. Raptors (e.g., eagles, hawks, and owls) and their nests are specifically protected in California under Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Bats and other non-game mammals are protected by California Fish and Game Code Section 4150, which states that all non-game mammals or parts thereof may not be taken or possessed except as provided otherwise in the code or in accordance with regulations adopted by the commission. Activities resulting in mortality of non-game mammals (e.g., destruction of an occupied nonbreeding bat roost, resulting in the death of bats), or disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), may be considered *take* by the CDFW.

Project Applicability: CDFW jurisdiction under Section 1602 of the California Fish and Game Code would extend up to the tops of the banks of Tennant Creek and the unnamed ephemeral drainage. CDFW jurisdiction would also include the riparian habitat that was mapped outside the top of bank.

Most native bird, mammal, and other wildlife species that occur in the project area and in the immediate vicinity are protected by the California Fish and Game Code.

3.2.5 State Water Resources Control Board Stormwater Regulation

Construction Phase. Construction projects in California causing land disturbances that are equal to 1 acre or greater must comply with state requirements to control the discharge of stormwater pollutants under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ, as amended and administratively extended). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of Best Management Practices (BMPs) to protect water quality until the site is stabilized.

Standard permit conditions under the Construction General Permit requires that the applicant utilize various measures including: on-site sediment control BMPs, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors. Additionally, the Construction General Permit does not extend coverage to

projects if stormwater discharge-related activities are likely to jeopardize the continued existence, or result in take of any federally listed endangered or threatened species.

Post Construction Phase. In many Bay Area counties, including Santa Clara County, projects must also comply with the California RWQCB, San Francisco Bay Region, Municipal Regional Stormwater Permit (Water Board Order No. R2-2015-0049, as amended). This permit requires that all projects implement BMPs and incorporate Low Impact Development practices into the design that prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors.

Project Applicability. The project will comply with the requirements of the Construction General Permit and Municipal Regional Permit; therefore, construction phase activities and stormwater from the proposed development would not result in detrimental water quality effects upon biological/regulated resources.

3.3 Local Regulations

The project site is located within the limits of the City of Morgan Hill. Applicable City ordinances and policies are discussed below.

3.3.1 City of Morgan Hill Tree Ordinance

The City of Morgan Hill, in Section 12.32.030 of the Municipal Code, defines the Tree Removal Permit Process required prior to the removal by cutting down, poisoning, killing, destroying, or otherwise the removal of any tree or community of trees:

- Existing trees rising above the ground with a single stem or trunk of a circumference of 40 inches or more for nonindigenous species and 18 inches or more for indigenous species (native to Morgan Hill region, including oaks, California bay, madrone, sycamore, and alder) measured at four and one-half feet vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes (all commercial tree farms, nonindigenous species in residential zones, and orchards (including individual fruit trees) are exempted; or
- Trees of any size within the public right-of-way; or
- Trees that are important to the historical or visual aspect of Morgan Hill.

To remove any trees that meet the above conditions, a tree removal permit must be secured from the City of Morgan Hill. The application for a tree removal permit must include: diameter and height of tree, type of tree, map of location of tree, method of marking the tree, description of method used to remove the tree, description of tree planting or replacement program, reason proposed for removing the tree, address where tree is located,

general health of tree to be removed, and any other pertinent information that the community development director may require.

Project Applicability: Ordinance-sized trees are present on the project site. The project will comply with the City of Morgan Hill's policies for any trees that need to be removed.

3.3.2 Santa Clara Valley Habitat Plan

The VHP (ICF International 2012) provides a framework for promoting the protection and recovery of natural resources, including endangered and threatened species, while streamlining the permitting process for planned development, infrastructure, and maintenance activities. The VHP allows the County of Santa Clara, Santa Clara Valley Water District, the Santa Clara Valley Transportation Authority, and the cities of Gilroy, Morgan Hill, and San José (collectively, the Local Partners or Permittees) to receive endangered species permits for activities and projects they conduct and those under their jurisdiction. The Santa Clara Valley Open Space Authority also contributed to VHP preparation. The VHP will protect, enhance, and restore natural resources in specific areas of Santa Clara County and contribute to the recovery of endangered species. Rather than separately permitting and mitigating individual projects, the VHP evaluates natural-resource impacts and mitigation requirements comprehensively in a way that is more efficient and effective for at-risk species and their essential habitats.

The VHP was developed in association with the USFWS and CDFW and in consultation with stakeholder groups and the general public. The USFWS has issued the Permittees a 50-year permit that authorizes incidental take of listed species under FESA, while CDFW has issued a 50-year permit that authorizes take of all covered species under the Natural Community Conservation Planning Act. This approach allows the Permittees to streamline future mitigation requirements into one comprehensive program. In addition to obtaining take authorization for each participating agency's respective activities, the cities and County will be able to extend take authorization to project applicants under their jurisdiction.

The USFWS and CDFW will also provide assurances to the Permittees that no further commitments of funds, land, or water will be required to address impacts on covered species beyond that described in the VHP to address changed circumstances. In addition to strengthening local control over land use and species protection, the VHP provides a more efficient process for protecting natural resources by creating new habitat reserves that will be larger in scale, more ecologically valuable, and easier to manage than the individual mitigation sites created under the current approach.

The VHP and associated documents are approved and adopted by the six Local Partners (Cities of Gilroy, Morgan Hill and San José, County of Santa Clara, Santa Clara Valley Transportation Authority, and Valley Water).

Project Applicability: The project site is located within the VHP permit area, and it meets the conditions of a covered project. Therefore, project activities are considered covered under the VHP and are required to comply

with VHP conditions (ICF International 2012). Tennant Creek and the unnamed ephemeral drainage would be considered Category 2 streams under the VHP. While the unnamed ephemeral drainage will be piped, Tennant Creek will be largely avoided by the project, and a 35-foot riparian setback would apply. All proposed development not considered an allowable use by the VHP within this setback will require a setback exception.

3.3.3 City of Morgan Hill Natural Resources Policy

The City of Morgan Hill, in Section 18.92.110 of the Municipal Code, defines the required setbacks from ridgelines, Category 2 streams, Category 1 streams, and from 100-year flood plains. The definitions of and required setbacks for Category 1 and 2 streams are equivalent to those of the VHP (ICF International 2012). The Morgan Hill 2035 General Plan (Placeworks 2016) provides background information and policies on the following topics:

- Open Space, Hillsides, and Scenic Features
- Agricultural Resources
- Biological Resources
- Water Quality and Conservation
- Air Quality
- Climate Change
- Energy Conservation

Project Applicability: The project site is located within the boundaries of the City of Morgan Hill. Therefore, project activities are required to comply with the City's municipal policies and measures from the 2035 General Plan.

Section 4. Environmental Setting

4.1 General Project Area Description

The climate in the project vicinity is coastal Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. Hot to mild temperatures are common in the summer. Climate conditions in the vicinity include a 30-year average of approximately 20.8 inches of annual precipitation with a monthly average temperature range from 49.4º F to 87.8º F (PRISM Climate Group 2023). Elevations on the project site range from 345 feet above mean sea level at the southwest corner to 402 feet above mean sea level at the northeast corner (Google LLC 2023). The Natural Resource Conservation Service (NRCS) has mapped four soil units in the project area from the west to the east: (1) San Ysidro loam, 0–2% slopes, (2) Cropley clay, 0–2% slopes, (3) Hillgate silt loam, 2 to 9%, and (4) Cropley clay, 2–9% slopes (NRCS 2023). The San Ysidro loam soils form the western portion of the site, encompassing the agricultural infrastructure area. They are in alluvial fans on valley floors and on adjacent terraces and are derived from sedimentary rock. Cropley clays soil units form the majority of the agricultural field where the large central portion is very flat with a 0-2% slope and the smaller portion closest to the public park is mapped as having a 2-9% slope. The Hillgate silt loam soils encompass the existing retention basin in the southern portion of the site. They are mostly terraces derived from alluvial parent material. None of these four soils are considered "hydric" soils (NRCS 2023). More details are provided in the Preliminary Delineation of Wetlands and Other Waters (Appendix B).

The majority of the study area is a fallowed agricultural field, with a rural-residential area consisting of several farm buildings and structures in the southwest corner of the property (Figure 3). The northeastern portion of the study area also includes a portion of Jackson Park, a municipal park associated with an adjacent school. Parallel to Sorrell Avenue in the eastern portion of the site, there is a large soil berm, approximately 8-10 feet high, running approximately 670 feet. The berm is covered in non-native annual grasses.

4.2 Land Cover

As described above, biotic habitats in the project area were classified according to the land cover classification system described in the VHP (ICF International 2012). Based on our field observations, we identified eight land cover types on the project site (Figure 3): grain, row-crop, hay and pasture, disked/short-term fallowed (cultivated agricultural land); rural-residential; golf courses/urban parks; urban-suburban (i.e., developed/landscaped); mixed riparian forest and woodland, riverine (intermittent stream); riverine (ephemeral stream); and seasonal wetland (Figure 3). These land cover types are described in detail below. The acreages are provided in Table 1 below. Plant species observed during all biological surveys are listed in Appendix C.

Table 1. Acreage per Land Cover Type

Land Cover Type	Acres
Grain, Row-crop, Hay and Pasture, Disked/Short-term Fallowed	59.84
Rural-Residential	9.82
Golf Courses/Urban Parks	1.47
Urban Suburban	1.07
Mixed Riparian Forest and Woodland	1.01
Riverine (Intermittent Stream)	0.33
Riverine (Ephemeral Stream)	0.07
Seasonal Wetland	0.03
Total	**73.65**

4.2.1 Grain, Row-crop, Hay and Pasture, Disked/Short-term Fallowed

Vegetation. The majority of the project site is dominated by the "grain, row-crop, hay and pasture, disked/short-term fallowed" land cover type. At the time of the reconnaissance visit, the agricultural field had been recently disked, leaving few rooted plant individuals (Photo 1, Appendix D). We understand from viewing historical aerials that this site has been disked regularly for many decades. The vegetation that was disked and still identifiable or germinated and grew since the last disking was mostly non-native annual grasses such as wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), and foxtail barley (*Hordeum murinum* ssp. *leporinum*). Common forb species include patches of field bindweed (*Convolvulus arvensis*), prickly lettuce (*Lactuca serriola*), short-podded mustard (*Hirschfeldia incana*), and perennial pepperweed (*Lepidium latifolium*). No native plant species were observed. A large soil berm is located in the eastern portion of the site, adjacent to Sorrel Drive. The berm does not appear to be disked or mowed. It is dominated by the same non-native annual grasses as the disked land below, but they area much denser as a thick layer of thatch has accumulated.

An approximately 0.60-acre abandoned detention basin is present in a portion of the agricultural fields near Barrett Avenue. No wetland vegetation was observed in this detention basin, and no signs of recent hydrology were observed. The vegetation within the basin was similar to fallow portions of the agricultural fields, and the basin was therefore included in this land cover type.

Wildlife. Cultivated agricultural lands in the Project area support relatively few wildlife species due to the frequent disturbance associated with disking, the paucity of vegetation in these areas after disking, and the structural simplicity and homogeneity of these lands when crops are growing. Nevertheless, some wildlife species, primarily grassland-associated species, use these habitats. A small number of California ground squirrel (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*) burrows occur on the soil stockpile along the eastern margin of the site, and on the slopes of the dry retention pond. Since the fields were last cultivated, these small mammals have also expanded somewhat into the margins of the cultivated areas. Raptors such as

red-tailed hawks (*Buteo jamaicensis*), American kestrels (*Falco sparverius*), and white-tailed kites (*Elanus leucurus*) forage over the cultivated fields for these animals, as well as for the gopher snakes (*Pituophis catenifer*), yellow-bellied racers (*Coluber constrictor mornom*) and western fence lizards (*Sceloporus occidentalis*) that forage on their margins. Common bats, such as California myotis (*Myotis californicus*), forage over or on the margins of these fields as well. When these fields are cultivated, they are expected to be used by relatively few wildlife species (other than by animals moving through the fields). However, red-winged blackbirds (*Agelaius phoeniceus*) may nest in hay fields or in mustard within cultivated fields. During fall and winter, after the fields have been disked, nonbreeding birds such as the Canada goose (*Branta canadensis*), killdeer (*Charadrius vociferus*), American pipit, (*Anthus rubescens*), and savannah sparrow (*Passerculus sandwichensis*) forage in these fields.

4.2.2 Rural-Residential

Vegetation. Rural-residential land cover associated with the on-site residence is located in the southwest corner of the property. It includes five abandoned buildings, some with corrugated sheet metal roofs or broken windows. Between the buildings are gravel driveways and parking lots that have mostly become overgrown with weeds (Photo 2, Appendix D). Surrounding the buildings is mostly fallow uncultivated land that is dominated by non-native grasses such as foxtail barley and Italian rye grass (*Festuca perennis*). Among the grass are patches of non-native forbs such as red-stemmed filaree (*Erodium cicutarium*), short-podded mustard, stinkwort (*Dittrichia graveolens*), purple sand spurry (*Spergularia rubra*), narrow-leaved plantain (*Plantago lanceolata*), and yellow star thistle (*Centaurea solstitialis*). Centered within the buildings is a medium-size ornamental Japanese privet tree (*Ligustrum japonicum*). An ordinance-size Chinese juniper (*Juniperus chinensis* 'Kaizuka') is rooted on the west side of the western-most building. Northwest of the farm buildings is a stand of ordinance-size coast live oaks (*Quercus agrifolia*) and an ordinance-size shamel ash (*Fraxinus uhdei*). Northeast of the buildings is a stand of ordinance-size coast live oaks and an ordinance-size Northern California black walnut (*Juglans hindsii*) centered around a large above-ground tank. In the southeast corner of the property are two ordinance-size red ironbark trees (*Eucalyptus sideroxylon*).

Wildlife. Wildlife use of the rural-residential areas on the project site is limited by human disturbance and the low structural diversity of the vegetation, and wildlife either use developed structures (e.g., cavities and crevices in buildings, bridges, and other artificial structures) or are attracted to trees and other landscaping for breeding and foraging. Both common bats, including a single California myotis, and two California species of special concern, a single Townsend's big-eared bat (*Corynorhinus townsendii*) and one or two pallid bats (*Antrozous pallidus*), were detected using one of the abandoned buildings as a night roost during the June 2021 survey, though there was no evidence of use of any buildings or trees on the site as day roosts for bats. Burrows of California ground squirrels and Botta's pocket gophers were also observed clustered throughout the rural-residential area. Other rodent species that can potentially occur here include the California vole (*Microtus californicus*) and deer mouse (*Peromyscus maniculatus*). Diurnal raptors such as red-tailed hawks and white-tailed kites forage for these small mammals during the day, and at night nocturnal raptors, such as barn owls (*Tyto alba*), will forage for nocturnal rodents.

Birds such as the nonnative European starling (*Sturnus vulgaris*), rock pigeon (*Columba livia*), Eurasian collared-dove (*Streptopelia decaocto*), and house sparrow (*Passer domesticus*), as well as the native mourning dove (*Zenaida macroura*), house finch (*Haemorhous mexicanus*), California towhee (*Melozone crissalis*), lesser goldfinch (*Spinus psaltria*), and barn swallow (*Hirundo rustica*), nest in or on artificial structures, trees, or shrubs and forage throughout the rural-residential areas and other land cover types on the project site. The larger trees may support nests of raptors, such as white-tailed kites or red-tailed hawks, though no raptor nests were observed during the June 2021 reconnaissance surveys. Winter residents such as the white-crowned sparrow (*Zonotrichia leucophrys*), golden-crowned sparrow (*Zonotrichia atricapilla*), and yellow-rumped warbler (*Setophaga coronoata*) will forage in these habitats during the spring, fall, and winter.

Several reptile species regularly occur in these habitats, including the western fence lizard, gopher snake, and southern alligator lizard (*Elgaria multicarinata*). Burrows of California ground squirrels and Botta's pocket gophers provide refuges for these reptile species. Mammals such as the native striped skunk (*Mephitis mephitis*), raccoon (*Pyrocon lotor*), and black-tailed jackrabbit (*Lepus californicus*), as well as the nonnative Virginia opossum (*Didelphis virginiana*), house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), and feral cat (*Felis catus*), use these habitats for foraging.

4.2.3 Golf Courses/Urban Parks

Vegetation. On the project site, the golf courses/urban parks land cover type consists of Jackson Park, a small municipal park. The area contains actively maintained landscaping including an ornamental lawn, London plane trees (*Platanus x hispanica*), and planted California redwoods (*Sequoia sempervirens*). A line of recently planted cork oaks (*Quercus suber*) surrounds the outside of the park. Concrete pathways and a children's play structure compose most of the area. The upper segment of an ephemeral drainage, described in Section 4.2.7, flows along the southeastern edge of this park.

Wildlife. The urban park areas within the project area serve as wildlife habitat only in a very limited capacity, and most wildlife species that occur in these areas are tolerant of frequent human disturbances. Species that use these areas include the nonnative European starling, rock pigeon, house mouse, and Norway rat, as well as the native raccoon and striped skunk. Reptiles such as western fence lizards and gopher snakes may bask on road or parking lot surfaces in order to raise their body temperature. A variety of birds, including the Anna's hummingbird (*Calypte anna*), California towhee, bushtit (*Psaltriparus minimus*), chestnut-backed chickadee (*Poecile rufescens*), and California scrub-jay (*Aphelocoma californica*) will nest and forage in landscape vegetation. Large nonnative trees provide potential nesting sites for raptors, such as Cooper's hawks, although no old, existing nests of raptors were observed within or adjacent to the project area during the June 2021 reconnaissance survey.

4.2.4 Urban-Suburban

Vegetation. This land cover type site consists of Barrett Avenue. Its surface is asphalt and is maintained regularly.

Wildlife. Wildlife that occur in the surrounding agricultural and suburban areas may occasionally be found on the asphalt surfaces of Barret Avenue as they disperse into or forage in adjacent habitats. Reptiles, such as the western fence lizard and gopher snake, may bask on open areas associated with the road.

4.2.5 Mixed Riparian Forest and Woodland

Vegetation. The mixed riparian forest and woodland land cover type includes the banks and associated vegetation rooted within Tennant Creek, an intermittent stream, and the low banks of the unnamed ephemeral drainage. The banks of Tennant Creek are uniform 2:1 slopes, supporting mostly ruderal non-native herbaceous vegetation and approximately nine woody perennials including coyote brush (*Baccharis pilularis*; Photo 3, Appendix D), coast live oak, and cork oak. The ruderal vegetation is roughly equivalent to the adjacent agricultural fields, dominated by non-native annual grasses (e.g., foxtail barley, wild oats, and ripgut brome), non-native forbs such as chicory (*Cichorium intybus*), short-podded mustard, milk thistle (*Silybum marianum*), and field bindweed. Two native species located on the banks in notable numbers are willowherb (*Epilobium brachycarpum*) and narrow leaf milkweed (*Asclepias fasciculatus*). This land cover type is mowed annually, presumably before the narrow leaf milkweed, a deciduous perennial, sprouts in the spring. This has allowed the slender willowherb and the milkweed to successfully compete with the more dominant non-native species. The banks of the unnamed ephemeral drainage are vegetated with non-native grasses, similar to the surrounding agricultural field. Although this land cover type is not a true forest or woodland, it is designated as mixed riparian forest and woodland per VHP standards.

Wildlife. Mature and structurally diverse riparian habitats in the region tend to support a high diversity and density of animal species. However, the mixed riparian forest and woodland on the project site is limited in extent/width, has low structural diversity (being dominated by herbaceous plants in most areas, with few trees and shrubs), and is located close to suburban development, all of which limit its value to wildlife. Common birds found elsewhere on the site may forage and roost in the vegetation, and common mammals and reptiles, such as the California ground squirrel and western fence lizard, forage there. No animal species that are typically considered "riparian-associated" species occur on the project site.

4.2.6 Riverine (Intermittent Stream)

Vegetation. Tennant Creek is identified as an intermittent stream. Tennant Creek runs through the western part of the property, approximately 60 feet from Hill Road in the northern half of the property, before taking two hard 90-degree turns in the middle of the property to flow around the farm buildings. Tennant Creek is an engineered, trapezoidal channel that flows intermittently from north to south. The current alignment of this drainage is a channelization of a historical creek that flowed in the vicinity, and which originated just to the north of the study area. Currently, Tennant Creek flows to the south; within approximately one mile of the study area it flows into Corralitos Creek, another intermittent stream, which then flows into Little Llagas Creek another 1.3 air miles to the south, near the town of San Martin. Little Llagas Creek flows into Llagas Creek near Gilroy, which then flows into the Pajaro River and Monterey Bay/Pacific Ocean.

At the time of the June 3, 2021 reconnaissance survey, there was no indication of a difference in vegetation from the creek bottom to the creek banks (Photo 3, Appendix D); however, this survey was conducted after two consecutive years of drought. The dominant vegetation in the creek bottom consists of the same herbaceous species listed above in mixed riparian forest and woodland along the banks of the creek. More details about this land cover type can be found in the Preliminary Delineation of Wetlands and other Waters (Appendix B).

Wildlife. Due to the lack of differentiation between the vegetation of the stream and the surrounding riparian habitat, as well as low structural diversity of plant cover, wildlife use of the intermittent stream habitat on the project site is low. The species described above as using the agricultural fields and rural residential land cover occur in and along Tennant Creek as well. Lack of persistent flows preclude the presence of fishes, and no pools or other features hold water long enough to support successful breeding by amphibians. During the brief periods when the creek contains water, mallards (*Anas platyrhynchos*) are expected to forage here, but no other wetland or stream-associated species are likely to occur here.

4.2.7 Riverine (Ephemeral Stream)

Vegetation. East of the Jackson Park ornamental lawn, there is a small concrete-lined ephemeral drainage surrounded by non-native annual grasses. This feature is fed by storm water runoff from the surrounding residential neighborhoods to the east of the study area. Below the concrete-lined section, the drainage is mostly unvegetated, is lined with imported cobbles, and is surrounded by non-native annual grasses. It runs adjacent to residences east of the project site under a canopy of linearly spaced coast live oak trees that appear to have been planted. It then leads into the large agricultural field where it becomes a larger unshaded drainage. This unshaded portion appears to be mowed regularly (Photo 4, Appendix D) and is dominated by non-native species such as wild oats, Italian rye grass, short-podded mustard, prickly oxtongue (*Helminthotheca echioides*), and the native slender willowherb. This ditch-like section culminates in a 36-inch storm drain culvert that conveys flow underground to a storm drain that runs along (and beneath) Barrett Avenue and empties into Tennant Creek south of the study area. More details about this land cover type can be found in the Preliminary Delineation of Wetlands and other Waters (Appendix B).

Wildlife. Wildlife use of this stream is limited by the very brief duration of flow, lack of riparian vegetation (and paucity of vegetation at all), and disturbance of surrounding areas by agricultural activities, mowing, and park use. Wildlife that use the adjacent habitats may occasionally forage in or move through the ephemeral drainage, but no stream/riparian-associated species use this feature.

4.2.8 Seasonal Wetland

Vegetation. Tennant Creek crosses Barrett Avenue in an underground culvert near the southwest corner of the project area. The creek daylights again south of Barrett Avenue, where riprap helps dissipate flow velocity and reduce bank erosion. Seasonal wetlands are located at the toe of the riprap slopes (Photo 5, Appendix D). The vegetation is very thick, dominated by Himalayan blackberry (*Rubus armeniacus*), curly dock (*Rumex crispus*),

short-podded mustard, poison hemlock (*Conium maculatum*), and wild radish (*Raphanus sativus*). The seasonal wetlands end where the vegetation transitions to non-native annual grasses. More details about this land cover type can be found in the Preliminary Delineation of Wetlands and other Waters (Appendix B).

Wildlife. While seasonal wetlands can provide habitat for a distinctive suite of wetland-associated wildlife species, the small size, isolation, short hydroperiod, and weedy vegetation of the wetlands on the project site limit their value as wildlife habitat. Wildlife use of the seasonal wetlands in the project area are expected to be similar to those described above as using the agricultural fields and rural residential land cover.

4.3 Wildlife Movement

Wildlife movement within and in the vicinity of the project site takes many forms, and is different for the various suites of species associated with these lands. Bird and bat species move readily over the landscape in the project vicinity, foraging over and within both natural lands and landscaped areas. Mammals of different species move within their home ranges, but also disperse between patches of habitat. Generally, reptiles and amphibians similarly settle within home ranges, sometimes moving to central breeding areas, upland refugia, or hibernacula in a predictable manner, but also dispersing to new areas. Some species, especially among the birds and bats, are migratory, moving into or through the project vicinity during specific seasons. Aside from bats, there are no other mammal species in the vicinity of the site that are truly migratory. However, the young of many mammal species disperse from their natal home ranges, sometimes moving over relatively long distances in search of new areas in which to establish their own territories.

Movement corridors are segments of habitat that provide linkage for wildlife through the mosaic of suitable and unsuitable habitat types found within a landscape while also providing cover. On a broader level, corridors also function as paths along which wide-ranging animals can travel, populations can move in response to environmental changes and natural disasters, and genetic interchange can occur. In California, environmental corridors often consist of riparian areas along streams, rivers, or other natural features, or through undeveloped areas of natural habitat.

The project site is situated adjacent to the southern and eastern boundaries of suburban development associated with the city of Morgan Hill. The open areas on the project site are contiguous with extensive agricultural and rural-residential lands located east of U.S. 101 and south of Morgan Hill. In much of this area, agricultural activities, residential development, and narrow (two-lane) roads do not pose substantial constraints to wildlife movement, and more mobile animals such as black-tailed deer (*Odocoileus hemionus*), bobcats (*Lynx rufus*), coyotes (*Canis latrans*), and occasionally mountain lions may move over large distances through these lands. To the east, the Diablo Range provides extensive natural habitats that support populations of these species, and this mountain range also provides important habitat for wildlife movement. Animals may move between the site and adjacent/nearby agricultural or natural lands individually (for larger, more mobile species), and genes may be passed between animals on the project site and populations in nearby agricultural or natural lands over generations in the case of smaller, less mobile species.

However, the project site is not located within a particularly important area for regional, landscape-scale wildlife movement because of the impediments to movement posed by residential lands to the north, and U.S. 101, other well-traveled roads, and intensive residential, commercial, and industrial lands to the west. For example, U.S. 101 is virtually impassable to terrestrial animals within a long segment from Coyote Valley to the north (e.g., the 101 overcrossing of Coyote Creek northwest of Burdett Avenue) to the San Martin area. There is some potential for animals to move across 101 using the Little Llagas Creek culvert, far to the south of the project area near East Middle Avenue, and animals could possibly use overcrossings (e.g., East Dunne Avenue and Tennant Avenue). However, heavy traffic and the absence of suitable habitat (especially vegetative cover) likely preclude the use of these overcrossings by most animals, and the density of development west of U.S. 101 is expected to prevent any meaningful dispersal across the valley (e.g., between the Santa Cruz Mountains and Diablo Range) in the Morgan Hill area. Although animals could possibly move through the site during northwest-southeast dispersal in the area east of U.S. 101, such as moving along Tennant Creek, the dense residential development immediately north of the site would impede such dispersal, and much easier movement (closer to large core habitat areas more remote from human disturbance) could occur to the east in the Diablo Range.

Most larger animals that stray into the agricultural and suburban matrix near the project site during dispersal events are not likely to remain there for long, as essential habitat elements such as suitable food and cover resources are largely absent for many wildlife species (e.g., the project site is unlikely to be within the normal home range of any bobcats or mountain lions, even though these species occur just to the east). Some of these species, such as bobcats, coyotes, and mountain lions, are also averse to interaction with humans. In contrast, wildlife residing on or near the project site are accustomed to human disturbance, and navigate readily through the matrix of suburban, agricultural, and rural-residential landscapes. Thus, while small-scale, local movement of wildlife may occur throughout the project site, we do not expect animals to use the project site during regionally important, landscape-level dispersal.

Section 5. Special-Status Species and Sensitive Habitats

CEQA requires assessment of the effects of a project on species that are protected by state, federal, or local governments as "threatened, rare, or endangered"; such species are typically described as "special-status species". For the purpose of the environmental review of the project, special-status species have been defined as described below. Impacts on these species are regulated by some of the federal, state, and local laws and ordinances described in Section 3 above.

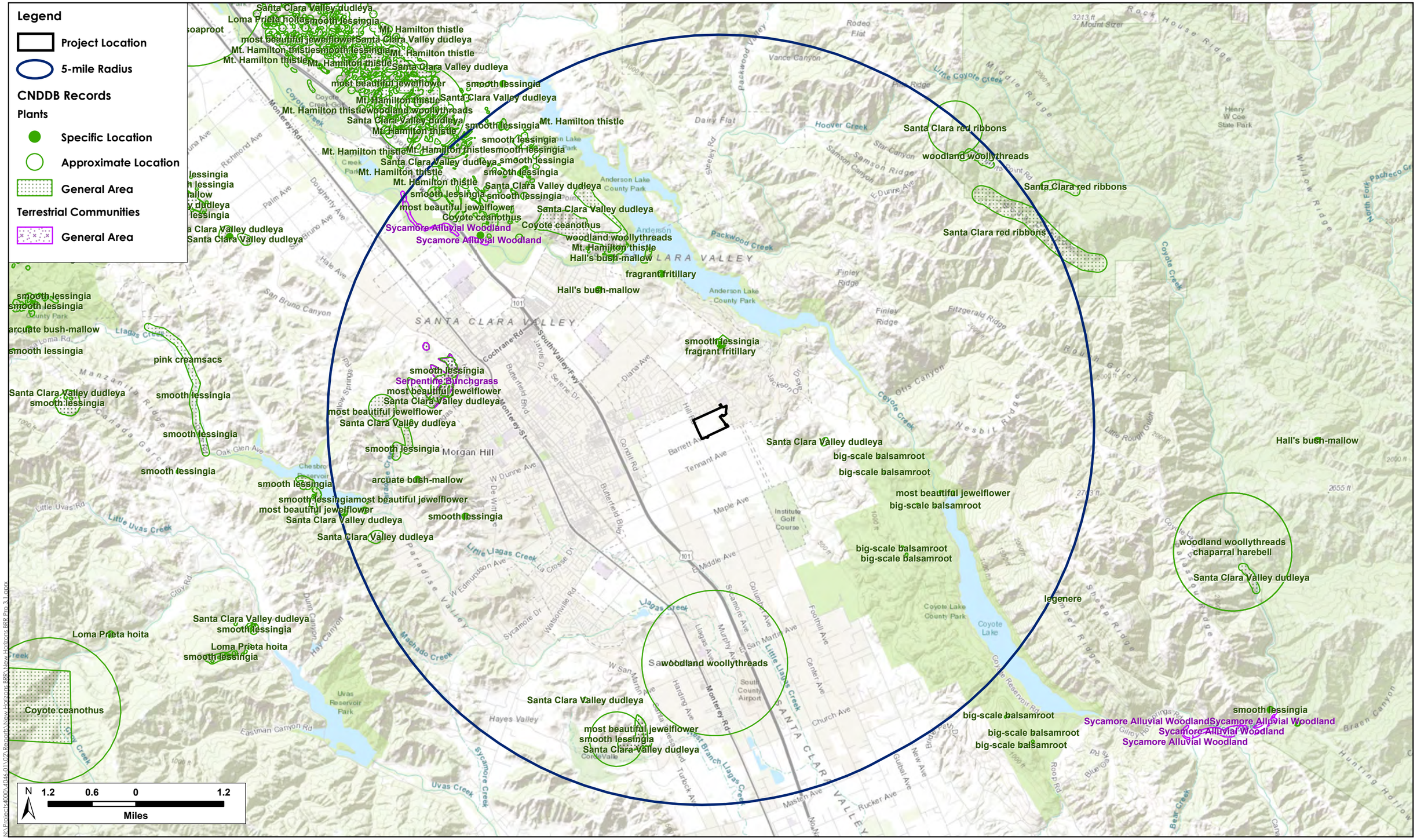
For purposes of this analysis, "special-status" plants are considered plant species that meet one or more of the following criteria:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2, 3, or 4.

For purposes of this analysis, "special-status" animals are considered animal species that meet one or more of the following criteria:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA 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).

Information concerning threatened, endangered, and other special-status species that potentially occur in the project area was collected from several sources and reviewed by H. T. Harvey & Associates biologists as described in Section 2.1 above. Figure 4 depicts CNDDB records of special-status plant species in the general vicinity of the project site and Figure 5 depicts CNDDB records of special-status animal species. These generalized maps show areas where special-status species are known to occur or have occurred historically.



H. T. HARVEY & ASSOCIATES
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Figure 4. CNDDB-Mapped Records of Special-Status Plants
New Horizons Development Project Biological Resources Report (4046-02)
June 2023

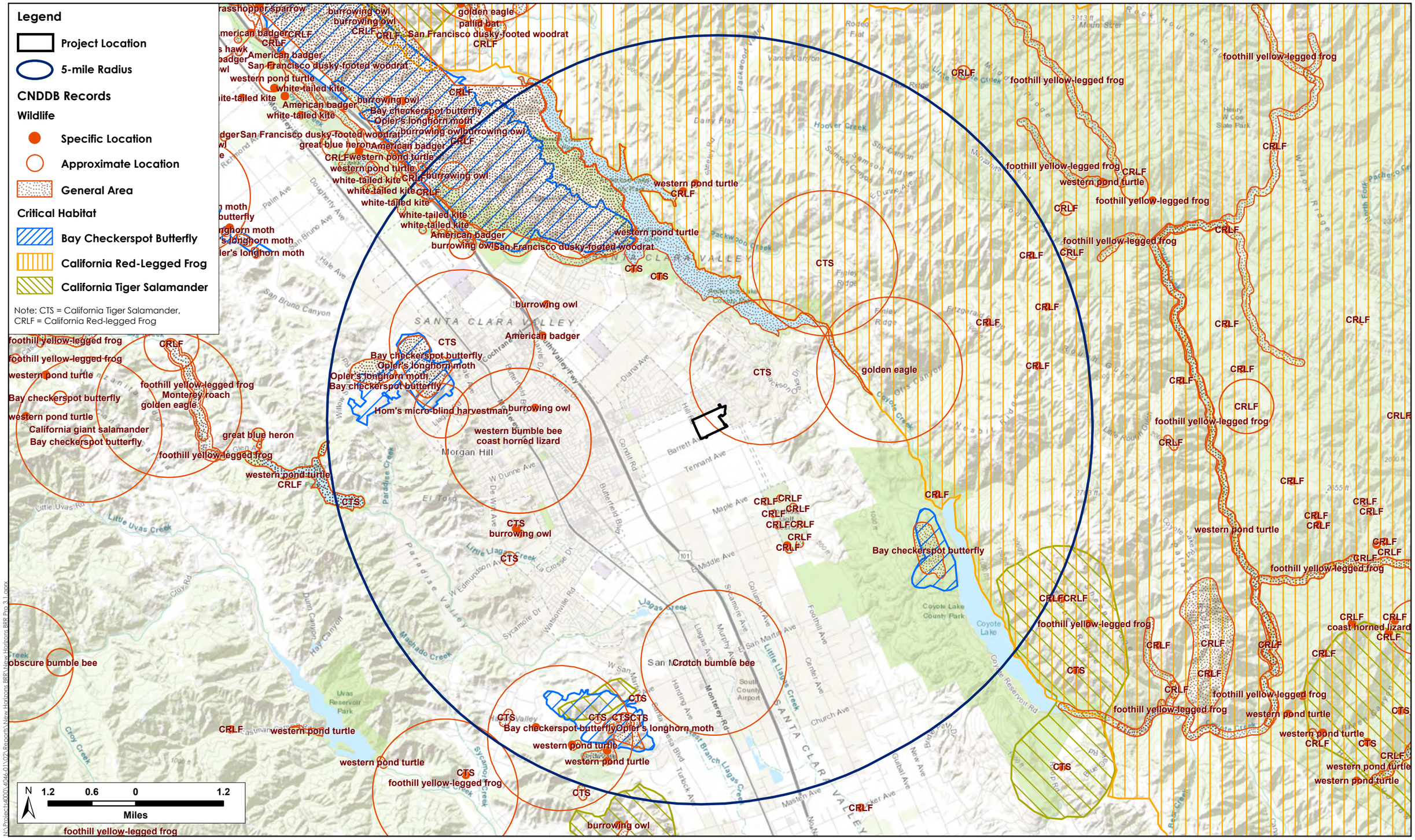

Figure 5. CNDDB-Mapped Records of Special-Status Animals

New Horizons Development Project Biological Resources Report (4046-02)
June 2023

H. T. HARVEY & ASSOCIATES
Ecological Consultants

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5.1 Special-Status Plant Species

The CNPS (2023) and CNDDB (2023) identify a total of 72 special-status plant species as potentially occurring in at least one of the 9 USGS 7.5-minute quadrangles containing or surrounding the project site for species in CRPR 1 and 2, or in Santa Clara County for CRPR 3 and 4 species. All of the potentially occurring special-status plant species were determined to be absent from the project site for at least one of the following reasons: (1) absence of suitable habitat types; (2) lack of specific microhabitat or edaphic requirements, such as serpentine soils; (3) the elevation range of the species is outside of the range of the project area; and/or (4) the species is presumed extirpated from the project region. Appendix E lists these plants along with the basis for the determination of absence. This group includes many species known to occur on serpentine soils on the ridge east of the project area where outcrops of serpentine geology and soils are present. All habitat types in the project area have been previously disturbed for agricultural purposes, leaving no undeveloped areas remaining.

5.2 Special-Status Animal Species

The legal status and likelihood of occurrence on the project site of special-status animal species known to occur, or potentially occurring, in the region are presented in Table 2. Most of the special-status species listed in Table 2 are not expected to occur on the project site because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat.

The following special-status species that are present in less urbanized settings in the South Bay, or in specialized habitats in the South Bay, are not expected to occur on the project site due to a lack of suitable habitat, isolation of the site from source populations by urbanization or agriculture, and/or distance between the site and the species' current range: the Bay checkerspot butterfly (*Euphydryas editha bayensis*), western bumble bee (*Bombus occidentalis*), foothill yellow-legged frog (*Rana boylii*), least Bell's vireo (*Vireo bellii pusillus*), and San Joaquin kit fox (*Vulpes macrotis mutica*). No nests of San Francisco dusky-footed woodrats (*Neotoma fuscipes annectens*) were observed on the project site during the reconnaissance survey on June 3, 2021, and this species is therefore determined to be absent from these areas.

Several special-status species may occasionally occur in the study area as nonbreeding foragers or transients, but they are not expected to breed, roost, den, or otherwise reside there due to a lack of suitable habitat, regular disturbance of the project site itself, and/or proximity to human activity. These species include the bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), American badger (*Taxidea taxus*), and mountain lion (P*uma concolor*).

Two special-status bats, the Townsend's big-eared bat (*Corynorhinus townsendii*) and the pallid bat (*Antrozous pallidus*), were detected during a focused dusk/acoustic survey of the project site on June 9, 2021. Although these species were detected using an abandoned building on the site as a night roost, the paucity of bat guano

present (and detection of only four individual bats) indicated that only low numbers of bats use the site, and no evidence that either species breeds on the site or has a day-roost on the site was observed. Therefore, both of these species are expected to occur only in very small numbers as nonbreeding visitors/foragers.

Four other special-status animals, the California red-legged frog, California tiger salamander, western pond turtle (*Actinemys pallida*), and burrowing owl (*Athene cunicularia*), may occur on the project site as rare, nonbreeding seasonal residents or dispersants. California red-legged frogs associated with breeding populations off-site may occur either in the terrestrial or aquatic habitats of the project site during the rainy season, and California tiger salamanders dispersing from off-site breeding populations may take refuge in small mammal burrows at any time of year. Occasional individuals of the western pond turtle from off-site aquatic habitats may occur on the site during dispersal events. While burrowing owls are not expected to breed in the Project area, they may forage on the site, and nonbreeding individuals could potentially roost in ground squirrel burrows during migration and winter.

The loggerhead shrike (*Lanius ludovicianus*), a California bird species of special concern, and the white-tailed kite (*Elanus leucurus*), a state fully protected animal, could potentially breed on the project site in low numbers. The monarch butterfly (*Danaus plexippus*), a candidate for federal listing under FESA), and Crotch's bumble bee (*Bombus crotchii*), a candidate for listing under CESA, may also breed on the project site in small numbers.

Table 2. Special-status Animal Species, Their Status, and Potential Occurrence within the Project Area

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Federal or State Endangered, Threatened, or Candidate Species			
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT, VHP	Native grasslands on serpentine soils. Larval host plants are *Plantago erecta* and/or *Castilleja exserta* or *C. densiflora*.	**Absent.** No suitable native grasslands, serpentine soils, or larval host plants to support this species are present in the project area, and the VHP does not map suitable habitat on the project site (ICF International 2012). Determined to be absent. A photo of a checkerspot taken on the project site by a nearby resident and provided in response to the Notice of Preparation for the project's Environmental Impact Report depicted the much more common and widespread, though similar, variable checkerspot (*Euphydryas chalcedona*).
Monarch butterfly (*Danaus plexippus*)	FC	Requires milkweeds (*Asclepias* spp.) for egg-laying and larval development, but adults obtain nectar from a wide variety of flowering plants in many habitats. Individuals congregate in winter roosts, primarily in Mexico and in widely scattered locations on the central and southern California coast. The life cycle of the monarch butterfly, from laying of an egg to emergence from the pupa, can vary from 20 to 35 days. Eggs hatch about 4 days after being laid. Larvae grow and molt through five stages, or instars, with the entire larval development process lasting 9-16 days. They then enter the pupal stage, which lasts 8-15 days before the monarchs emerge as adults. Multiple generations are produced during the March-October breeding season.	**May be Present as Breeder.** The monarch butterfly occurs in the project region primarily as a migrant, and no current or historical overwintering sites are known as far inland as the project site, so no large nonbreeding aggregations would occur on the project site. However, a number of narrow-leaf milkweed plants were observed during the June 2021 reconnaissance surveys, and small numbers of individuals may breed from March through October. Individuals may forage in the vicinity from spring through fall.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Crotch's bumble bee (*Bombus crotchii*)	SC	Open grassland and scrub habitats.	**May be Present as Breeder.** Although the species was historically found throughout the southern two-thirds of California, including the Project vicinity, population declines and range contractions have made this species scarce in the region. Nevertheless, community science efforts to look for the species, including California Bumble Bee Atlas field work, have detected it in scattered locations in Santa Clara County since 2019 (Bumble Bee Watch 2023, iNaturalist 2023). The nearest known occurrence is approximately 2.7 miles from the site[1]. Due to the frequent disking of the project site and lack of less disturbed grassland or scrub supporting high-quality nectar and pollen sources, this species is not expected to be present on the site regularly or in numbers. However, because it can nest in small mammal burrows and use a variety of flowering plants as nectar and pollen sources, it could potentially occur, and even breed, in small numbers on the site.
Western bumble bee (*Bombus occidentalis*)	SC	Meadows and grasslands with abundant floral resources.	**Absent.** Although the species was historically found throughout much of central and northern California, including the Project vicinity, it is not expected to occur on the site due to recent range contractions. Determined to be absent.

[1] https://www.inaturalist.org/observations?place_id=any&subview=map&taxon_id=271451

Name	*Status	Habitat	Potential for Occurrence within the Project Site
California tiger salamander (*Ambystoma californiense*)	FT, ST, VHP	Preferred breeding habitat consists of temporarily (a minimum of 3–4 months) ponded environments (e.g., vernal pools, ephemeral pools, or human-made ponds) surrounded by grasslands or open woodlands where small mammal burrows are present. Will also utilize permanent ponds if aquatic vertebrate predators are not present. Suitable ponds provide breeding and larval habitat, while burrows of small mammals such as California ground squirrels and Botta's pocket gophers in upland habitats provide refugia for juvenile and adult salamanders during the dry season.	**Absent as Breeder.** No onsite aquatic features have sufficient hydroperiods to support breeding California tiger salamanders, and the VHP does not map the site as providing potential California tiger salamander breeding habitat. The nearest ponds (San Pedro percolation ponds northwest of the site) were assessed for their potential to support California tiger salamanders in 2012 (H. T. Harvey & Associates 2012a). That study determined that the species was not expected to use those percolation ponds for breeding because they provide low-quality breeding habitat and are separated from known occurrences and higher-quality potential breeding ponds by distance and/or development that would preclude dispersal of the species to these ponds. The next nearest ponds to the project site are at the Institute Golf Course, where California tiger salamanders have been known to occur (H. T. Harvey & Associates 2012a). Although the nearest pond on the golf course is approximately 1.25 miles from the project site, there is evidence that some individual California tiger salamanders may move distances up to 1.3 miles (Orloff 2007) from occupied ponds. As a result, there is some potential for California tiger salamanders to disperse to the project site. However, the likelihood of such dispersal is low given the distance as well as the extent of cultivated fields in the intervening area. Such fields provide few, if any, upland refugia for California tiger salamanders, such as small mammal burrows. Therefore, salamanders dispersing toward the project site are unlikely to be able to reach it without desiccation. Furthermore, the project site itself provides few upland refugia, as the majority of the land is cultivated. Nevertheless, the project site is within dispersal distance from known breeding ponds, and the possibility that a small number of California tiger salamanders could disperse onto the project site, and possibly occur in small mammal burrows on the project site, cannot be ruled out.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
California red-legged frog (*Rana draytonii*)	FT, CSSC, VHP	Inhabit perennial freshwater pools, streams, and ponds throughout the Central California Coast Range as well as isolated portions of the western slopes of the Sierra Nevada (Fellers 2005). Preferred breeding habitat consists of deep perennial pools with emergent vegetation for attaching egg clusters (Fellers 2005), as well as shallow benches to act as nurseries for juveniles (Jennings and Hayes 1994). While most California red-legged frogs make relatively short movements and remain within creek drainages, individuals have been documented traveling over 1.5 miles from their breeding locations, across a variety of upland habitats, to suitable nonbreeding habitats (Bulger et al. 2003, Fellers and Kleeman 2007). Individuals may occasionally use ground squirrel burrows as refugia (Tatarian 2008).	**Absent as Breeder.** VHP habitat modeling for this species suggests that the project site provides potential dispersal habitat for the California red-legged frog in upland areas and that the on-site channel provides potential breeding habitat. However, no suitable waterbodies for breeding are present on or adjacent to the project site itself; for example, Tennant Creek does not provide any pools or provide water long enough to support breeding by red-legged frogs. The nearest ponds (the San Pedro percolation ponds to the northwest of the site) are not known or expected to support California red-legged frogs due to their variable hydroperiods, scarcity of emergent vegetation, and heavily managed nature. The nearest known occurrence of the California red-legged frog to the site is at the Institute Golf Course, approximately 1.2 miles southeast of the project area, where breeding was detected in ponds in 2001 (CNDDB 2023). Golf course ponds are within dispersal distance of the site. As a result, there is some potential that occasional dispersant red-legged frogs could occur on the project site, though once on the site, they would find no suitable aquatic habitat, and only widely scattered upland refugia. Therefore, the frequency of occurrence and number of individuals that may occur on the site are low.
Foothill yellow-legged frog (*Rana boylii*)	PFT, SE, VHP	Found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows. Ideal habitat for this species consists of streams with riffles and cobble-sized rocks, with slow water flow (Jennings and Hayes 1994).	**Absent.** Suitable stream habitat is absent from the project area and vicinity. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Tricolored blackbird (*Agelaius tricolor*)	ST, VHP	Highly colonial nester that establishes dense breeding colonies in emergent vegetation, grain fields, fallow fields, extensive thickets of blackberry, ruderal vegetation such as mustard or thistle, and occasionally in early-successional riparian habitat. Nesting colonies usually are located near fresh water. Tricolored blackbirds are itinerant nesters, and because their nesting habitat is ephemeral, it is possible for this species to colonize or recolonize an area as suitable breeding habitat becomes available.	**Absent as Breeder.** In Santa Clara County, this species has bred in only a few scattered locations, and is absent from, or occurs only as a nonbreeder in, most of the County (Rottenborn 2007). Suitable nesting habitat is absent from the project site and surroundings, and the VHP's Geobrowser does not indicate any tricolored blackbird survey areas near the site. This species is therefore not expected to nest on or near the project site. Tricolored blackbirds forage in agricultural fields, grasslands, and other open habitats, and during the nonbreeding season, it is possible that tricolored blackbirds could forage on the site in small numbers.
Swainson's hawk (*Buteo swainsoni*)	ST	Prime breeding habitat encompasses riparian draws or clumps of trees surrounded by open grassland or oak savannah for foraging.	**Absent as Breeder.** Swainson's hawk apparently nested in small numbers in Santa Clara County historically, and there is an 1894 nest record from the Berryessa area (in eastern San José) (Bousman 2007a). Since 2013, a pair of Swainson's hawks has nested successfully each year near Coyote Creek in northern Coyote Valley, approximately 8 miles northwest of the project alignment. Otherwise, this species is known to occur in the project vicinity only as a very infrequent transient during migration. Although nesting Swainson's hawks may be returning to the region, Swainson's hawks are not expected to nest on or near the project site due to high levels of human disturbance (e.g., roads, suburban residences, and agricultural activities). This species may forage on the site on rare occasions during migration, albeit infrequently and in very low numbers.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Bald eagle (*Haliaeetus leucocephalus*)	SE, SP	Ideal habitat is composed of remote, forested landscape with old-growth or mature trees and easy access to an extensive and diverse prey base. Forages in fresh and salt water where their prey species (fish) are abundant and diverse. Builds nests in tall, sturdy trees at sites that are in relatively close proximity to aquatic foraging areas and isolated from human activities.	**Absent as Breeder.** Known to nest (or to have recently nested) in Santa Clara County in at least 12 locations, mostly near reservoirs (Bousman 2007b, Ventana Wildlife Society 2012). The nearest nest to the project site is near Coyote Reservoir, approximately 3.5 miles southeast. No suitable nesting habitat for bald eagles is present on the project site or surroundings. The foraging habitat on the site is of poor quality owing to the scarcity of small mammals. However, this species could potentially forage on the site, albeit infrequently and in low numbers.
Least Bell's vireo (*Vireo bellii pusillus*)	FE, SE, VHP	Nests in heterogeneous riparian habitat, often dominated by cottonwoods and willows.	**Absent.** Suitable riparian habitat is absent from the project site and surroundings, and the site is outside the breeding range of the species.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, ST, VHP	Annual grassland or mixed shrub and grassland habitats throughout low, rolling hills and in valleys.	**Absent.** The closest area of potential occurrence (based on VHP mapping) is approximately 10 miles southeast of the project site in the vicinity of Pacheco Creek and the uppermost reaches of the Pajaro River, where it may occur infrequently and in low numbers during dispersal (ICF International 2012). The project site is well outside the species' range.
Mountain lion (*Puma concolor*) Southern California/Central Coast ESU	SC	Has a large home range size and occurs in a variety of habitats. Natal dens are typically located in remote, rugged terrain far from human activity. May occasionally occur in areas near human development, especially during dispersal.	**Absent as Breeder.** In the project region, mountain lions occur primarily in the Santa Cruz Mountains and the Diablo Range, although individuals will occasionally disperse into the valley floor. No denning habitat is present on the project site, and mountain lions are expected to occur very infrequently in the project area owing to high levels of human activity and the impediments to dispersal posed by U.S. Route 101, Monterey Road, and other roads on the valley floor. While it is possible that occasional individuals could disperse onto the site, they would not linger owing to the lack of cover.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
California Species of Special Concern			
Western pond turtle (*Actinemys marmorata*)	CSSC, VHP	Occurs in ponds, streams, and other wetland habitats in the Pacific slope drainages of California (Bury and Germano 2008). Ponds or slack-water pools with suitable basking sites (such as logs) are an important habitat component for this species, and western pond turtles do not occur commonly along high-gradient streams. Females lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas (Jennings and Hayes 1994). Juveniles feed and grow in shallow aquatic habitats (often creeks) with emergent vegetation and ample invertebrate prey. Nesting habitat is typically found within 600 feet of aquatic habitat (Jennings and Hayes 1994), but if no suitable nesting habitat can be found close by, adults may travel overland considerable distances to nest.	**Absent as Breeder.** Western pond turtles are known to occur as close to the site as the San Pedro Percolation Ponds, where an individual was recorded 500 feet northwest of the project site (H. T Harvey & Associates 2012b). However, the aquatic habitats on the project site lack sufficient hydroperiod to support western pond turtles, and this species is not expected to reside or breed there. Individual turtles may occur infrequently on the site during dispersal events, albeit infrequently and in very low numbers.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Burrowing owl (*Athene cunicularia*)	CSSC, VHP	Prefers annual and perennial grasslands, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels; owls use the abandoned burrows of ground squirrels for shelter and nesting. The nesting season as recognized by the CDFW extends from February 1 through September 8. After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or they may migrate (Gorman et al. 2003); young birds disperse across the landscape from 0.1 to 35 miles from their natal burrows (Rosier et al. 2006).	**Absent as Breeder.** The VHP maps the Project site as providing "potential burrowing owl nesting/overwinter habitat depending on site specific conditions". However, burrowing owls have been extirpated as breeders from the Morgan Hill area over the past two decades, and none of the recent surveys by the Santa Clara Valley Habitat Agency have detected burrowing owls breeding anywhere in the project vicinity (e.g., Santa Clara Valley Habitat Agency 2020). While ostensibly suitable nesting and roosting sites for burrowing owls are present on the site (California ground squirrel burrows are sparsely clustered in several locations), the project site provides low-quality foraging and wintering habitat owing to the intensive cultivation, which limits the availability of the owl's prey. Thus, given the species' declines in abundance in the project vicinity in recent years and the scarcity of prey on the site, burrowing owls are not expected to breed, roost, or forage on the site with regularity. It is possible, however, that burrowing owls may occur on the site as infrequent transients or foragers in low numbers during winter and migration, and nonbreeders could occasionally roost in ground squirrel burrows on the site.
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting)	Open habitats interspersed with shrubs, trees, poles, fences, or other perches from which it can hunt. Nests are built in densely foliated shrubs or trees, often containing thorns, which offer protection from predators and on which prey items are impaled. The breeding season may begin as early as mid-February and extends through July.	**May be Present.** Loggerhead shrikes are known to nest in the project vicinity where open grassland, ruderal, or agricultural habitat with scattered brush, chaparral, or trees providing perches and nesting sites are present (Bousman 2007c). Moderately suitable nesting habitat is present on the project site, and up to one pair may nest in trees on or adjacent to the Project site.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees.	**Absent as Breeder.** Suitable night-roosting habitat for pallid bats is present on the project site in the abandoned farm buildings, and at least one individual was detected during focused acoustic surveys for roosting bats in June 2021. Surveys were performed from 15 minutes before sunset to one hour after sunset and detected two pallid bat calls. Results of the survey suggest that these individuals are using the building as a night roost. However, inspection of the buildings on the site revealed no evidence of day roosts; therefore, no maternity colonies are present. Individual pallid bats may forage on the open habitats on the project site.
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSSC	Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats.	**Absent as Breeder.** Suitable night-roosting habitat is present on the project site in the abandoned farm buildings, and one individual was detected during focused surveys for roosting bats in June 2021. Surveys were performed from 15 minutes before sunset to one hour after sunset and detected one Townsend's big-eared bat call. Results of the survey suggest that this individual is using the building as a night roost. However, inspection of the buildings on the site revealed no evidence of day roosts; therefore, no maternity colonies are present. Individual Townsend's big-eared bats may forage over the open habitats on the project site.
American badger (*Taxidea taxus*)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	**Absent as Breeder.** There are no records of American badger in the immediate vicinity of the project site, but the species is known to occur in grasslands in the project region. Suitable denning habitat for badgers is present in open grassland areas to the east of the project site. While badgers are not expected to den within or immediately adjacent to the project due to frequent agricultural activities and regular cultivation, which reduces the availability of mammalian prey, they may occasionally disperse onto the site from more suitable habitats to the east.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
State Fully Protected Species			
Golden eagle (*Aquila chrysaetos*)	SP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas.	**Absent as Breeder.** Golden eagles nest in the foothills to the east of the project site, with the nearest nest approximately 1.3 miles to the southeast (H. T. Harvey & Associates, 2019, unpublished data.) However, suitable nesting habitat is absent from the project site, and intensive cultivation reduces the abundance of this species' small mammal prey. Although golden eagles may occasionally forage on the site, they are expected to do so infrequently.
White-tailed kite (*Elanus leucurus*)	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	**May be Present.** White-tailed kites are common residents in open areas surrounding the project site, and trees on the project site provide nesting habitat for the species. Thus, white-tailed kites may forage in grassland and ruderal habitats in and surrounding the project site year-round, and up to one pair of kites may nest within the project site.

Key to Abbreviations:

Status: Federally Endangered (FE); Federally Threatened (FT); Proposed for Federal Listing as Threatened (PFT); Federal Candidate for Listing (FC); State Endangered (SE); State Threatened (ST); State Candidate (SC); State Fully Protected (SP); California Species of Special Concern (CSSC); Santa Clara Valley Habitat Plan Covered Species (VHP)

5.3 Sensitive Natural Communities, Vegetation Alliances, and Habitats in the Plan Area

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program in 1979. The CDFW determines the level of rarity and imperilment of vegetation types, and tracks sensitive communities in its Rarefind database (CNDDB 2023). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings are a reflection of the condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage program methodology as follows (Faber-Langendoen et al. 2012):

G1/S1: Critically imperiled

G2/S2: Imperiled

G3/S3: Vulnerable.

G4/S4: Apparently secure

G5/S4: Secure

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (Sawyer et al. 2009). If an alliance is marked G1-G3, all of the vegetation associations within it will also be of high priority (CDFW 2023). The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2023).

Impacts on CDFW sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (Title 14, Division 6, Chapter 3, Appendix G of the California Code of Regulations). Furthermore, aquatic, wetland and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS.

5.3.1 Sensitive Natural Communities

A query of sensitive habitats in the CNDDB (2023) identified two sensitive natural communities as occurring within the nine 7.5-minute USGS quadrangles containing or surrounding the project area: (1) sycamore alluvial woodland (Rank G1/S1.1) and (2) serpentine bunchgrass grassland (Rank G2/S2.2). Riparian woodland within the project area does not meet the definition of sycamore alluvial woodland, which is dominated by western sycamore (*Platanus racemosa*), and occurs within braided, depositional channels of intermittent streams, usually with cobble or boulder substrate (Holland 1986). Similarly, serpentine bunchgrass grassland does not occur within the project area.

5.3.2 Sensitive Vegetation Alliances

The seasonal wetland in the project area is dominated by non-native species, such as Himalayan blackberry, curly dock, short podded mustard, and poison hemlock. It does not closely align with any designated Alliance as described in the Manual of California Vegetation, 2nd Edition (Sawyer et. al. 2009). The mixed riparian forest and woodland within the project area is dominated by ruderal vegetation including foxtail barley, wild oats, ripgut brome, chicory, and short-podded mustard. These are all non-native species and do not compose a vegetation alliance that would be considered sensitive. The few oaks rooted within Tennant Creek are too sparse to be considered an alliance. Therefore, no sensitive vegetation alliances are present on the project site.

5.3.3 CDFW Riparian Habitat

Due to its rarity and disproportionately high habitat values and functions to wildlife, CDFW considers riparian habitat to be sensitive. As described above in Section 3.2.4, the CDFW would likely claim jurisdiction over areas at, and below, the top of bank lines on either side of Tennant Creek and the unnamed ephemeral stream regardless of the vegetative composition of these areas. In addition, CDFW jurisdiction would extend to the outer edges of riparian tree canopies, which in this case corresponds to the boundaries of the mixed riparian forest and woodland habitat as shown on Figure 3.

5.3.4 Sensitive Habitats (Waters of the U.S./State)

As described above under Section 3.1.1, Tennant Creek and the seasonal wetlands along Tennant Creek downstream from Barrett Avenue are expected to be considered waters of the U.S./state up to the OHW mark lines. Jurisdictional riparian buffers for waters of the state in the project area would likely extend up to the top of bank lines of the Tennant Creek, which within the project area encompasses the edges of riparian tree canopies. The ephemeral drainage in the eastern portion of the site that flows from Jackson Park may also be considered waters of the U.S. and waters of the state. More details about regulated habitats can be found in the Preliminary Delineation of Wetlands and other Waters (Appendix B).

5.4 Non-native Plant Species

Several nonnative, invasive plant species occur in the project area in either in the riparian habitats or in the agricultural land. Of these, the following have a rating of "limited" invasiveness (considered invasive but their ecological impacts are minor on a statewide level and their reproductive biology and other attributes result in low to moderate rates of invasiveness) according to the California Invasive Plant Council (Cal-IPC) (2023): red stemmed filaree, bristly ox-tongue, wild radish, milk thistle, narrow-leaved plantain, and curly dock. The following species have a "moderate" rating, indicating that they have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure, and that their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment would be generally dependent upon ecological disturbance: wild oats, ripgut brome, poison hemlock, stinkwort, short-podded mustard, blue gum tree, and Italian rye grass. Species with a "high" invasive rating by the Cal-IPC have the potential to cause severe ecological impacts on physical processes, plant and

animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment, and most are widely distributed ecologically (Cal-IPC 2023). Within the project area the following species with a "high" rating were observed: yellow star thistle, Himalayan blackberry, and perennial pepperweed. Yellow star thistle is most dense nearest the farm buildings. Himalayan blackberry is only located in the seasonal wetlands within Tennant Creek across Barrett Avenue from the project site. Perennial pepperweed is scattered throughout the agricultural field, mostly in the eastern half.

Section 6. Impacts and Mitigation Measures

CEQA and the State CEQA Guidelines provide guidance in evaluating impacts of projects on biological resources and determining which impacts will be significant. The Act defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project."

Appendix G of State CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G (Chapter IV) may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would:

A. "have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"

B. "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"

C. "Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means"

D. "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites"

E. "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"

F. "conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan"

The project's impacts to each land cover type are summarized in Table 3.

Table 3. Acreage of Impacts per Land Cover Type

Land Cover Type	Permanent Impacts (acres)	Temporary Impacts (acres)
Grain, Row-crop, Hay and Pasture, Disked/Short-term Fallowed	57.43	0.29
Rural-Residential	8.63	0.14
Golf Courses/Urban Parks	0.73	0.00
Urban Suburban	<0.01	0.00
Mixed Riparian Forest and Woodland	0.10	0.12
Riverine (Intermittent Stream)	0.01	0.04
Riverine (Ephemeral Stream)	0.02	0.00
Seasonal Wetland	0.02	0.01
Total	**66.94**	**0.61**

Potential impacts on biological resources as a result of the proposed project were systematically evaluated at the project level. These impacts were first evaluated to qualitatively describe how proposed project activities could impact biological resources, and whether impacts would be temporary (i.e., occurring only during project construction and the period immediately following) or permanent. Impacts were then evaluated with the application of any applicable VHP conditions (see below) with which the proposed project must comply to determine whether the impacts were significant (and thus required mitigation). All significance determinations are made assuming the project will comply with all VHP requirements and approved exceptions, including paying appropriate land cover and specialty fees.

6.1 Santa Clara Valley Habitat Plan

The proposed project is classified as an "Urban Development" project, which is a "covered project" under the VHP (ICF International 2012). Urban Development projects include construction of residential densities greater than one dwelling unit per 2.5 acres. The Santa Clara Valley Habitat Agency (SCVHA) leads the implementation of the VHP, which is a regional partnership between the CDFW, the USFWS, and six local partners, including the Santa Clara Valley Water District, the County of Santa Clara, Santa Clara Valley Transportation Authority, and the Cities of San José, Gilroy, and Morgan Hill. The VHP was adopted in 2013 by all local participating agencies, and permits were issued from the USFWS and CDFW. The VHP is both a habitat conservation plan and natural community conservation plan, or HCP/NCCP. The planning document helps private and public entities plan and conduct projects and activities in ways that lessen impacts on natural resources, including specific threatened and endangered species. The VHP identifies regional lands (called reserves) to be preserved or restored to the benefit of at-risk species, and describes how reserves will be managed and monitored to ensure that they benefit those species. In providing a long-term, coordinated planning for habitat restoration and conservation, the VHP aims to enhance the viability of threatened and endangered species throughout the Santa Clara Valley.

The VHP defines measures to avoid, minimize, and mitigate impacts on covered species and their habitats while allowing for the implementation of certain "covered projects". Chapter 6 of the VHP includes detailed and comprehensive conditions to avoid and minimize impacts on the 18 "covered species" (nine animal species and nine plant species) included in the plan area, which consists of 519,506 acres, or approximately 62% of Santa Clara County. These conditions are designed to achieve the following objectives:

- provide avoidance of certain covered species during implementation of covered activities throughout the project site;
- prevent take of individuals of certain covered species from covered activities as prohibited by law (e.g., take of fully protected species);
- minimize impacts on natural communities and covered species where conservation actions will take place; and
- avoid and minimize impacts on jurisdictional wetlands and waters throughout the study area to facilitate project-by-project wetland permitting.

In conformance with the VHP, project proponents are required to pay impact fees in accordance with the types and acreage of habitat or "land cover" impacted, and to implement conservation measures specified by the VHP. Land cover impacts are used because it is the best predictor of potential species habitat, and is applicable to all of the covered species (with the exception of the burrowing owl). The SCVHA has mapped the following three fee zones in the VHP area: (1) ranchland and natural lands, (2), agricultural and valley floor lands, and (3) small vacant sites (SCVHA 2023). The following areas are exempt from land cover fees:

- all development that occurs on land mapped by the VHP as urban-suburban, landfill, reservoir (excluding dams), or agriculture developed land cover types;
- urban development in Fee Zones A–C on parcels less than 0.5 acre;
- additions to structures within 50 feet of an existing structure that result in less than 5,000 feet of impervious surface so long as there is no effect on wetland or serpentine land cover types; and
- construction of recreational facilities within the reserve system.

Additional fees in-lieu of providing compensatory mitigation are imposed for projects that impact serpentine habitat, wetlands, and burrowing owls, and for certain projects that result in atmospheric nitrogen emissions, although in some cases, project proponents may provide land to restore or create habitats protected by the VHP in lieu of payment of fees.

The project area is located within the VHP Urban Service Area for the City of Morgan Hill, and within the VHP Private Development Area #4: Urban Development Equal to or Greater than 2 Acres Covered (Figure 6). The project would be required to pay VHP land cover fees. Regarding the VHP's land cover fee zones, the project area falls within Fee Zone B (Agricultural and Valley Floor Lands; Figure 6). The project area does not

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Figure 6. VHP Urban Service Area, Development Areas, and Fee Zones

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include lands mapped as occupied burrowing owl nesting habitat, and therefore no burrowing owl fee is necessary. However, the project will engender an anticipated 2,805 new daily vehicle trips by residents and is therefore required to pay the VHP fees for nitrogen emissions.

Following is a summary of the VHP conditions that are applicable to the project.

Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species

A number of wildlife species that occur in the project vicinity are protected under state and federal laws. Some of these animal species are listed as threatened or endangered under the Federal or California Endangered Species Act (e.g., California red-legged frog and California tiger salamander), some are fully protected under the California Fish and Game Code (e.g., the white-tailed kite), and eagles are protected under the Bald and Golden Eagle Protection Act. Further, all native bird species and their nests are protected under the MBTA and California Fish and Game Code. Actions conducted under the VHP must comply with the provisions of the MBTA and California Fish and Game Code.

Condition 3. Maintain Hydrologic Conditions and Protect Water Quality

Condition 3 applies to all projects and identifies a set of programmatic BMPs, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality, including during project construction. These requirements include preconstruction, construction site, and post-construction actions. Preconstruction conditions are site design planning approaches that protect water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume. They include hydrologic source control measures that focus on the protection of natural resources. Construction site conditions include source and treatment control measure to prevent pollutants from leaving the construction site and minimizing site erosion and local stream sedimentation during construction. Post-construction conditions include measures for stormwater treatment and flow control.

Condition 4. Avoidance and Minimization for In-Stream Projects

Condition 4 applies to projects that will occur within the bed and bank of streams and within the adjacent riparian corridor and requires the design of all such projects to minimize impacts on stream habitat and flows. Compliance with this condition also necessitates implementing the measures listed in Chapter 6 (Table 6-2) of the VHP.

Condition 11. Stream and Riparian Setbacks

Condition 11 applies to covered projects that may affect streams and associated riparian vegetation within the VHP plan area. This condition requires new covered projects to adhere to setbacks from creeks and streams

and associated riparian vegetation to minimize and avoid impacts on aquatic and riparian land cover types, covered species, and wildlife corridors. The standard required setback for Tennant Creek, a Category 2 stream located within the VHP-designated urban service area is 35 feet from the top of bank or from the riparian edge, whichever is greater.

Condition 17. Tricolored Blackbird

This condition applies to projects that are located within 250 feet of any riparian, coastal, and valley freshwater marsh and helps to protect tricolored blackbirds by prescribing preconstruction surveys, construction buffer zones, biological monitoring, and other requirements. If a project is located within 250 feet of habitat mapped as pond by the VHP, a qualified biologist must confirm that the pond land cover type is present. If a qualified biologist verifies that the project area is within 250 feet of pond habitat, a qualified biologist must conduct a field investigation to identify and map potential nesting substrate. If suitable nesting substrate is identified, avoidance and minimization measures must be implemented (see pages 4-43 to 4-44 of the VHP).

The proposed project is located within 250 feet of an area (i.e., Tennant Creek) that includes a small riparian land cover type. Therefore, per Condition 17 of the VHP, H. T. Harvey & Associates wildlife ecologist J. Lien, B.S., conducted a field investigation to identify and map potential nesting substrate for tricolored blackbirds on June 3, 2021. No suitable vegetation for nesting by tricolored blackbirds was present along the creek or elsewhere within 250 feet of the project site due to predominance of shorter ruderal vegetation and the absence of large stands of emergent vegetation. Thus, no additional surveys or avoidance and minimization measures are required.

6.2 Impacts on Special-Status Species: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (Less than Significant with Mitigation)

6.2.1 Impacts on Regionally Common Land Cover Types and Associated Common Plant and Wildlife Species (Less than Significant)

Proposed project activities would result in up to 66.89 acres of permanent impacts and 0.43 acre of temporary impacts (Figure 7) to regionally common land cover types, including grain, row-crop, hay and pasture, disked/short-term fallowed; rural-residential; golf courses/urban parks; and urban-suburban land cover types. This area to be impacted has been subject to annual disking and other disturbances in the last several decades, such that this area does not provide regionally rare or especially high-value habitat for native vegetation or wildlife, or special-status species. These proposed impacts would reduce the extent of vegetation within the impact area and would result in a reduction in abundance of some of the common plant and wildlife species that use the site. These four land cover types are abundant and widespread regionally, and are not particularly

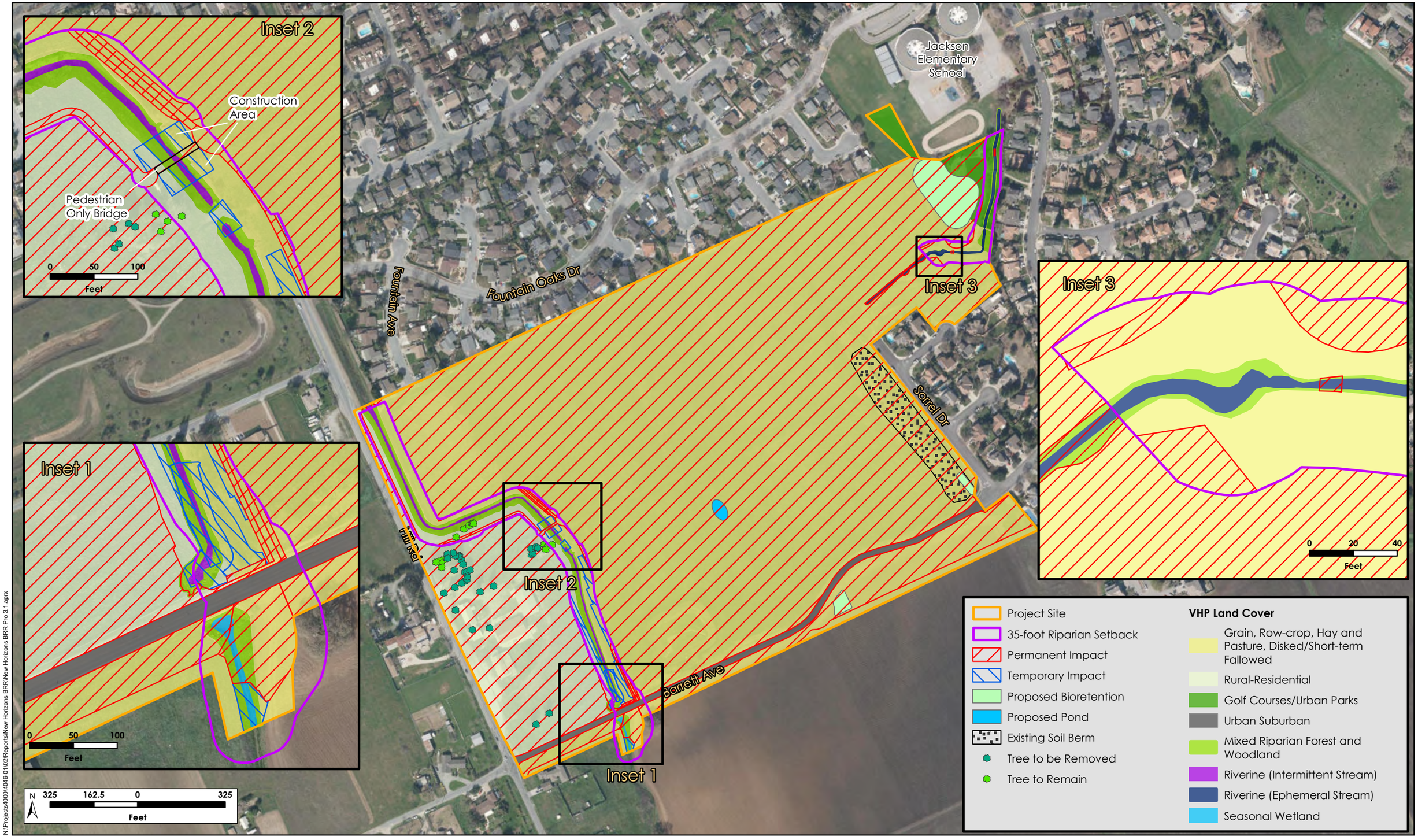

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Figure 7. Project Impacts
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sensitive, valuable (from the perspective of providing important plant or wildlife habitat), or exemplary occurrences of these land cover types. Therefore, impacts on these habitats are considered less than significant. Further, because the number of individuals of any common plant or animal species within these habitats, and the proportion of these species' regional populations that could be disturbed, is very small, the project's impacts would not substantially reduce regional populations of these species. Thus, these impacts do not meet the CEQA standard of having a *substantial* adverse effect and would not be considered significant under CEQA.

Although no mitigation is necessary to reduce project impacts on these four land cover types and associated plant and animal species to less-than-significant levels under CEQA, these species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

6.2.2 Impacts on Nonbreeding Special-Status Animals (Less than Significant with Mitigation)

Several special-status animal species could potentially occur in the project area as nonbreeding migrants, transients, or foragers, but they are not known or expected to breed in or very near the project site, or to occur in large numbers on the project site. These are the tricolored blackbird, bald eagle, golden eagle, American badger, mountain lion, Townsend's big-eared bat, pallid bat, California red-legged frog, California tiger salamander, and western pond turtle.

Tricolored Blackbird, Bald Eagle, Golden Eagle, Mountain Lion, and American Badger

The tricolored blackbird (a state threatened and VHP-covered species), bald eagle (a state endangered and fully protected species), and golden eagles (a state fully protected species) do not breed on or very close to the project site, but individuals may occur occasionally as foragers, especially during the nonbreeding season. The mountain lion (a state candidate species) and American badger (a California species of special concern) may occur as occasional dispersants or foragers on the project site but are not expected to establish breeding dens in or near the project site or make use of these areas regularly due to high levels of human disturbance.

The proposed project would impact foraging habitat, and could potentially disturb individuals, of these species. Construction of the proposed project will result in a temporary direct impact through the alteration of foraging patterns (e.g., avoidance of work sites because of increased noise and activity levels during construction activities) but would not result in the loss of individuals, as individuals of these species would move away from any construction areas or equipment before they could be injured or killed.

Construction of the proposed project will also result in direct permanent loss of these foraging habitats. However, the land cover types on the project site do not provide important foraging habitat used regularly or by large numbers of individuals of any of these species; rather, on-site land cover types are of low quality for these species due to regular cultivation and correspondingly small numbers of available prey species. Further,

the land cover types to be impacted represent only a very small proportion of regionally available foraging habitat for these species. As a result, foraging habitat losses under the proposed project will have little impact on these species' total available foraging habitat and no substantive impact on regional populations of these species. Therefore, this impact would be less than significant under CEQA. Although no mitigation is necessary to reduce project impacts on these species to less-than-significant levels under CEQA, these species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

Burrowing Owl

The burrowing owl (a California species of special concern and VHP-covered species) is not known or expected to nest on or very close to the project site, but it may occur as a wintering resident or migrant, and nonbreeding individuals could potentially forage and roost in the project area in small numbers. The project site does not provide high-quality roosting habitat for this species due to the paucity of ground squirrel burrows on most of the site, and cultivation reduces prey availability for owls. Nevertheless, to the extent that burrowing owls use the project site, project activities could potentially disturb foraging and roosting individuals, and it could result in the loss of foraging and roosting habitat. Because they roost underground, burrowing owls may be killed or injured during construction activities if occupied burrows are destroyed or compacted by heavy equipment. Construction activities that occur in close proximity to active burrows may disturb owls to the point of abandoning their burrows, exposing them to increased predation risk as they disperse. Due to the rarity of the burrowing owl in the region and the effects on burrowing owl populations of the loss of any individuals, the loss of individual burrowing owls would be significant under CEQA. The implementation of Mitigation Measure 1 below will reduce these impacts to less than significant levels under CEQA.

Mitigation Measure 1. Burrowing Owls. To minimize impacts on burrowing owls, the following measures will be implemented.

- **Preconstruction Surveys for Burrowing Owls.** Preconstruction surveys for burrowing owls will be conducted prior to the initiation construction activities within suitable burrowing owl roosting habitat (i.e., ruderal grassland habitat or agricultural lands with burrows of California ground squirrels), or within 250 feet of this habitat. During the initial site visit, a qualified biologist will survey the entire project site and (to the extent that access allows) areas within 250 feet by walking transects with centerlines no more than 50 feet apart and ensure complete visual coverage and looking for suitable burrows that could be used by burrowing owls. If no suitable burrows are present, no additional surveys are required. If suitable burrows are determined to be present within 250 feet of the project impact areas, a qualified biologist will conduct a second survey to determine whether owls are present in areas where they could be affected by proposed activities. The surveys will last a minimum of three hours, beginning one hour before sunrise and continuing until 2 hours after sunrise or beginning 2 hours before sunset and continuing until 1 hour after sunset. The

first survey may occur up to 14 days prior to the start of construction activities in any given area, and the second survey will be conducted within two days prior to the start of construction activities.

- **Implement Buffer Zones for Burrowing Owls.** If burrowing owls are detected during the pre-activity survey, a 250-foot buffer, within which no newly initiated construction-related activities will be permissible, will be maintained between construction activities and occupied burrows. Though highly unlikely, owls present between February 1 and September 8 will be assumed to be nesting, and the 250-foot protected area will remain in effect until September 8, or until the burrow is no longer occupied, whichever occurs first.

- **Monitor Owls during Construction.** If maintaining a 250-foot buffer around active owl burrows is not feasible, the buffer may be reduced if (1) the individual or nest is not disturbed, and (2) the contractor develops an avoidance, minimization, and monitoring plan that will be reviewed and approved by the CDFW and USFWS prior to project description. The plan will include the following measures:
    - A qualified biologist will monitor the owls for at least three days prior to construction as well as during construction.
    - If the biologist observes no change in the owls' nesting or foraging behavior, construction activities may proceed.
    - If changes in the owls' behaviors as a result of work activities are observed, activities will cease within 250 feet of the active burrow location(s). Work activities may resume when the burrows are no longer occupied.
    - If monitoring indicates that the burrow is no longer in use by owls, the disturbance-free buffer may be removed.

Because passive relocation of burrowing owls is not allowed under the VHP at this time, if an owl persists on the site within an area where construction cannot feasibly be delayed, the applicant will coordinate with the VHP to determine the next steps.

Although no compensatory habitat mitigation is necessary to reduce project impacts on burrowing owls to less-than-significant levels under CEQA, this species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

Townsend's Big-eared Bat, Pallid Bat, and other Roosting Bats

Small numbers of Townsend's big-eared bat and pallid bat (California species of special concern) were recorded using an abandoned barn on the project site as a night roost. The California myotis was also recorded, and it is possible that other common bats may roost on the site. Based on a focused survey of buildings on the project site, there is no evidence that bats are day-roosting on the site, and therefore it is unlikely that bats breed on the site. Rather, the individuals that were detected likely day-roost and breed off-site and only forage on the project site, occasionally night-roosting in small numbers as they do so. The proposed project will result in the

direct loss of foraging habitat, as well as night-roosting habitat when the existing buildings are demolished. However, the number of bats using the site is low, no maternity colonies are present, and these species are not likely limited by night-roosting sites, especially in such small numbers. Furthermore, although bats could forage over (or in the case of pallid bat, on) the site itself, the site represents a small proportion of regionally available foraging habitat, and it is of lower quality due to decades of agricultural activities and recent regular cultivation, which reduces the amount of invertebrate prey on the site. Individuals detected on the site are more likely to forage over native grasslands in the hills to the east, where prey is more abundant, than on or over the project site. Thus, project activities would impact a very small fraction of the regionally available habitat of these species, and would not rise to the CEQA standard of having a substantial adverse effect.

Nevertheless, if bats do day-roost on the site, individual bats could be impacted when buildings are demolished. Individual bats could be physically injured or killed, could be subjected to physiological stress from being disturbed during torpor, or could face increased predation because of exposure during daylight. Although the likelihood of such impacts is low, due to the lack of evidence that day-roosting occurs, some of the existing buildings could potentially be used in the future by day-roosting bats. Loss of individual Townsend's big-eared or pallid bats could be significant because of the rarity of these species in the region: loss of individuals would have a substantial adverse effect on local and regional populations of the species. Implementation of Mitigation Measure 2 would reduce project impacts on roosting bats to a less-than-significant level.

Mitigation Measure 2. Avoid and Minimize Impacts on Roosting Bats. To minimize impacts on roosting bats, the following measures will be implemented:

- A pre-activity survey for day-roosting bats will be conducted prior to the onset of demolition of existing buildings or ground-disturbing activities within 100 feet of existing buildings. A qualified biologist will conduct a survey for evidence of bat use within suitable habitat. If evidence of use is observed, but the biologist is unable to determine whether or not the roost is occupied at that time, a dusk acoustic survey may be necessary to determine if bats are present and to identify the specific location of any bat colony.
- If no active bat day roost is located, no further measures are necessary.
- If an active day roost is located during the maternity season (March 15-July 31), the biologist will attempt to determine whether the roost is occupied by nonbreeding bats (e.g., a bachelor roost consisting of males) or whether the roost is occupied by females with young. If females with young are present, a disturbance-free buffer zone (determined by a qualified bat biologist) will be implemented until July 31, or until the young are able to fly independently (whichever occurs first).
- If a non-maternity roost is present during the maternity season, or during the nonmaternity season, the individuals will be safely evicted between August 1 and October 15 or between February 15 and March 15 under the supervision of, and following eviction methods developed by, a qualified biologist. Demolition or construction can begin after the bats have been evicted.

- Although no compensatory habitat mitigation is necessary to reduce project impacts on roosting bats to less-than-significant levels under CEQA, these species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

California Red-legged Frog, California Tiger Salamander, and Western Pond Turtle

Three VHP-covered species, the California tiger salamander (a federally threatened and state threatened species), California red-legged frog (a federally threatened species and California species of special concern), and western pond turtle (a California species of special concern) have a very low potential to occur on the project site as dispersants, and California tiger salamanders (and possibly California red-legged frogs) may take refuge in small mammal burrows on the site. These species are assessed together because they are expected to occur on the site only in very low numbers, if at all, and because compliance with VHP conditions is expected to avoid and minimize impacts on these species and their habitats.

The project site provides low-quality foraging and dispersal habitat and offers very little upland refugial habitat. Furthermore, the project site is not important to the maintenance of any populations of these species, as the project site is near the limit of their known dispersal distances, and it is not located between two or more aquatic habitat areas such that individuals would move back and forth over the site between higher-quality habitat off-site. The project does, however, have potential to result in the loss of small numbers of individuals (e.g., during construction activities). For example, project activities may result in the injury or mortality of individuals as a result of worker foot traffic, equipment use, or vehicle traffic. Seasonal movements may be temporarily affected during project activities because of disturbance, and substrate vibrations may cause individual frogs or salamanders to move out of refugia, exposing them to a greater risk of predation or desiccation. In addition, petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals, although BMPs to control releases of such chemicals make this unlikely. Due to their rarity, any loss of individuals of these species would be considered significant under CEQA. Compliance with VHP conditions, including payment of VHP impact fees, will reduce the impacts described above to less-than-significant levels.

The proposed project includes plans for a small ornamental pond. If the pond provided high-quality habitat to support large numbers of nonnative bullfrogs (*Lithobates catesbeianus*), those bullfrogs might disperse into ponds to the east and southeast that support the California red-legged frog, California tiger salamander, and western pond turtle, where bullfrogs might prey on and compete with those native species. However, the pond will be small, lined with concrete, and filled with continually recirculating water. Due to the artificial nature of this pond, coupled with its small size, this pond would not support large numbers of bullfrogs. Therefore, the proposed project will not impact native reptiles and amphibians by supporting large populations of bullfrogs.

6.2.3 Impacts on the Monarch Butterfly (Less than Significant with Mitigation)

The monarch butterfly (a federal candidate species) occurs in the project region primarily as a migrant, and no current or historical overwintering sites are known as far inland as the project site, so no large nonbreeding aggregations would occur on the project site. However, a number of narrow-leaf milkweed plants observed during the June 2021 reconnaissance surveys could potentially be used by monarchs for breeding. Adults may lay their eggs on those plants, and larvae would eat the milkweed plants while maturing. Breeding could potentially occur from March through October.

In the absence of mitigation measures, if monarch butterfly eggs, larvae, or pupae were present on larval host plants on the project site, project activities could impact this rare and declining species. Heavy equipment use, vehicle traffic, and worker foot traffic within impact areas could result in the injury or mortality of monarch butterflies (including eggs, larvae, and pupae) or their host plants (e.g., physically breaking, crushing, wilting, burying, or uprooting plants and damaging their roots as a result of soil disturbance by heavy equipment). In addition, monarch butterflies and their host plants may be affected by petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment. Due to recent declines in West Coast populations of the monarch butterfly, impacts to individuals of this species would be considered significant under CEQA. Implementation of Mitigation Measure 3 would reduce Project impacts on the monarch butterfly to a less-than-significant level.

Mitigation Measure 3. Avoidance of Impacts to Individuals. The following measures will be implemented to determine whether monarch butterfly eggs, larvae, or pupae are present, and if so, to avoid impacts to individuals.

- In the San Francisco Bay area, monarch butterflies may begin laying eggs as early as March, and the last generation of the year hatches in September and October. Therefore, if milkweed plants are impacted from November through February, they are not expected to support eggs, larvae, or pupae, and no measures are necessary for project activities during the period November 1 through the end of February.
- Prior to disturbance of any vegetated habitat that could support milkweed during the period March 1 through October 31, surveys will be performed for the species' larval host plants. This survey will occur within 2 weeks prior to the start of construction. A qualified biologist will survey the project impact areas, as well as surrounding areas within 50 feet (to the extent access allows), to identify any larval host plants. Any detected host plants will be checked for eggs, larvae, or pupae. If no host plants are detected, or if no monarch eggs, larvae, or pupae are detected on those plants, no further action will be necessary.
- If monarch eggs, larvae, or pupae are detected, one of the following measures will be implemented:
    - They will be protected by establishing a buffer zone around individual plants or populations. The buffer zone will be determined by a qualified biologist to avoid direct impacts and indirect impacts (such as dust mobilization onto plants) on the monarchs and the plants on which eggs, larvae, or pupae occur. Project personnel and equipment will not operate within such areas. All avoided larval host plants will

be clearly marked in the field with fencing or flagging. The buffer zone will remain in place until monarchs are no longer present on those plants.

- If larvae are detected within the survey area and impacts to the plants supporting those individuals cannot be delayed until the emergence of individual butterflies as adults, a qualified biologist may relocate larvae to milkweed plants more than 50 feet outside the impact area, if those milkweeds are not already occupied by monarch eggs or larvae. Alternatively, raising monarch butterflies in captivity is feasible, and eggs, larvae, or pupae that cannot be avoided could be raised to maturity in captivity and then released into habitat having suitable nectar sources. Only a qualified biologist will handle or raise monarchs. If the monarch butterfly is listed (e.g., under FESA) prior to implementation of these measures, appropriate approval from the USFWS would be necessary to handle or relocate monarchs, or to raise them in captivity.

No compensatory habitat mitigation is necessary to reduce project impacts on monarch butterflies to less-than-significant levels under CEQA, as suitable breeding and nectaring habitat for this species in the region is abundant and widespread, relative to the lower numbers of individuals that occur in the region. Nevertheless, this species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

6.2.4 Impacts on Crotch's Bumble Bee (Less than Significant)

Crotch's bumble bee is not known to occur on the project site, and the nearest known, recent occurrence is from an area approximately 2.7 miles from the site. Due to the frequent disking of the project site and lack of less disturbed grassland or scrub supporting high-quality nectar and pollen sources, this species is not expected to be present on the site regularly or in numbers. However, community science efforts to look for the species, including California Bumble Bee Atlas field work, have detected it in scattered locations in Santa Clara County since 2019 (Bumble Bee Watch 2023, iNaturalist 2023). Because Crotch's bumble bee can nest in small mammal burrows, which are present on the project site, and use a variety of flowering plants as nectar and pollen sources, the species could potentially occur, and even breed, in small numbers on the site.

Project activities could impact Crotch's bumble bee through a loss of habitat. Although the species could potentially use virtually any area on the site that provides flowering plants for foraging or burrows or other sites for nesting, habitat quality is not high, as discussed above. Heavy equipment use and grading could result in the loss of nests if any are present during construction.

Crotch's bumble bee is not currently a covered species under the VHP, though it is proposed for addition as a covered species via the VHP amendment currently in progress. Even if the species is not formally added to the VHP as a covered species, the project's compliance with VHP conditions would help reduce project impacts on this species by reducing impacts to biological resources in general. In addition, if the proposed project impacts the species at all, it would impact only a very small proportion of the species' regional population, given that the project site provides low-quality habitat. Further, Crotch's bumble bee will benefit from the VHP conservation program (i.e., the preservation, enhancement, and management of numerous habitat types

throughout the VHP Reserve System) to which the project applicant would contribute via payment of VHP impact fees. As an NCCP, the VHP's reserve system will benefit whole communities of plant and animal species in Santa Clara County, including many common and rare animal species. The reserve system will benefit Crotch's bumble bee based on the wide distribution of this species' habitats in Santa Clara County, the known occurrence of the species on some existing VHP reserves, and its expected occurrence on future acquisitions, given the locations of recent occurrences in Santa Clara County. Therefore, with the payment of VHP fees and compliance with the VHP's conditions, the potential loss of small numbers of individual Crotch's bumble bees as a result of the project, as well as the permanent loss of potential nesting and foraging habitat, would not constitute a significant impact on this species or its habitat under CEQA, in our opinion, because the VHP is expected to have a net benefit on the conservation of this species. Therefore, these impacts would not constitute a significant impact on this species or its habitat under CEQA.

6.2.5 Impacts on the Loggerhead Shrike and White-Tailed Kite (Less than Significant)

The loggerhead shrike (a California species of special concern) could potentially nest in shrubs and small trees within and immediately adjacent to the project site, and individuals may forage in surrounding open habitats year-round. The white-tailed kite (a state fully protected species) may nest in trees in and surrounding the project site, and individuals may forage in ruderal and agricultural habitats in and near the project site year-round. The loggerhead shrike and white-tailed kite are assessed together because the potential impacts of the project on these species would be similar.

No individuals of these species were observed during site surveys, but both species have been observed nearby in the past (S. Rottenborn, pers. obs.), so there is some potential for these species to occur on the site. Based on site observations, the areal extent of suitable habitats in the project area, and known breeding densities of these species, it is likely that no more than one pair of each species could potentially nest within or immediately adjacent to the project site. The project would result in the temporary and permanent loss of suitable nesting and foraging habitat for these species due to the construction activities and conversion of open habitats to residential structures. In addition, activities that occur during the nesting season and cause a substantial increase in noise or human activity near active nests of loggerhead shrikes or white-tailed kites may result in the abandonment of active nests (i.e., nests with eggs or young). Heavy ground disturbance, noise, and vibrations caused by project activities could also potentially disturb nesting and foraging individuals and cause them to move away from work areas.

Because the number of nesting pairs of each species that could be disturbed is very small (i.e., only one pair of each species) the impacts of project activities would represent a very small fraction of the regional population of these species. Furthermore, the agricultural and low-quality riparian habitats on the project site represent a very small fraction of the regionally available habitat for the species. Therefore, neither the potential loss of individual loggerhead shrikes or white-tailed kites, nor the disturbance and/or loss of nesting and foraging habitat, would rise to the CEQA standard of having a *substantial* adverse effect, and these impacts would thus not constitute a significant impact on this species or its habitat under CEQA. All native bird species, including white-tailed kites, are protected from direct take by federal and state statutes, and the project will comply with

VHP Condition 1 either by restricting work to the non-nesting season (September 1 through January 31) or by conducting preconstruction surveys prior to project activities and maintaining appropriate buffers around active nests of protected birds. Therefore, the project will implement measures to ensure that active nests of these species are not destroyed or disturbed by project activities.

Although no mitigation is necessary to reduce project impacts on the loggerhead shrike and white-tailed kite to less-than-significant levels under CEQA, these species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

6.2.6 Nitrogen Emission Impacts on Serpentine Species and Communities (Less than Significant)

Some of the plant communities on hills surrounding the Santa Clara Valley grow on serpentine rock or soils derived from serpentine. Most soils derived from serpentine rock are highly infertile because of their extremely high levels of magnesium, chromium, and nickel; low concentrations of nutrients such as calcium and nitrogen; and low water-holding capacity. A unique group of vascular plant species that can tolerate these conditions has evolved in response to these conditions, whereas most nonnative plants, such as European grasses that dominate grassland throughout much of the region, cannot thrive on serpentine-derived soils. As a result, serpentine plant communities tend to be dominated by native species, including a number of special-status species. These include the federally endangered Santa Clara Valley dudleya (*Dudleya abramsii* ssp. *setchellii*), Metcalf Canyon jewel-flower (*Streptanthus glandulosus* ssp. *albidus*), and Coyote ceanothus (*Ceanothus ferrisiae*); the federally endangered and state threatened Tiburon paintbrush (*Castilleja affinis* ssp. *neglecta*); and a number of other rare plants, including Mt. Hamilton thistle (*Cirsium frontinale* var. *campylon*), fragrant fritillary (*Fritillaria liliacea*), most beautiful jewelflower (*Streptanthus glandulosus* ssp. *glandulosus*), smooth lessingia (*Lessingia micradenia* var. *glabrata*), and Loma Prieta hoita (*Hoita strobilina*). All of these species are covered plants under the VHP. In addition, the federally threatened and VHP-covered bay checkerspot butterfly (*Euphydryas editha bayensis*) relies on serpentine grasslands, which support its larval host plants dwarf plantain (*Plantago erecta*), dense-flowered owl's clover (*Castilleja densiflora*), and purple owl's clover (*Castilleja exserta*).

No serpentine plant communities or Bay checkerspot butterflies are present within the project area, and none will be directly impacted by the project. However, it is possible that the project could result in indirect impacts on serpentine communities off-site by releasing nitrogen compounds from equipment involved in project construction, and from vehicles of the new residents of the project. It has been demonstrated that the fertilization of serpentine grasslands with nitrogen allows some non-native grasses, particularly Italian rye grass, to be more competitive and become dominant, typically at the expense of native plants (Huenneke et al. 1990). Weiss (1999) described how moderate, well-managed grazing is necessary to prevent large-scale invasion of serpentine grassland by non-native grasses. In the absence of grazing, Bay checkerspot butterflies disappeared from ungrazed areas due to declines in densities of their larval host plants. Weiss (1999) further provided evidence that dry nitrogen deposition resulting from smog facilitates the invasion of serpentine grassland by non-native plants. As a result, the VHP concluded that increases in nitrogen emissions from increased traffic

associated with development projects in the South Bay could adversely affect serpentine plant and animal communities.

Construction of the project will result in an estimated 2,805 new daily trips from vehicles of residents of the new development. This increased activity will result in an increase in NOx emissions, which in turn will contribute to the effects of nitrogen deposition on serpentine plant and animal communities. The project will pay a nitrogen deposition fees in accordance with VHP conditions to compensate for this impact. VHP impact fees are then used by the Santa Clara Valley Habitat Agency to manage serpentine communities for the benefit of serpentine-associated special-status species. Therefore, project impacts on serpentine communities and species will be less than significant.

6.2.7 Impacts on Special-Status Plant Species (No Impact)

As discussed in Section 5.1, no suitable habitat for special-status plants is present on the project site. The project area is not located within Plant Survey Areas identified by the VHP, and based on the verified land cover map (Figure 3) it was determined that no suitable habitat (i.e., serpentine bunchgrass grassland, serpentine rock outcrop, serpentine seep, mixed serpentine chaparral, mixed oak woodland and forest with serpentine soils, coast live oak forest and woodland with serpentine soils, or northern coastal scrub and Diablan sage scrub with serpentine soils) for any of the nine VHP-covered plant species is present in the project area. Thus, the project will have no impacts on special-status plants.

6.3 Impacts on Sensitive Communities: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS (Less Than Significant)

6.3.1 Impacts on Riparian Habitat or Other Sensitive Natural Communities (Less than Significant)

The CDFW defines sensitive natural communities and vegetation alliances using NatureServe's standard heritage program methodology (CDFW 2023), as described above in Section 5.3. Aquatic, wetland, and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS (see Section 6.4 below). Project impacts on sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, were considered and evaluated.

The mixed riparian forest and woodland onsite occurs in or near the banks of Tennant Creek and the unnamed ephemeral stream. The majority of ground-disturbing project impacts (i.e., project construction) will occur outside the top of banks of Tennant Creek. However, some modifications to the creek banks are proposed. Therefore, some of the riparian habitat will require removal. These modifications are described in more detail below. Despite the avoidance measures incorporated into the project design and implementation plan, the proposed project will require up to 0.13 acre of permanent impacts to riparian and stream habitats, including

mixed riparian forest and woodland, riverine (intermittent stream), and riverine (ephemeral stream), resulting from bank shading by the new bridge, widening Barrett Avenue, placement of riprap downstream of the new culvert outlet south of Barrett Avenue, construction of a high-flow diversion from the ephemeral stream into a detention basin and the outfall from that basin back into the ephemeral stream, and loss of the low riparian banks associated with the ephemeral stream that will be piped for 287 linear feet for development. Additionally, 0.16 acre of temporary impacts will occur within the mixed riparian forest and woodland and intermittent stream resulting from the construction area around the pedestrian bridge, the culvert removal, and realigning Tennant Creek north and south of Barrett Avenue, shown in Figure 7.

A pedestrian bridge will be constructed across Tennant Creek in the northern portion of the site. The bridge will permanently shade less than 0.01 acre of riverine (intermittent) habitat and 0.01 acre of mixed riparian forest and woodland. The construction disturbance associated with installation of this bridge will take place within a 30-foot buffer of the upstream and downstream edges of the bridge, temporarily impacting 0.01 acre of riverine (intermittent) habitat and 0.03 acre of mixed riparian forest and woodland.

An existing culvert carrying an old farm road over Tennant Creek is proposed to be removed (Photo 6, Appendix D). The slopes will be graded to match the adjacent slope grades. While this activity will result in impacts to less than 0.01 acre of riverine (intermittent) habitat and less than 0.01 acre of mixed riparian forest and woodland, it is considered to be a temporary impact as the new grassy banks are expected to provide similar habitat to the existing banks within a year of construction. No riparian habitat will be lost as this activity will ultimately increase the area of riparian habitat within this reach of Tennant Creek by 0.01 total acre by restoring this area back to stream habitat.

Project implementation will result in the conversion of a portion of an existing ephemeral stream to an underground storm drain. This stream transports flows from Jackson Park and currently ends at an existing storm drain where the flow continues across the project site and ends in an existing bioretention basin. Piping of this channel will result in permanent impacts to 0.05 acres of mixed riparian forest and woodland and 0.02 acre of riverine (ephemeral stream) habitat.

A portion of Tennant Creek immediately north of Barrett Avenue will be realigned to straighten the water course flowing southward into the Barrett Avenue culvert. The 137-foot-long reach of Tennant Creek will be rerouted to address an area of scour at the existing culvert inlet and align with the proposed new culvert under Barrett Avenue. This activity will temporarily impact 0.03 acre of riverine habitat and 0.05 acre of mixed riparian forest and woodland. These impacts are considered temporary because the plant species that currently exist in this portion of the creek are ruderal and will reestablish in the new creek alignment within one year. The Barrett Avenue culvert will be improved concurrently with the improvements proposed to the surface of Barrett Avenue as it is widened. The widening of Barrett Avenue within the 35-foot riparian buffer is not considered an encroachment because culvert improvement is a water-dependent activity.

The portion of Tennant Creek immediately south of Barrett Avenue and off the project site contains mixed riparian forest and woodland from the top of bank down to the toe of slope. Low quality seasonal wetlands occur below the toe of the riprap slope that contains the existing culvert. The wetlands support sparse non-native plant species such as Himalayan blackberry and non-native forbs. This culvert is proposed to be improved during project construction, resulting in permanent impacts to 0.01 acre of seasonal wetlands and 0.01 acre of mixed riparian forest and woodland (Figure 7).

Impacts on riparian habitat will be minimized through implementation of VHP Conditions 3 and 4, which require implementation of design phase, construction phase, and post-construction phase measures, including programmatic BMPs, performance standards, and control measures, to minimize increases of peak discharge of storm drain water and to reduce runoff of pollutants to protect water quality, including during construction. The required construction-period BMPs and post-construction stormwater requirements will apply to the project as discussed above in Section 6.2.2, and these requirements would further avoid and reduce these impacts. To inhibit the spread of non-native, invasive plant species in areas of ground disturbance, VHP Condition 3 includes a measure requiring the revegetation of all disturbed soils with native plants and/or grasses suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used, if available. Also, the project will pay VHP impact fees for impacts of the project on natural habitats, including riparian/stream impact fees. Those fees will contribute to the VHP's conservation program, which includes restoration, enhancement, and management of riparian habitats, thus compensating for impacts of VHP-covered projects on riparian habitats. The Santa Clara Valley Habitat Agency uses these fees to fund the acquisition and restoration of similar riparian habitats within the Plan area, thus compensating for the small loss of riparian habitat. Because the project will comply with VHP conditions, including payment of impact fees, impacts to riparian habitat will be less than significant.

6.3.2 Impacts on Water Quality (Less than Significant)

Impacts on water quality in Tennant Creek could potentially occur as a result of sediment mobilization or contaminant spills. Indirect impacts on water quality, the local groundwater aquifer, or on general water quality are unlikely due to the distance between these activities and the creek and the filtration process when contaminants leach through the soil horizons; however, the potential for water quality impacts due to these activities cannot be ruled out. Indirect impacts on water quality from sediment mobilization would be further avoided and minimized by implementing erosion and sediment control measures, as well as BMPs for work near aquatic environments.

Construction projects in California causing land disturbances that are equal to 1 acre or greater must comply with state requirements to control the discharge of storm water pollutants under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project, and it must include the use of BMPs to protect water quality until the site is stabilized. Standard permit conditions under the Construction General Permit

require that the applicant utilize various measures including on-site sediment control BMPs, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors.

In many Bay Area counties, including Santa Clara County, projects must also comply with the California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit (Water Board Order No. R2-2015-0049). This permit requires that all projects implement BMPs and incorporate Low Impact Development practices into the design to prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site after construction has been completed. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors.

Thus, with compliance with VHP Conditions 3 and permit requirements, potential project impacts on water quality would be less than significant under CEQA.

6.3.3 Impacts due to Encroachment into the Riparian Setback (Less than Significant with Mitigation)

To protect the ecological functions and values of a stream, buffers are often prescribed between new development and the stream (or its banks or associated riparian habitat). These buffers provide habitat for plants and animals associated with the stream, provide habitat connectivity (i.e., areas used for wildlife movement, including flight paths for birds), reduce indirect effects of adjacent development (e.g., noise, lighting, human activity, or invasive species) on the natural stream and riparian habitats, allow for the possible future expansion of natural habitat, help to maintain site hydrology, and in some areas allow for runoff to be treated (e.g., by flowing through vegetated areas) before it enters the stream. In addition, along streams such as Tennant Creek and the unnamed ephemeral stream, vegetative communities within stream buffers may provide important refugia for animals associated with wetland and riparian habitats along the river during flood events, when little to no such refugia may be present within the banks of the river itself.

In general, larger buffers protect more of the ecological functions and values of the stream than smaller buffers. Encroachment into the riparian buffer, such as development within the buffer, would represent a significant impact because of the ecological value of Tennant Creek (and to a lesser extent the unnamed ephemeral stream) and the degradation to that value that would occur due to encroachment.

The VHP, specifically Condition 11 discussed in Section 6.1 above, includes measures meant to limit development and protect sensitive riparian resources. The condition states that the standard required setback for Tennant Creek and the unnamed ephemeral stream, which are Category 2 streams located within the VHP-designated urban service area, is 35 feet from the top of bank or from the riparian edge, whichever is greater and that development of new buildings and roads generally should be set back 35 ft from the riparian corridor defined by the outer edge of riparian vegetation. The City of Morgan Hill, in Section 18.92.110 of the Municipal

Code, also defines these creeks as Category 2 streams, requiring a setback of 35 feet. The 35-foot setback along Tennant Creek is depicted on Figure 8, and the 35-foot setback along the ephemeral stream is depicted on Figure 9. Note that because the project proposes to realign a portion of the creek just upstream from Barrett Avenue, and creek setbacks should be applied to future development along the creek as it will co-exist with that future development, the 35-ft setback depicted on Figure 8 is measured from the creek as it will appear following its realignment.

Under the proposed project, some portions of the 35-ft riparian setback along these creeks would be modified in some way (Figure 8). Currently, along Tennant Creek, this setback is composed of grain, row-crop, hay and pasture, disked/short-term fallowed on the east side of the creek and rural-residential on the west side of the creek. Along the ephemeral stream, the setbacks include grain, row-crop, hay and pasture, disked/short-term fallowed as well as golf course/urban park land uses. All of these habitats are highly disturbed by human activity. Project implementation would result in a total of 0.57 acre of permanent impacts and 0.46 acre of temporary impacts within the 35-foot setbacks along these streams. Of these impacts to the setback, 0.39 acre of permanent impacts and 0.46 acre of temporary impacts would result from pedestrian trails (including the pedestrian bridge) and their construction area, stream realignment, Barrett Avenue widening, removal of the existing culvert carrying the farm road over Tennant Creek, and the subsurface stormwater treatment chambers; all of these activities are allowable uses in VHP riparian setbacks and will not require a riparian setback exception. The remaining 0.18 acre of permanent impact within the riparian setback would result from an emergency access road, a portion of a residential lot, and grading for a detention basin, which are not allowed uses within the setback and are therefore considered a riparian setback encroachment for CEQA purposes.

Three activities partially overlap within the buffer. The pedestrian trail overlaps with the emergency road by 0.06 acre. Therefore, of the 0.16 acre of the emergency road footprint, only 0.10 acre is considered an encroachment into the riparian setback. Additionally, the emergency road and pedestrian trail together would cover a portion of the subsurface stormwater treatment chambers. However, because the chambers would be underground, its acreage of allowable usage is not affected by the overlapping activities.

Construction of subsurface stormwater treatment chambers resulting temporary impacts within the riparian setback is consistent with the requirements for a Municipal Regional Stormwater NPDES Permit and would result in a beneficial impact on Tennant Creek because it is expected to improve the quality of runoff entering the creek from the project site over existing conditions. The construction of the chambers would be considered a temporary impact as these areas will be planted with native beneficial vegetation.

Under the VHP, trails, bridge crossings, culvert work, and stormwater treatment features are allowable uses in riparian setbacks and are exempt from setback requirements. However, 0.10 acre of the emergency access road, 0.02 acre of a residential lot, and 0.06 acre of grading for a detention basin, totaling 0.18 acre, are not allowed uses within the setback and are considered an encroachment under the VHP. These permanent impacts would require the project to receive a riparian setback exception to comply with the VHP.

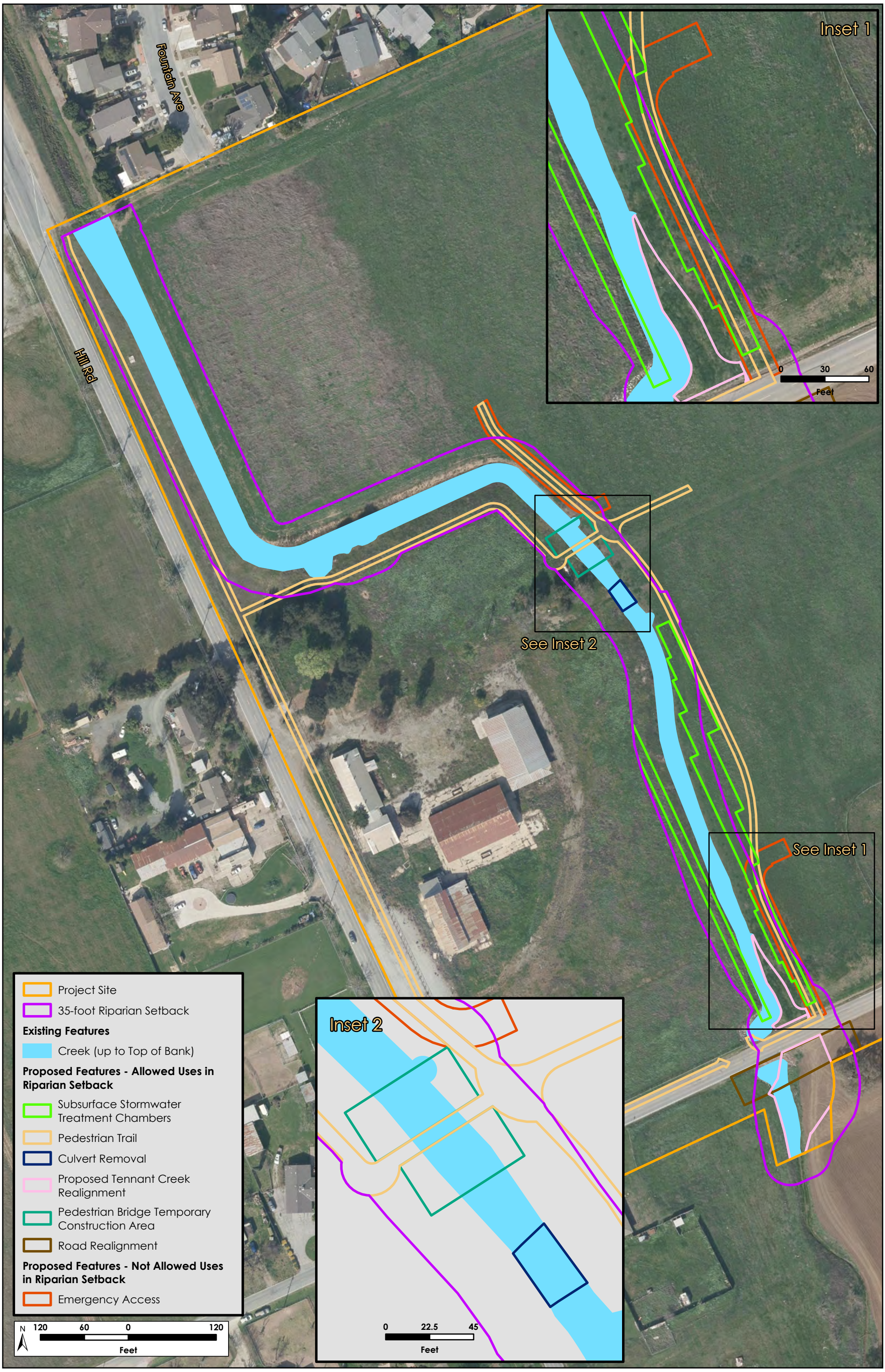

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Figure 8. VHP 35-foot Riparian Setback - Tennant Creek
New Horizons Development Project Biological Resources Report (4046-02)
June 2023

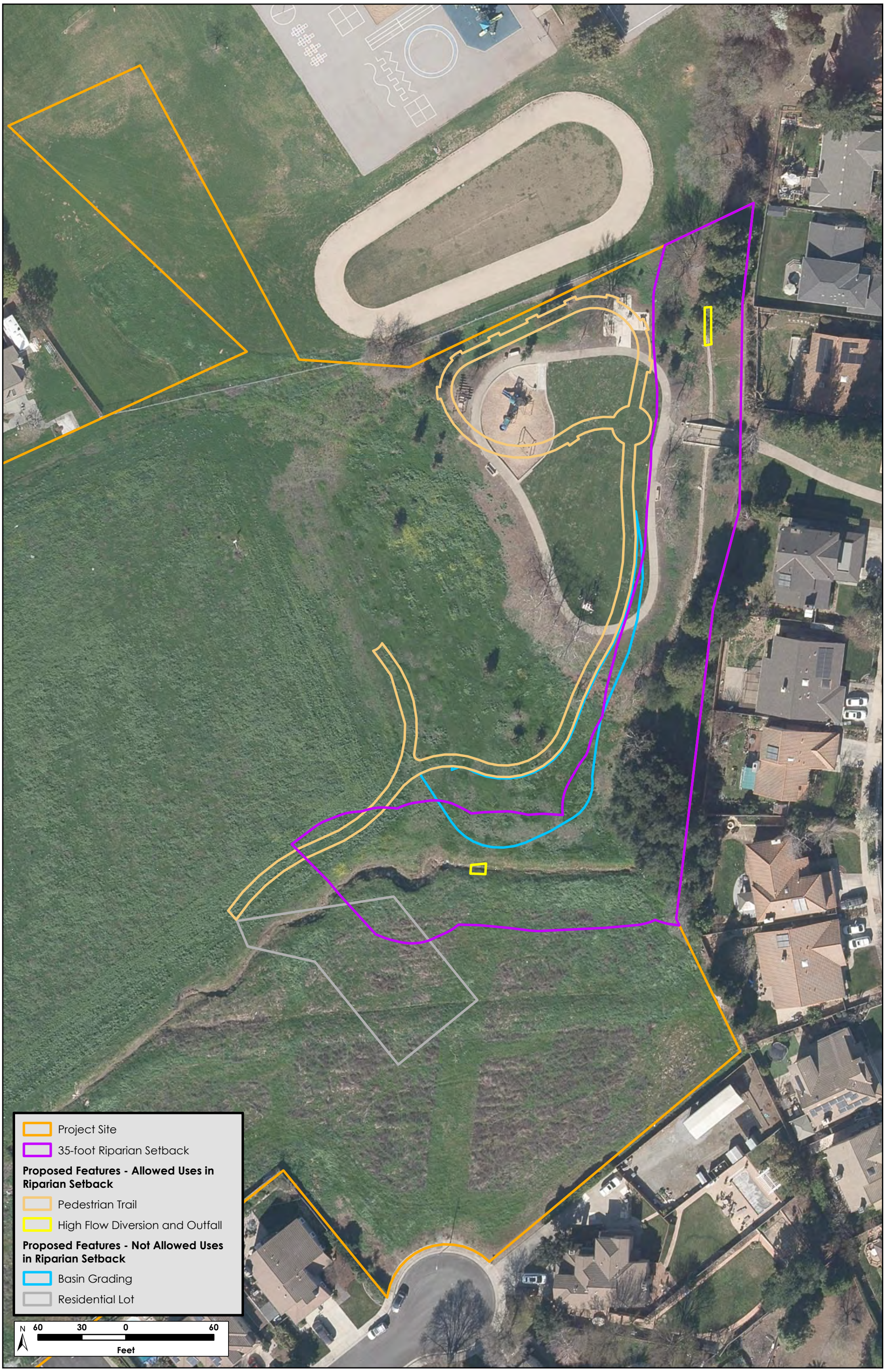

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Figure 9. VHP 35-foot Riparian Setback - Ephemeral Stream

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The realignment of Tennant Creek at Barrett Avenue will shift the creek closer to where the emergency access road is proposed. The setback would be as little as 2 feet where the emergency access road abuts the new top of bank at Barrett Avenue (Figure 8). The single residential lot that encroaches into the riparian setback along the ephemeral stream would encroach as close as 8 feet from the top of bank.

The applicant will need to obtain a riparian setback exception from the SCVHA and City of Morgan Hill during the City approval and VHP application process for all non-exempt development features, including the residential lot, emergency access road, and detention basin grading within the 35-ft riparian setback. Because of the value of riparian buffers, as described above, the encroachment from non-allowed uses would be a significant impact under CEQA if not mitigated. Therefore, the encroachment of new urban development into the setback area will require compensatory mitigation to offset the impacts on the riparian corridor. Incorporation of Mitigation Measure 4 below would reduce the impacts from encroachment into the riparian setbacks to less-than-significant levels.

Mitigation Measure 4. Compensate for New Urban Development within Setback. The project will introduce 0.18 acre of new urban development encroaching into the riparian setback. To compensate for this degradation of setback functions in this area, the project will restore native riparian habitat at a 2:1 (restored area to impacted area) ratio, on an acreage basis, within other planned open space areas in the riparian setbacks. Native herbaceous plant species appropriate to the local area such as deergrass (*Muhlenbergia rigens*) and narrow leaf milkweed will be planted within the creek bottom and slopes. Native trees and shrubs appropriate to the local area such as coast live oak and coyote brush (*Baccharis pilularis*) will be planted and maintained to provide additional wildlife habitat adjacent to Tennant Creek. Coordination with the Santa Clara Valley Water District may be necessary to determine whether any woody vegetation can be planted within the banks of the creek or whether it would need to be installed above the top of bank. A qualified restoration ecologist will develop a Riparian Setback Enhancement and Monitoring Plan, which will contain the following components (or as otherwise modified by regulatory agency permitting conditions):

1. Goal of the restoration to achieve no net loss of habitat functions and values.

2. Restoration design:
    - Planting plan
    - Soil amendments and other site preparation elements as appropriate
    - 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 elimination of

non-native woody species from within the enhancement area and establishment of native trees and shrubs.

4. Contingency plan for mitigation elements that do not meet performance or final success criteria.

The Plan must be approved by the City of Morgan Hill (and the SCVHA if necessary) prior to initiation of impacts to currently undeveloped habitat within the riparian setback.

6.4 Impacts on Wetlands: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (Less than significant)

Wetlands and other waters of the U.S./state are present within Tennant Creek and the ephemeral drainage in the northeastern part of the project area. Jurisdictional wetlands located south of Barrett Avenue are supported by urban runoff from nearby storm drains. The storm drain flows pool at the toe of a riprap slope that forms the downstream slope of the Barrett Avenue culvert. Approximately 0.02 acre of these low-quality jurisdictional wetlands, which are dominated by non-native vegetation, will be permanently impacted during the realignment of Tennant Creek and the improvement of Barrett Avenue, and 0.01 acre will be temporarily impacted. Impacts to riverine (intermittent) and riverine (ephemeral) habitats are discussed in Section 6.3.1.

The project will comply with all VHP conditions, including Conditions 3 and 4, which require implementation of design phase, construction phase, and post-construction phase measures, including programmatic BMPs, performance standards, and control measures, to minimize increases of peak discharge of storm drain water and to reduce runoff of pollutants to protect water quality. In addition, required construction period BMPs and post-construction storm water requirements, described above in Section 6.3.2, will apply to the project. These requirements would further avoid and reduce these impacts. The project will also pay VHP impact fees for impacts to wetlands and streams. Thus, with compliance with VHP Conditions 3 and 4, and payment of all applicable specialty wetland fees, potential project impacts on wetlands would be less than significant under CEQA.

The same impacts to water quality described above in Section 6.3.1 would also apply to wetlands. Likewise, the measures discussed in Section 6.3.1 will minimize impacts to water quality to less than significant.

6.5 Impacts on Wildlife Movement: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Less than Significant)

As discussed in Section 4.3, biologically significant wildlife movement is largely absent from the site, and thus no significant impacts on wildlife movement are anticipated. Historically, the proposed project site may have

been part of a cross-valley terrestrial movement corridor connecting habitats of the Diablo and Santa Cruz Mountain ranges, but agricultural and urban development over the last century have curtailed or eliminated cross-valley movement in the vicinity of the project site. Similarly, while riparian habitat is present on the project site, this habitat is extremely limited in extent, channelized, straightened, and devoid of structurally diverse vegetation. Thus, it does not currently function as a biologically significant movement corridor for wide-ranging or local species. Waterways on the site are ephemeral or intermittent, and without direct connectivity to more permanent streams. Thus, they contain no native fishes, and are not important nursery sites for fishes or amphibians that occur in the area. The proposed project does, however, have the potential to affect small-scale, local movement by animals that currently reside on the site and surrounding suburban and agricultural areas. This impact will not rise to the CEQA standard of a significant impact, though, as these animals are commonly-occurring, primarily urban-adapted, and regionally abundant species.

Although no mitigation is necessary to reduce project impacts on wildlife movement to less-than-significant levels, the VHP conservation program will assemble a Reserve System with landscape linkages and wildlife movement in mind to protect and, where possible, enhance movement pathways on a regional scale. The project's impact fees will thus contribute to the maintenance and improvement of opportunities for movement and genetic exchange of native plants and animals within and between natural communities inside and connecting to areas outside of the VHP Reserve System.

6.6 Impacts due to Conflicts with Local Policies: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant)

6.6.1 Impacts Due to the Removal of City of Morgan Hill Ordinance-Sized Trees (Less than Significant)

Implementation of the proposed project would result in the removal of 32 trees. Twenty-seven of those trees are ordinance-sized, as defined by the City of Morgan Hill tree ordinance. Eighteen of the ordinance-sized trees are native, including one Northern California black walnut and 17 coast live oaks. These are all located among the abandoned farm buildings. No trees within the riparian corridor will be removed.

The removal of ordinance-sized trees conflicts with the City of Morgan Hill Municipal Code. However, the project proponent will submit permit applications for tree removal for this project and will comply with the conditions of the tree removal permit. In accordance with the provisions of the Morgan Hill Municipal Code (Ord. No. 2205 N.S., § 1, 6-15-2016), the Standard Permit Conditions listed below would be implemented by the project.

Standard Permit Conditions

1. Replacement of trees removed (either on-site on the banks of the basin or elsewhere in the City) with plantings of trees acceptable to the community development director. In all cases, native trees shall be planted to replace native trees removed unless practical reasons preclude this option;

2. Use of measures to effect erosion control, soil and water retention and diversion or control of increased flow of surface waters;

3. Use of measures to insure that the contemplated action will not have adverse environmental effects relating to shade, noise buffers, protection from wind, air pollution and historic features; and/or

4. Posting of a bond to insure maintenance of substitute landscaping pursuant to the requirements of Chapter 18.74 of this code.

We expect that tree replacement will be feasible on the project site (e.g., in the riparian setback area). In the event the project plan does not include areas to accommodate the required tree mitigation, one or more of the following measures would be implemented during the final design phase of the project, to the satisfaction of the City Arborist and the Director of Planning, Building and Code Enforcement:

- During the final design phase, the size of a 15-gallon replacement tree may be increased to 24-inch box and count as two replacement trees to be planted within the project site.
- Pay Off-Site Tree Replacement Fee(s) to the City, prior to the issuance of Public Works grading permit(s), in accordance to the City Council approved Fee Resolution. The City will use the off-site tree replacement fee(s) to plant trees at alternative sites.

6.7 Impact due to Conflicts with an Adopted Habitat Conservation Plan: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (Less Than Significant)

The City of Morgan Hill is a signatory to the VHP, which is a Habitat Conservation Plan and Natural Community Conservation Plan. As described in Section 6.1, the project is considered a "covered project" under the VHP. All VHP-covered species that may be affected by the proposed project, including the California red-legged frog, California tiger salamander, and western pond turtle, are discussed in this report. Similarly, impacts on sensitive habitats, such as stream and serpentine habitats for which the VHP requires specific impact fees, are discussed in this report. The project will apply for VHP coverage and will adhere to all applicable VHP conditions during project implementation, including acquiring a riparian setback exception for proposed non-allowable uses. Therefore, the proposed project would not be in conflict with the VHP. The proposed project would not be in conflict with any other adopted habitat conservation plans or natural community conservation

plans, or with any other approved local, regional, or state habitat conservation plans or natural community conservation plans. Thus, impacts associated with conflicts between the proposed project and any adopted habitat conservation plan or natural community conservation plan are less than significant.

6.8 Cumulative Impacts

Cumulative impacts arise due to the linking of impacts from past, current, and reasonably foreseeable future projects in the region. Future development activities in the City of Morgan Hill and development activities covered by the VHP will result in impacts on the same habitat types and species that will be affected by the proposed project. The proposed project, in combination with other projects in the area and other activities that impact the species that are affected under the project, could contribute to cumulative effects on special-status species. Other projects in the area include both development and maintenance projects that could adversely affect these species and restoration projects that will benefit these species.

The cumulative impact on biological resources resulting from the project in combination with other projects in the region would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project, and the benefits to biological resources accruing from the VHP. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts on biological resources would occur.

However, the VHP includes numerous conservation measures to offset adverse effects on covered activities. Many projects in the region that impact resources similar to those impacted by the proposed project will be covered activities under the VHP and will mitigate impacts on sensitive habitats and many special-status species through that program, which will require payment of fees for habitat restoration.

Further, the project would implement a number of BMPs and mitigation measures to reduce impacts on both common and special-status species, as described above. Thus, the project will not contribute to substantial cumulative effects on biological resources.

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Appendix A. 2017 Tree Inventory Report

Michael L. Bench
Consulting Arborist
(831) 594-5151

7327 Langley Canyon Road
Prunedale, California 93907

Inventory of Existing Trees
Morgan Hill Development Company
Hill Avenue and Barrett Avenue
Morgan Hill, California

Assignment
I was asked by Mr. Dan McKenzie, DMJ Builders, Inc., to inspect the trees at this property of the Morgan Hill Development Company and to prepare an inventory of the existing trees.

Observations
I inspected the trees on May 9, 2017.

The property is located at the northeast corner of Hill Avenue and Barrett Avenue, Morgan Hill, California. The exiting trees are concentrated in a central area around a foundation of a removed residence, three barns, horse corrals, pig sty, chicken coop, and a goat pen. These features are located adjacent to Hill Avenue. The rest of the property is open and devoid of any trees.

Methods
The trunks of the trees were measured using a standard measuring tape at 4 ½ feet above soil grade (referred to as DBH or Diameter at Breast Height), according to the International Society of Arboriculture (ISA) standards. Trunk measurements were rounded up to the nearest inch. The measurement for multi-stem specimens was taken below the lowest fork on the trunk when possible in accordance with the International Society of Arboriculture standards.

The condition of each tree was observed by visual assessment only from a standing position without climbing or using aerial equipment. No specialized equipment was used. Consequently, it is possible that individual tree(s) may have internal defects, which are not detectable by visual inspection. Invasive exploratory inspection and analysis is beyond the scope of this evaluation.

Existing Trees
There are 47 trees on this property. I affixed metallic tree tag to each of these trees, using the numbers 200 – 246. In most cases, I affixed these tags on the east side of trunks at approximately 6-8 feet in height.

The 47 trees are listed by number on the attached List of Trees, which follows this text. Each tree is identified by species. The trunk diameter of each specimen is noted. In cases, where no measurement could be done below the lowest fork or the measurement below fork was not representative of the tree, as described by ISA standards, more than one

stem is noted in the Trunk Diameter column.

City of Morgan Hill Tree Code
The Morgan Hill Municipal Code, Section 12.32.020, defines a "tree" as any woody plant rising above the ground with a single stem or trunk of a circumference of forty inches (12.7 inches) in diameter or more for non-indigenous species and eighteen inches (5.7 inches) in diameter or more for indigenous species measured at four and one-half feet vertically above ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously that the lateral axes. Trees of any size within the public right-of-way shall constitute a tree for the purposes of this subsection.

An "indigenous tree" is defined as: Any tree which is native to the Morgan Hill Region. Such trees include oaks (all types), California bay, madrone, western sycamore, and alder.

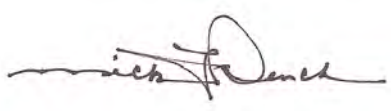
Results of this Inventory
I have added a column to the attached List of Trees, which indicates those trees protected by the Tree Code of Morgan Hill. Among the 47 trees, 40 are protected by the city code. The majority of these are indigenous coast live oaks (*Quercus agrifolia and Quercus lobata*).

The Site Plan for this property was not available at the time of this inventory. For this reason the exact location of each specimen is not shown on a plan at this time.

Tree Protection Plan
Until home sites and infrastructure would be done in relation to the existing trees, a Tree Protection Plan cannot be done. I expect this will be done when plans become available.

Preliminary Tree Removal Request
It is the desire of the developer to remove the non-native trees and to preserve as many of the native trees as possible. The attached list of trees indicates those individual trees requested for removal. Among these, I recommend that two (Tree # 215 and 246) of the indigenous oaks be removed due to extremely poor structure, which cannot be repaired. A total of 22 trees are requested to be removed.

Respectfully submitted,



Michael L. Bench, Consulting Arborist
International Society of Arboriculture Certification # WE 1897A
American Society of Consulting Arborists Member

	Field Data Sheet Page 1		Trunk Diameter In Inches	Morgan Hill Tree		Remove Or Retain
Tree #	**Common Name**	**Botanical Name**	**DBH**	**Yes / No**	**Notes**	
200	Italian Cypress	Cupressus sempervirens	8 @ 6"	No		Remove
201	Red Ironbark	Eucalyptus sideroxylon	22	Yes		Remove
202	Red Ironbark	Eucalyptus sideroxylon	23	Yes		Remove
203	Hollywood Juniper	Juniperus chinensis 'Kaizuka'	18	Yes	Severe Lean	Remove
204	Hollywood Juniper	Juniperus chinensis 'Kaizuka'	16 / 12	Yes	Severe Lean	Remove
205	English Walnut	Juglans regia	12	No		Remove
206	Japanese Privet	Ligustrum japonicum	14	Yes		Remove
207	Red Ironbark	Eucalyptus sideroxylon	20	Yes		Remove
208	Red Ironbark	Eucalyptus sideroxylon	19	Yes		Remove
209	Black Walnut	Juglans hindsii	17 / 10	Yes		Remove
210	Almond	Prunus dulcis	8 / 7	No		Remove
211	Almond	Prunus dulcis	20	Yes	Near Dead	Remove
212	Coast Live Oak	Quercus agrifolia	13 / 11	Yes		Retain
213	Coast Live Oak	Quercus agrifolia	8	Yes		Retain
214	Almond	Prunus dulcis	6 / 5	No		Remove
215	Coast Live Oak	Quercus agrifolia	12 /12	Yes	Splitting Apart @ Base	Remove
216	Coast Live Oak	Quercus agrifolia	14	Yes		Retain
217	Coast Live Oak	Quercus agrifolia	8	Yes		Retain
218	Valley Oak	Quercus lobata	11 / 8 / 8	Yes		Retain
219	Coast Live Oak	Quercus agrifolia	24	Yes		Retain
220	Coast Live Oak	Quercus agrifolia	12	Yes		Retain
221	Coast Live Oak	Quercus agrifolia	6	Yes		Retain
222	Coast Live Oak	Quercus agrifolia	7	Yes		Retain
223	Coast Live Oak	Quercus agrifolia	18 Below Fork	Yes		Retain

	Field Data Sheet Page 2		Trunk Diameter In Inches	Morgan Hill Tree		Remove Or Retain
Tree #	**Common Name**	**Botanical Name**	**DBH**	**Yes / No**	**Notes**	
224	Coast Live Oak	Quercus agrifolia	20	Yes		Retain
225	Coast Live Oak	Quercus agrifolia	8	Yes		Retain
226	Coast Live Oak	Quercus agrifolia	30 - Below Fork	Yes		Retain
227	Italian Cypress	Cupressus sempervirens	8 @ 6"	No		Remove
228	Evergreen Ash	Fraxinus uhdei	25	Yes		Remove
229	Coast Live Oak	Quercus agrifolia	17 @ 24"	Yes		Retain
230	Coast Live Oak	Quercus agrifolia	12	Yes		Retain
231	Coast Live Oak	Quercus agrifolia	8	Yes		Retain
232	Coast Live Oak	Quercus agrifolia	17	Yes		Retain
233	Coast Live Oak	Quercus agrifolia	10	Yes		Retain
234	Plum	Prunus cerasifera	10	No	Dead	Remove
235	English Hawthorne	Crataegus laevigata	5 / 4	No	Very Poor	Remove
236	Coast Live Oak	Quercus agrifolia	17	Yes		Retain
237	Coast Live Oak	Quercus agrifolia	28	Yes		Retain
238	Coast Live Oak	Quercus agrifolia	8 / 7 / 7 / 6	Yes	A Stump Sprout	Remove
239	Coast Live Oak	Quercus agrifolia	15	Yes		Retain
240	Coast Live Oak	Quercus agrifolia	24- Below Fork	Yes		Retain
241	Japanese Privet	Quercus agrifolia	10	Yes		Retain
242	Coast Live Oak	Quercus agrifolia	7	Yes		Retain
243	Monterey Pine	Pinus radiata	26- Below Fork	Yes		Remove
244	Fremont Cottonwood	Populus fremontii	22	Yes		Remove
245	Coast Live Oak	Quercus agrifolia	17	Yes		Retain
246	Coast Live Oak	Quercus agrifolia	20- Below Fork	Yes	Trunk Decay	Remove

Appendix B. Preliminary Delineation of Wetlands and Other Waters

H. T. HARVEY & ASSOCIATES

Ecological Consultants

50 years of field notes, exploration, and excellence

New Horizons Development Project
Preliminary Delineation of Wetlands and Other Waters
Santa Clara County, California

Project #4046-01

Prepared for:

Rocke Garcia
Glenrock Builder
P.O. Box 1179
Morgan Hill, CA 95037

Prepared by:

H. T. Harvey & Associates

July 12, 2021

Executive Summary

On April 30, 2021, H. T. Harvey & Associates wetland ecologist Mark Bibbo performed a delineation of wetlands and other waters on the New Horizons project site on the northeast corner of Hill Road and Barrett Avenue in southeastern Morgan Hill, California, in Santa Clara County, California. Approximately 77 acres were surveyed for jurisdictional waters (wetlands and other waters) that may be subject to regulation under Section 404 of the Clean Water Act administered by the U.S. Army Corps of Engineers (USACE). The survey also delineated the extent of waters of the state that may be subject to regulation under the Section 401 of the CWA and the Porter Cologne Water Quality Control Act administered by the Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW). The on-site determination took into account drier than normal conditions during the 2020/2021 winter season relative to the 30-year normal. Although the results are based on the conditions present at the time of the 2021 survey, site features and boundaries had not changed substantively since H. T. Harvey and Associates' initial mapping of jurisdictional habitats on this site in February 2018, a much wetter year. The study area is located in the Pajaro (8-digit Hydrologic Unit Code [HUC] 18060002) watershed, and the Little Llagas Creek sub-watershed (12-digit HUC 180600020301).

In total, approximately 0.37 acre of potentially jurisdictional features as defined by the USACE were identified within the study area. These include approximately 0.03 acre of Section 404 wetlands as seasonal wetland and 0.34 acres (1,925 linear feet) of Section 404 waters as intermittent stream and culvert. The seasonal wetland, intermittent stream and culvert would also be considered waters of the state, subject to regulation by the RWQCB under Section 401 of the Clean Water Act and under the Porter Cologne Water Quality Control Act. An ephemeral drainage was observed in the northeast corner of the study area, and was investigated as part of this study. As an ephemeral drainage, this feature would not be considered waters of the U.S. under the current Navigable Waters Protection Rule This feature is likely to be considered a waters of the state and subject to CDFW jurisdiction. Additionally, 0.93 acres of riparian grassland habitat occurring below the top of the bank of Tennant Creek would be considered jurisdictional by RWQCB as "important riparian buffers." The bed and banks of both drainages, plus an additional 0.10 ac of tree canopy that is rooted below or just beyond the top of bank and overhanging Tennant Creek and the ephemeral drainage, would be considered CDFW jurisdictional habitat.

Habitat Type	Acres
Total Section 404 Wetlands	**0.03**
Seasonal wetland	0.03
Total Section 404 Waters of the U.S.	**0.34**
Intermittent stream	0.33
Culvert	0.01
Total Section 401 Waters of the State	**1.37**
Seasonal wetland	0.03
Culvert	0.01
Intermittent stream	0.33
Riparian Grassland (below top of bank)	0.93
Ephemeral Drainage	0.07
Total CDFW Jurisdictional Habitats	**1.47**
Total Non-jurisdictional Areas	**75.64**
Wetland Delineation Study Area Total	**77.11**

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Figures

Tables

Appendices

List of Preparers

Kelly Hardwicke, Ph.D., Principal, Senior Plant and Wetland Ecologist

Mark Bibbo, M.S., Senior Plant Ecologist

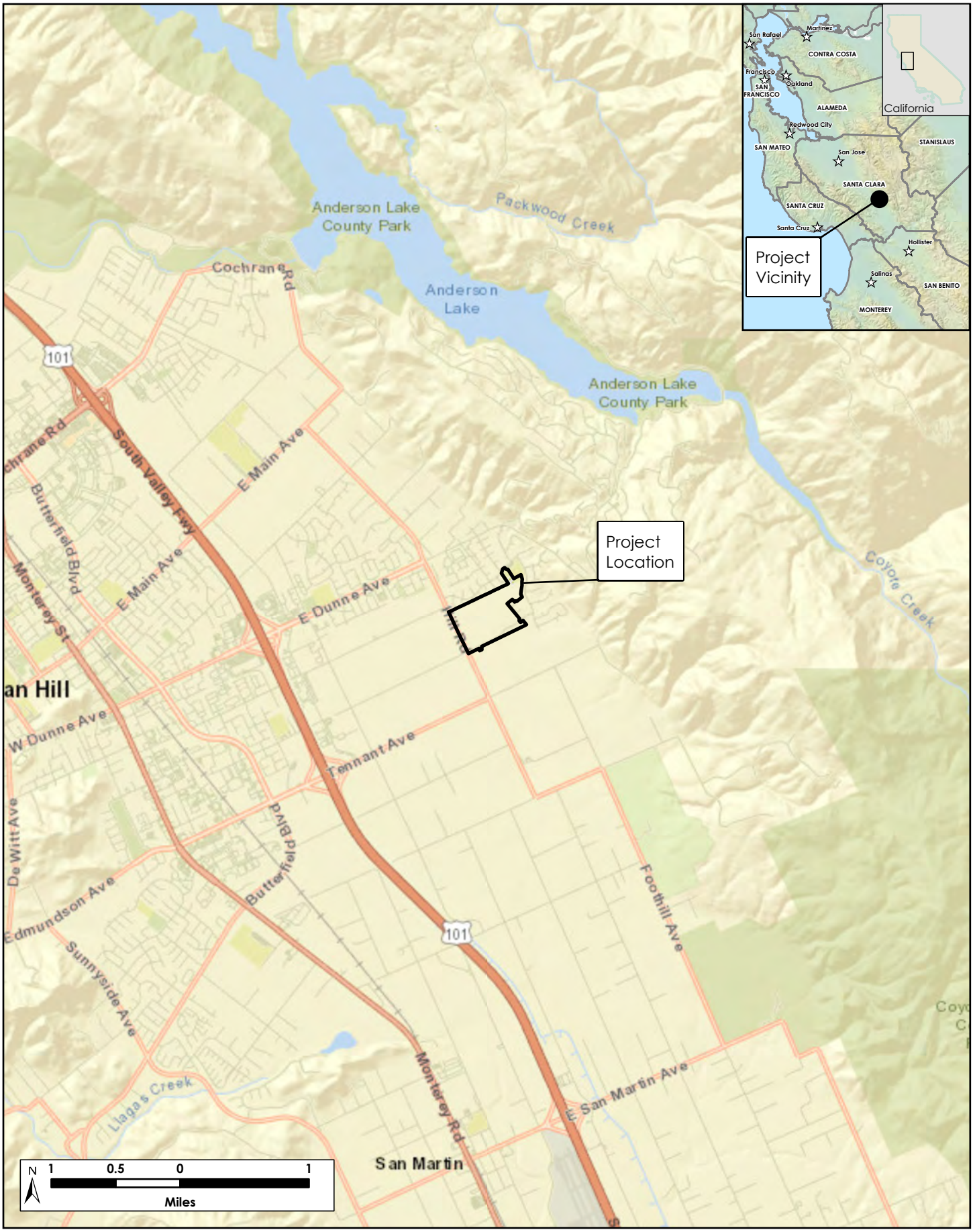
Section 1. Introduction

1.1 Study Area Description

The New Horizons delineation study area is located in the city of Morgan Hill, California, Santa Clara County, east of U.S. Highway 101, on the northeast corner of Hill Road and Barrett Avenue (Figure 1). The study area is composed primarily of the following two parcels, Assessor's Parcel Number (APN) 81720031 and APN 81720034, where a residential development is proposed. Portions of the property encompassing Jackson Park on the northeast corner of the property, where some project activities may take place, were also included in the wetland delineation study area (Figure 2). The study area is located within the *Mt. Sizer, California* U.S. Geological Survey (USGS) 7.5-minute quadrangle (Figure 3). Elevations within the study area range from approximately 345 to 402 feet (ft) North American Vertical Datum of 1988 (NAVD88) (Google 2021), with the highest elevations in the northeastern portion of the parcel.

The climate in the vicinity of the study area is coastal Mediterranean, with most rain falling in the winter and spring, and dry summers. Mild and cool temperatures are common in the winter. Hot to mild temperatures are common in the summer. Climate conditions in the study area include a 30-year average of approximately 20.82 inches of annual precipitation with a monthly average temperature range from 49.4ºF to 87.8ºF (PRISM Climate Group 2021).

Figure 4 shows the soil units mapped by the National Resource Conservation Service (NRCS) within the study area, and Table 1 summarizes the associated texture, drainage classification, landform setting, and hydric soil status (NRCS 2021a, 2021b) for the four soil types found within the study area.



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Ecological Consultants

Figure 1. Vicinity Map
New Horizons Development Project Wetland Delineation Report (4046-01)
July 2021

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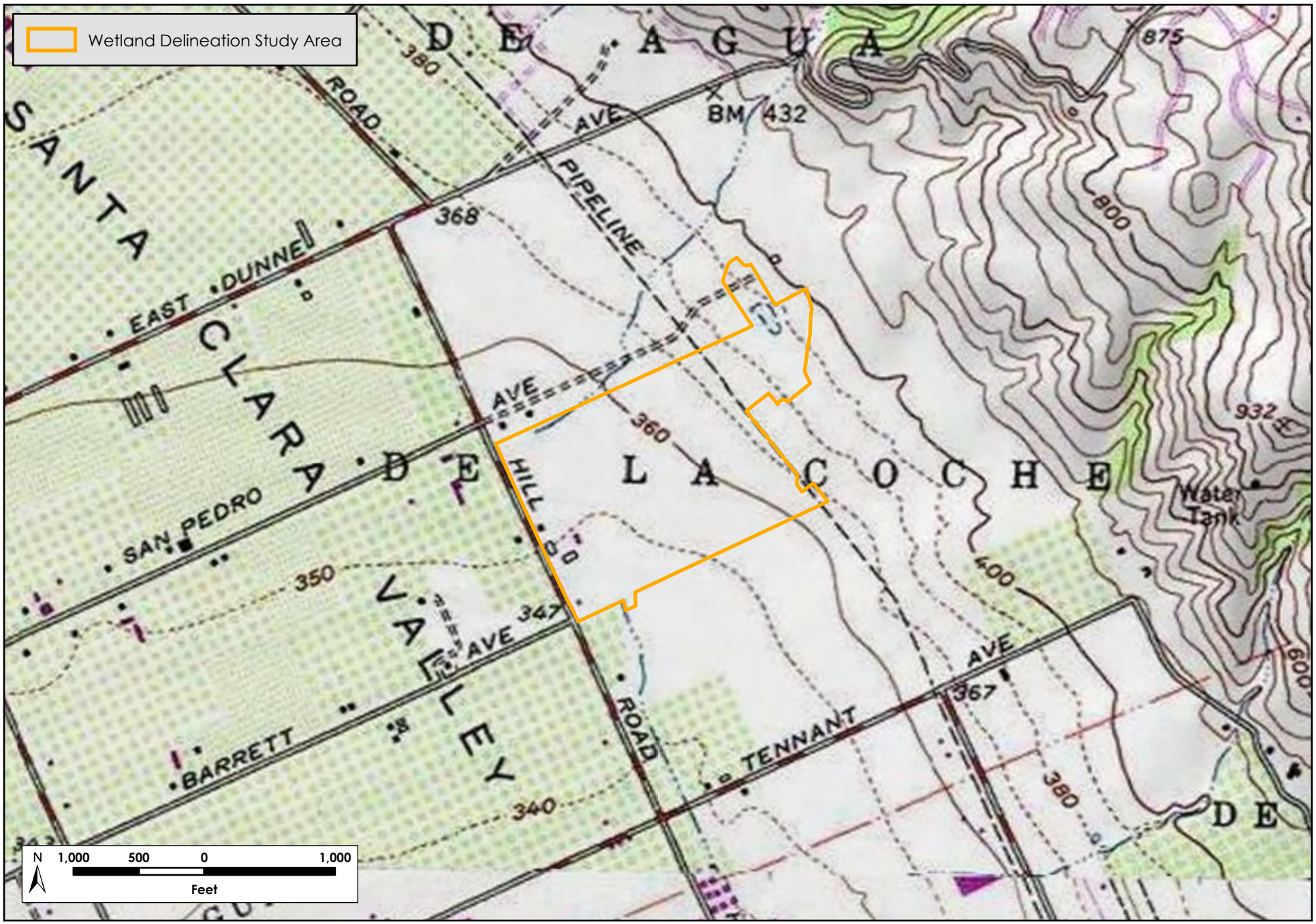
Figure 2. Wetland Delineation Study Area
New Horizons Development Project Wetland Delineation Report (4046-01)
July 2021



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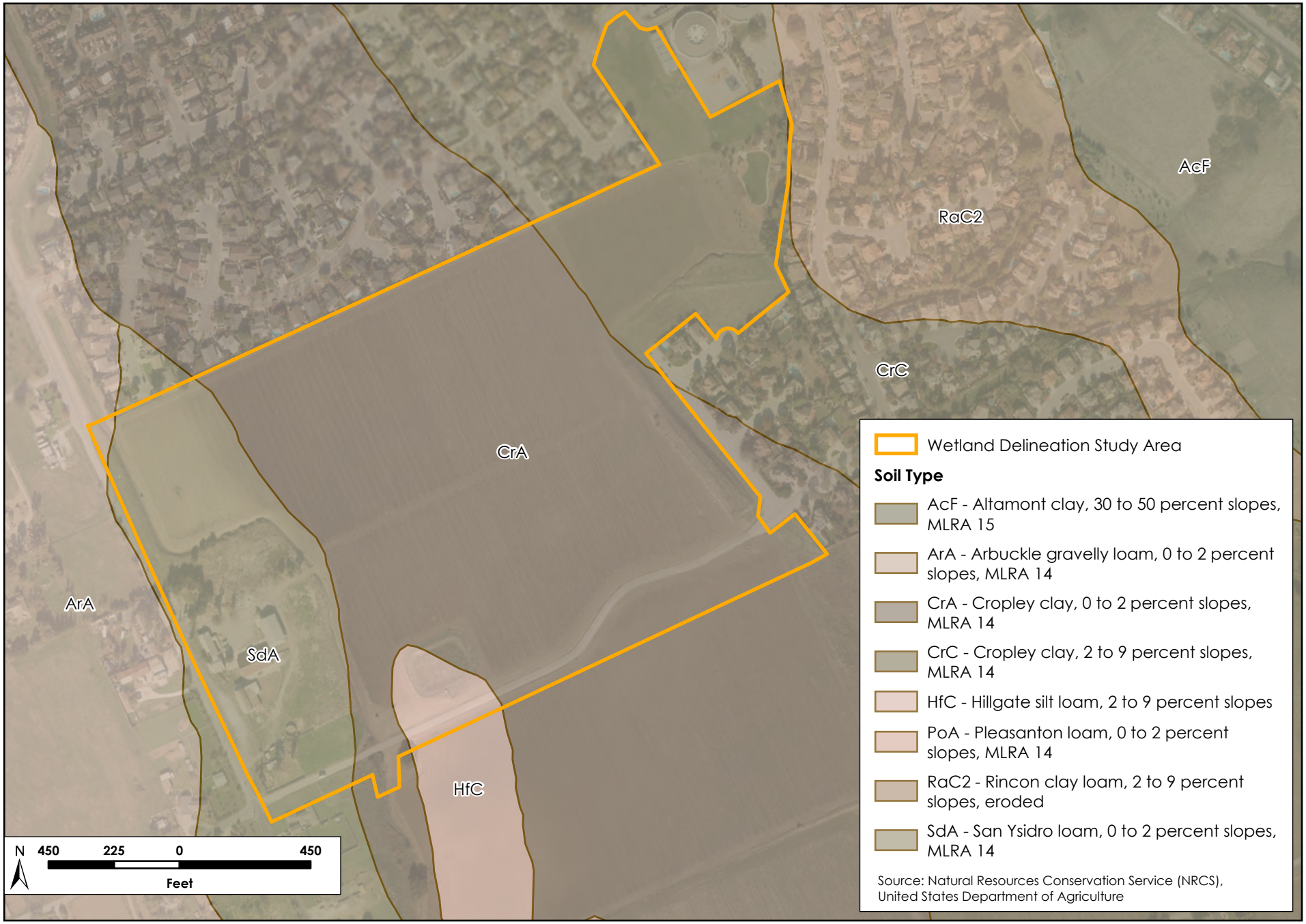
H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 3. USGS Topographic Map

New Horizons Development Project Wetland Delineation Report (4046-01)
July 2021



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H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 4. NRCS Soils Map

New Horizons Development Project Wetland Delineation Report (4046-01)
July 2021

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

Soil Symbol	Soil Name	Soil Texture	Drainage Classification	Landform	Hydric Status
ArA	Arbuckle gravelly loam, 0 to 2 percent slopes, MLRA 14	Gravelly loam	Well drained	Toeslope	No
CrA	Cropley clay, 0 to 2 percent slopes, MLRA 14	Clay	Moderately well drained	Alluvial fans/terrace/toeslope	No
CrC	Cropley clay, 2 to 9 percent slopes, MLRA 14	Clay	Moderately well drained	Alluvial fans/terrace/backslope	No
HfC	Hillgate silt loam, 2 to 9 percent slopes	Silt loam	Well drained	Terraces/toeslope	No
SdA	San Ysidro loam, 0 to 2 percent slopes, MLRA 14	Loam	Moderately well drained	Terraces/alluvial fans/valley floors/toeslope/footslope	No

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) map of the study area is depicted in Figure 5. The NWI identified a single aquatic feature within the study area (NWI 2021). The feature is mapped as a riverine, intermittent, streambed, seasonally (R4SBC) and generally aligns with the area mapped as an ephemeral drainage in the study area. NWI maps are based on interpretation of aerial photography, limited verification of mapped units, and/or classification of wetland types using the classification system developed by Cowardin et al. (1979). These data are available for general reference purposes and do not necessarily correspond to the actual presence or absence of jurisdictional waters.

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Figure 5. NWI Map

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Section 2. Survey Methods

Before the delineation survey was conducted, topographic maps and aerial photos of the study area were obtained and reviewed from several sources, such as the USGS topographic map (Figure 3), NRCS soils map (Figure 4), NWI (Figure 5), Google Earth software (Google 2021), and UC Santa Barbara Library's collection of historical aerial photography (UCSB 2021).

On April 30, 2021, H. T. Harvey & Associate senior plant ecologist Mark Bibbo, M.S. surveyed the study area identified in Figures 1 and 2. The purpose of the survey was to identify the extent and distribution of wetlands and other waters that may be subject to regulation by the USACE, RWQCB, and CDFW. Weather conditions on April 30, 2021, were warm, dry, and clear. The region had not received significant precipitation in the two weeks prior to the site survey.

Mark Bibbo performed a technical delineation of wetlands and other waters in a 77 ac area identified on the accompanying figures as the wetland delineation study area. The delineation was performed in accordance with the *Corps of Engineers 1987 Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987). Additionally, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0)* (Regional Supplement) (USACE 2008a) was followed to document site conditions relative to hydrophytic vegetation, hydric soils, and wetland hydrology. Mark Bibbo performed preliminary mapping of the extent and distribution of wetlands and other waters of the U.S. that may be subject to regulation under Section 404 of the Clean Water Act (CWA) as well as preliminary mapping of waters of the state that may be subject to regulation under the Porter Cologne Water Quality Control Act, which is administered by the Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW). The following sections present descriptions of the methods used to identify Section 404 jurisdictional waters (wetlands and other waters).

2.1 Identification of Jurisdictional Waters

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 Arid West Regional Supplement (USACE 2008a) were used to examine the vegetation, soils, and hydrology on site. This three-parameter approach to identifying wetlands is based on the presence of a prevalence or dominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

In addition to applying these survey methods, we compiled this report in accordance with guidance provided in *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE 2016a) and *Information Requested 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, including:

- Vicinity map (Figure 1)
- Study area map (Figure 2)
- USGS quadrangle map (Figure 3)
- Soils map (Figure 4)
- NWI map (Figure 5)
- Biotic habitats map (Figure 6)
- Preliminary identification of waters of the US map (Figure 7)
- Preliminary identification of waters of the State and CDFW Jurisdictional Features (Figure 8)
- Plant species observed (Appendix A)
- Current soil survey report (Appendix B)
- Data forms for wetlands sample points and ordinary high water mark (OHWM) datasheets (Appendix C)
- Written rationale for sample point choice (Section 3.1, "Observations, Rationales, and Assumptions")
- Color photos (Appendix D)
- Aquatic resources table (Appendix E)
- Signed statement from the property owner allowing access (Appendix F)
- A figure showing the "Antecedent Precipitation vs. Normal Range based on NOAA's Daily Global Historical Climatology Network" (Appendix G)
- Creek and Watershed Map of Morgan Hill and Gilroy (Sowers and Henkel 2009) (Appendix H)

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. In the field, the techniques 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 through both observation of indicators and direct observation of hydrology. Features meeting wetland vegetation, soil, and hydrology criteria were then mapped in the field using a Trimble R1™ GPS unit capable of submeter accuracy.

2.1.1 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 Arid West Regional Supplement (USACE 2008a).

Hydrophytic Vegetation. Plants that can grow in soils that are saturated or inundated for long periods of time, which contain little or no oxygen when wetted, are considered adapted to those soils and are called hydrophytic. There are different levels of adaptation, as summarized in Table 2. Some plants can only grow in soils saturated with water (and depleted of oxygen), some are mostly found in this condition, and some are found equally in wet soils and in dry soils. Plants observed at each of the sample sites were identified to species, where possible, using *The Jepson Manual, Vascular Plans of California, Second Edition* (Baldwin *et al.* 2012). The wetland indicator status of each species was obtained from the *Arid West 2016 Regional Wetland Plant List* (Lichvar *et al.* 2016). Wetland indicator species are designated according to their frequency of occurrence in wetlands. For instance, a species with a presumed frequency of occurrence of 67 to 99% in wetlands is designated a facultative wetland indicator species. The wetland indicator groups, indicator symbol, and the frequencies of occurrence of species within wetlands, provided as a percentage, are shown in Table 2.

Table 2. Wetland Indicator Status Categories for Vascular Plants

Indicator Category	Symbol	Frequency (%) of Occurrence in Wetlands[1]
Obligate	OBL	>99 (Almost always is a hydrophyte, rarely in uplands)
Facultative wetland	FACW	67 – 99 (Usually a hydrophyte but occasionally found in uplands)
Facultative	FAC	34 – 66 (Commonly occurs as either a hydrophyte or non-hydrophyte)
Facultative upland	FACU	1 – 33 (Occasionally is a hydrophyte, but usually occurs in uplands)
Upland	UPL	<1% (Rarely is a hydrophyte, almost always in uplands)
Not Listed	NI	Considered to be an upland species

[1] Based on information contained in the Corps Manual (Environmental Laboratory 1987).

[2] Plant species that are not listed in the Arid West 2016 Regional Wetland Plant List (Lichvar et al. 2016) are considered UPL species in Appendix A – Plants Observed in the Study Area

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 within the study area, including their current indicator statuses, has been provided in Appendix A.

Hydric Soils. Up to 18 inches of the soil profile were examined for hydric soil indicators. The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as one formed under conditions of

saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper 12 inches of soil (NRCS 2010). Hydric soils include soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. In general, evidence of a hydric soil includes characteristics such as reducing soil conditions, soils with bright mottles and/or low matrix chroma, and soils listed as hydric by the U.S. Department of Agriculture (USDA) on the National Hydric Soils List (NRCS 2021b). Reducing soil conditions can also include circumstances where there is evidence of frequent ponding for long or very long duration. A long duration is defined as a period of inundation for a single event that ranges from 7 days to a month and very long is a period of inundation greater than one month (Environmental Laboratory 1987).

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 NRCS Web Soil Survey (NRCS 2021a) 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.

Wetland Hydrology. Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Wetland hydrology indicators provide evidence that the site has a continuing wetland hydrologic regime. Primary indicators might include visual observation of surface water (A1), high water table (A2), soil saturation (B1), and hydrogen sulfide odor (C1). Secondary indicators might include sediment deposits (B2) and/or drift deposits (B3). 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.

2.1.2 Identification of Section 404 Jurisdictional Other Waters

Surveys were also conducted within the study area for "other waters", which includes lakes, slough channels, seasonal ponds, tributary waters, non-wetland linear drainages, and salt ponds. Such areas are identified by the (seasonal or perennial) presence of standing or running water and generally lack hydrophytic vegetation. In non-tidal or muted tidal waters, USACE jurisdiction extends to the ordinary high water mark (OHWM), which is defined in 33 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." No potentially jurisdictional other waters were mapped within the study area.

In concert with USACE's efforts to revise the wetland delineation manuals and make them more specific to different geographic regions of the United States, as described above, efforts have been initiated by USACE to develop an OHWM delineation manual. In particular, two relatively recent publications have attempted to further refine the definition of OHWM and the delineation of the OHWM in the Arid West (including California):

- A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (USACE 2008b)
- Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2010)

For the purposes of the current study, two OHWM transects were surveyed in the field, based on the topography of the site. OHWM-01 was taken along the western edge of the property corner to characterize Tennant Creek, and OHWM-02 was taken to characterize the ephemeral drainage in the eastern portion of the study area.

2.2 Identification of Waters of the State

The Porter Cologne Water Quality Control Act (Porter-Cologne) broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the State include headwaters, wetlands, and riparian areas. Where forested riparian habitat is not present, jurisdiction is taken to the top of bank or levee. Where forested habitat occurs, the outer canopy of any riparian trees rooted within top of bank may be considered jurisdictional as these trees can provide allochthonous input to the channel below.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland

Definition. The Procedures describe riparian habitat buffers as important resources that may both be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs to impact.

The 2019 Procedures also clarify that wetland-upland boundaries for wetlands comprising waters of the state should be set using the USACE delineation framework (Environmental Laboratory 1987, USACE 2008a), with one important distinction. Some areas in California function as wetlands despite lacking abundant wetland vegetation. For example, non-vegetated playas, tidal flats, and some types of seasonal wetlands provide a variety of wetland functions, including water filtration, groundwater recharge, and the support of wetland wildlife. While USACE procedures require 5% vegetative cover to be considered a wetland rather than "other waters," the RWQCB has determined that no such minimum vegetative cover is necessary for an area to be considered a wetland under the State Wetland Definition. Waters of the state were identified within the study area.

2.3 Identification of CDFW Jurisdiction

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under California Department of Fish and Wildlife (CDFW) jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A stream is defined in Title 14, California Code of Regulations §1.72, as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. Jurisdiction does not include tidal areas such as tidal sloughs unless there is freshwater input. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code §2786 defines riparian habitat as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, CDFW would claim jurisdiction over a stream's bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats. CDFW jurisdictional habitats (riparian habitat) were mapped within the study area along Tennant Creek and the unnamed ephemeral stream.

Section 3. Survey Results and Discussion

The following vegetation/land cover types were mapped within the study area: (1) grain, row-crop, hay and pasture, disked/short-term fallowed, (2) rural-residential, (3) seasonal wetland, and (4) urban suburban. (Figure 6). Eight sample points (SPs) and two OHWM transects were examined to identify jurisdictional features (Figure 7; Appendix C). Within the study area, approximately 1.47 ac of potentially jurisdictional wetlands and waters regulated by USACE, RWQCB, and/or CDFW were identified (Table 3). The results of the delineation are described below.

Table 3. Summary of Jurisdictional Waters and Wetlands within the Delineation Study Area

Habitat Type	Acres
Total Section 404 Wetlands	**0.03**
Seasonal wetland	0.03
Total Section 404 Waters of the U.S.	**0.34**
Intermittent stream	0.33
Culvert	0.01
Total Section 401 Waters of the State	**1.37**
Seasonal wetland	0.03
Culvert	0.01
Intermittent stream	0.33
Riparian Grassland (below top of bank)	0.93
Ephemeral Drainage	0.07
Total CDFW Jurisdictional Habitats	**1.47**
Total Non-jurisdictional Areas	**75.64**
Wetland Delineation Study Area Total	**77.11**

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Figure 6. Habitat and Photo Points Map
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Figure 7. Preliminary Identification of Waters of the United States
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Figure 8. Preliminary Identification of Waters of the State and CDFW Habitats
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Information assembled during this investigation and pertinent to the identification of jurisdictional wetlands and other waters is presented in the first five appendices of this report. In addition, Appendix E provided at the end of this document is included as an electronic attachment in Microsoft Excel format, per USACE (2016b) guidelines.

- Appendix A—Plants observed in the study area
- Appendix B—NRCS Soil Survey of Alameda County, California
- Appendix C—USACE Arid West Wetland Data Forms and OHWM Transect Forms
- Appendix D—Photos of the study area
- Appendix E—Aquatic Resources Table
- Appendix F—Signed statement from the property owner(s) allowing USACE personnel to enter the property and collect samples during normal business hours.
- Appendix G—Antecedent Precipitation Tool Output
- Appendix H—Creek and Watershed Map of Morgan Hill and Gilroy (Sowers and Henkel 2009)

3.1 Observations, Rationales, and Assumptions

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

3.1.1 Background Information

The preliminary delineation assumes that normal circumstances prevailed at the time of the April 2021 survey, and results are based upon the conditions present at the time of the survey. The survey was performed using the "Routine Method of Determination" using three parameters, as outlined in the Regional Supplement.

Elevations in the study area range from approximately 345 ft to approximately 392 ft above sea level (Figure 3) (Google 2021). The topography of the study area is relatively level with a gentle slope from the east to the west. The study area is located within the Pajaro (8-digit Hydrologic Unit Code [HUC] 18060002) watershed, and the Little Llagas Creek sub-watershed (12-digit HUC 180600020301).

3.1.2 Precipitation Data

The survey took place in the spring of 2021, at the end of the rainy season. Relative to the 30-year climate normal (20.82 inches annually), precipitation in the study area was lower than the normal range of precipitation for the 12-month period leading up to the delineation. Total precipitation recorded in the area from October 2020 through April 2021 was 11.12 inches, which is approximately 56% of the 30-year average (1981–2010) for that same time period (PRISM Climate Group 2021). These conditions are considered to be drier than normal and conditions of severe drought, according to the analysis provided by the USACE's Antecedent Precipitation

Tool, which compares antecedent precipitation from a regional network of weather stations to 30-year normal range (see Appendix G, Antecedent Precipitation Tool output). These conditions were considered when assessing the biotic habitats present within the study area. Despite the below-average annual precipitation, boundaries of wetlands remained clear because of the presence of hydrophytic vegetation and hydrology indicators. Site features and boundaries had not changed substantively since H. T. Harvey and Associates' initial mapping of jurisdictional habitats on this site in February 2018, a much wetter year. No standing water was observed at the time of the 2021 survey.

A figure showing the "Antecedent Precipitation vs. Normal Range based on NOAA's Daily Global Historical Climatology Network" is included as Appendix G.

3.1.3 Site Conditions and Observations

The majority of the study area is a fallowed agricultural field, and rural-residential area surrounding a number of farm buildings and structures in the southeast corner of the property (Figure 6). The northeastern portion of the study area also includes a portion of Jackson Park, a municipal park associated with an adjacent school. Tennant Creek runs along the western edge of the property, approximately 60 feet from Hill Road in the northern half of the property, before taking two hard 90-degree turns in the middle of the property to flow around the farm buildings. Tennant Creek is an engineered, trapezoidal channel that flows intermittently from north to south. The current alignment of this drainage is a channelization of a historical creek that flowed in the vicinity, and which originated just to the north of the study area. Currently, Tennant Creek flows to the south; within approximately one mile of the study area it flows into Corralitos Creek, another intermittent stream, which then flows into Little Llagas Creek another 1.3 air miles to the south, near the town of San Martin. Little Llagas Creek flows into Llagas Creek near Gilroy, which then flows into the Pajaro River and the Pacific Ocean.

An ephemeral drainage is present in the eastern portion of the study area. This feature is the unburied portion of the re-routed remnant of a historical stream (Appendix H), but now primarily conveys storm water runoff from the surrounding residential neighborhoods to the east of the study area. It is fed by a concrete-lined, narrow (two-feet wide) ditch running along the edge of Jackson Park (Appendix D, Photo 13), which then feeds a down-cut, eroded gully in the middle of the agricultural field (Appendix D, Photo 8). This culminates in a 36-inch storm drain culvert, which culverts storm water runoff underground. This underground storm drain runs along Barrett Avenue and empties into Tennant Creek south of the study area (Figure 6).

An approximately 0.60-acre detention basin is present in the center of the study area along Barrett Avenue (Appendix D, Photo 7). This basin appears to collect runoff from Barrett Avenue and the surrounding agricultural fields during periods of high precipitation. The outflow from this basin is connected via an underground pipe under Barrett Avenue to the storm drain on the south side of Barret Avenue. No wetland vegetation was observed in this detention basin, and no signs of recent hydrology were observed.

3.1.4 Rationale for Sample Point Choice

Eight sample points and two OHWM transects were selected to document conditions in representative jurisdictional and non-jurisdictional areas (Figure 7, Appendix C). Rationale and findings for wetland data form sample point locations are summarized in Table 4.

Table 4. Summary of Sample Point Locations and Results

Name	Sampling Rationale	Hydrophytic Vegetation?	Hydric Soil?	Wetland Hydrology?	Overall Wetland Assessment
SP1	Sample point taken to characterize Tennant Creek in the NW corner of parcel.	No	No	Yes	This area is an intermittent drainage and therefore a "waters of the U.S." Wetlands are not present in the channel bed in this location.
SP2	Sample point taken to characterize Tennant Creek in the central portion of the study area.	No	No	Yes	This area is an intermittent drainage and therefore a "waters of the U.S." Wetlands are not present in the channel bed in this location.
SP3	Sample point taken to characterize a seasonal wetland on the channel bed of Tennant Creek south of Barrett Avenue (SW-1).	Yes	Yes	Yes	This area is a three parameter wetland.
SP4	Placed in uplands as a paired point to SP3.	No	No	No	Upland; this area does not meet the three parameter USACE wetland criteria.
SP5	Sample point taken to investigate an abandoned agricultural tail pond.	No	No	No	This area does not meet the three parameter wetland criteria.
SP6	Sample point taken to investigate an abandoned agricultural tail pond.	No	No	No	This area does not meet the three parameter wetland criteria.
SP7	Sample point taken to characterize the majority of the agricultural field.	No	No	No	Upland position; this area does not meet the three parameter wetland criteria.
SP8	Sample point taken to characterize the ephemeral drainage.	No	No	No	This area does not meet the three parameter wetland criteria.

OHWM-1 was placed perpendicular to Tennant Creek to characterize the drainage along the western edge of the property (Appendix C; Appendix D, Photo 1, 2, 3). Tennant Creek is an engineered channel with intermittent flow during most winter seasons. It is a channelization of a historical drainage. OHWM-2 was placed perpendicular to the ephemeral drainage in the eastern portion of the wetland delineation study area (Appendix C; Appendix D, Photo 9, 11, 12, 13). This feature is considered a non-jurisdictional feature from the perspective of USACE regulation. While bed and bank channel morphology is present, this is likely due to erosion from storm water runoff from the adjacent neighborhoods. There was no flowing water observed at the time of the survey or indication of recent flow.

3.1.5 Photo Points

Photo point labels, coordinates, and rationales for photo documentation are presented in Table 5 and depicted on Figure 6. Photos are presented in Appendix D.

Table 5. Coordinates and Rationale for Photo Points

Label	Latitude, Longitude	Depiction
Photo 1	37.13396544°N, -121.6123959°W	Representative photograph of the OHWM of Tennant Creek (SP1).
Photo 2	37.13283063°N, -121.6116066°W	Tennant Creek in the center of the parcel.
Photo 3	37.13289594°N, -121.6102174°W	Tennant Creek channel bed in center of parcel (OHWM-01).
Photo 4	37.13103061°N, -121.6092095°W	Concrete culvert for Tennant Creek under Barret Avenue (C-2)
Photo 5	37.13080799°N, -121.6091489°W	Seasonal wetland (SW-1) in the Tennant Creek channel bed south of Barrett Avenue (SP2).
Photo 6	37.13083312°N, -121.6091419°W	Soil redox features in sandy soil at SP2.
Photo 7	37.13165018°N, -121.6087792°W	Abandoned agricultural tail pond in center of study area along Barrett Avenue.
Photo 8	37.13305918°N, -121.6087114°W	Representative photograph of the agricultural nature of the study area (SP7).
Photo 9	37.13515707°N, -121.6059831°W	Ephemeral drainage in the eastern portion of the study area (SP8).
Photo 10	37.13510837°N, -121.6060465°W	Storm drain culvert at the downstream end of the ephemeral drainage.
Photo 11	37.13557412°N, -121.6053445°W	Ephemeral drainage at OHWM-02.
Photo 12	37.13571846°N, -121.6046139°W	Ephemeral drainage just to east of the parcel.
Photo 13	37.13615839°N, -121.6045049°W	Concrete-lined ephemeral drainage in the park to the northeast of the parcel.

3.2 Identification of Potential Section 404 Wetlands

In general, the area considered to be a wetland included a stand of hydrophytes and/or areas determined to be ponded and/or saturated for long duration. Approximately 0.03 ac of potential USACE jurisdictional wetlands were identified within the study area (Figure 7).

3.2.1 Seasonal Wetlands

Seasonal wetlands generally result from spring rain and typically occur in slight depressions in open fields, at the base of hillslopes, or in the case of the study area, in channel beds of intermittent drainages. Surface water may be lacking during the summer and fall, but seasonal wetlands typically support hydrophytic plants year-round. One seasonal wetland feature was mapped within the study area.

Seasonal Wetlands (SW1). A small patch of seasonal wetland was mapped in the channel bed of Tennant Creek on the south side of Barrett Avenue (Figure 7; Appendix C, SP3; Appendix D, Photos 5 and 6). At the time of the survey, the soil underlaying this wetland was saturated. This portion of the intermittent stream was likely receiving runoff from a storm drain that empties into Tennant Creek just downstream of the edge of the study area.

Vegetation. The seasonal wetland was dominated by hydrophytic vegetation, with curly dock (*Rumex crispus*, FAC) and Italian wild rye (*Hordeum murinum,* FAC) comprising the majority of the cover. Other hydrophytic species observed in this wetland included tall flat sedge (*Cyperus eragrostis*, FACW) and poison hemlock (*Conium maculatum*, FACW).

Soils. The soils within these wetlands were primarily coarse sandy loam. These soils were considered to be hydric based on the presence of redox features, including distinct and abundant redox concentrations in the top twelve inches of the sandy soil (hydric soil field indicator S5).

Hydrology. Soil saturation was observed in the top 10 inches of the soil pit dug to characterize this wetland. In addition, the wetland is contained within the OHWM of Tennant Creek at this location. This portion of the creek was more moist than the remainder of the creek north of Barrett Avenue, likely due to inputs from a nearby storm drain outfall.

3.3 Identification of Potential Section 404 Other Waters

Within the study area, a single potentially jurisdictional Section 404 "other waters" feature was mapped – the intermittent stream bed of Tennant Creek.

3.3.1 Intermittent Stream

In general, intermittent streams are characterized as drainages that have a seasonal connection to groundwater and flow during at least a portion of the wet season, and are dry through most or all of the dry season in normal rainfall years. In the wet season, intermittent streamflow occurs when the water table is raised, or rejuvenated, following early season rains that fill shallow subsurface aquifers. Intermittent stream habitat within the study area is limited to the 0.033 ac and 1,854 linear feet of Tennant Creek in the study area (Appendix C, OHWM-01; Appendix D, Photos 2 and 3; Figure 7). In addition, two culverts, totaling 71 linear feet, occur as extensions of Tennant Creek within the study area, conveying it under a dirt farm road in the center of the property (C-1) and under Barret Avenue (C-2).

Tennant Creek (Intermittent Stream IS-1). Tennant Creek runs along the western edge of the property through the study area. Tennant Creek originates to the north of the study area, enters the study area in the northeast corner where it then runs along the western edge of the property, and finally exits in the southwest corner south of Barrett Avenue. Within the study area (as with the portions to the north and south of the study area), Tennant Creek is an engineered channel with a trapezoidal shape. The banks of the channel are steep and even throughout the study area with a vegetative cover composed primarily of non-native annual grasses. A limited number of valley oaks (*Quercus lobata*, FACU) are rooted in the channel banks in the center of the property. The channel bed at the time of the survey was dry and primarily composed of upland grass species such as wild oats (*Avena fatua*, UPL) and bromes (*Bromus* spp., UPL), with some patches of Italian rye grass (FAC). Where vegetation was lacking, the channel substrate was primarily small gravel, some sand, and dirt. There was no direct indicator of major flow events in the prior winter season. Wetland vegetation was lacking in the channel bed, except for a segment south of Barrett Avenue (see description under Section 3.2.1).

According to data from San Francisco Estuary Institute (SFEI) and historical mapping of wetlands and waters in south Santa Clara County by Sowers and Henkle (2009), Tennant Creek appears to have been a historical creek that would have naturally had at least intermittent flow in the general vicinity of where it is currently situated. Its headwaters would have been located just to the north of the study area and it would have been largely fed by ephemeral drainages and seasonal flow from the hills to the east. Tennant Creek has been realigned relative to its historical location. The downstream half of the segment of Tennant Creek in the study area resembles the historical alignment fairly closely, whereas the upstream half has been realigned due to the presence of residential development to the northwest. Based on examination of aerial photos (Appendix H, Figure 2), it is estimated that this realignment occurred in the 1970s, concurrently with construction of that residential development. Currently, Tennant Creek is hydrologically connected via seasonal flow to Corralitos Creek and then little Llagas Creek to the south.

The ephemeral drainage would be considered non-jurisdictional, from the perspective of USACE regulation, under the Navigable Waters Protection Rule, and is instead discussed in Section 3.4 below.

3.4 Identification of Section 401 Potentially Jurisdictional Waters of the State

The extent of Section 401 waters of the state (RWQCB jurisdiction) in the study area includes a total of 1.03 ac, including areas within Section 404 jurisdiction as described above, but would likely include an ephemeral drainage in the eastern portion of the study area (Figure 8). This ephemeral drainage (Figure 8; Appendix D, Photos 9 and 11) is fed by storm water runoff, with flows being episodic (following large storm events) and brief. Within the parcel boundary, the feature is gully-like and formed by erosion and down-cutting of the otherwise level, but gently sloping field. The "channel bed" of the ephemeral drainage is narrow (roughly one foot wide), and the banks are steep and eroding. At the downstream end of the drainage, storm water runoff flows into a 36-inch corrugated metal pipe (CMP) culvert, which flows underground to the south, and then along Barrett Avenue, where it then empties into Tennant Creek south of the study area (Appendix D, Photos 10) . Outside of the parcel, but within the study area in Jackson Park, the ephemeral drainage is concrete-lined and is fed by runoff from the surrounding neighborhood (Figure 6; Appendix D, Photos 12).

In addition, waters of the state within the study area would include "riparian" areas up to the top of bank of all jurisdictional features, including Tennant Creek and the ephemeral drainage. This includes ruderal grassland habitat on the sides of the bank of these drainages up to the top of bank, which was identified in the field as a hinge point and obvious shift in slope from channel bank to level slope.

3.5 Identification of CDFW Potentially Jurisdictional Habitats

The extent of CDFW jurisdictional habitats in the study area includes a total of 1.47 ac, which includes areas within Section 404/401 jurisdiction as described above. In addition, where trees are rooted just outside of the top of bank but are considered "riparian" because they would have allochthonous inputs to these drainages (e.g. leaf debris, woody material inputs, etc.), the outer dripline of these canopies was delineated and is shown on Figure 8 as woody riparian. Within the study area, there are two areas where woody riparian vegetation is rooted at or just outside the top of bank and overhanging the drainages. The first consists of approximately seven small valley oak trees (FACU) rooted just below the top of bank of Tennant Creek in the center of the study area. The second consist of a small grove of coast live oak trees outside the parcel boundary but within the study area on the edge of Jackson Park, in which the coast live oak are rooted outside the top of bank of the ephemeral drainage but whose canopy is shading the drainage (Figure 8, Appendix D, Photo 12).

3.6 Areas Not Meeting the Regulatory Definition of Waters of the U.S./State or CDFW Jurisdictional Habitat

The remainder of the study area does not meet the regulatory definitions of Section 404/401 wetlands or other waters, or the regulatory definitions of CDFW jurisdictional habitats. Four of the eight wetland sample points were in upland areas (Appendix C, SP3, SP5, SP6, and SP7). Non-jurisdictional uplands include the following land cover types: Rural-residential, urban-suburban, agriculture (grain, row-crop, hay and pasture, disked/short-term fallowed), and golf courses/urban parks. These land cover types occur in upland landscape positions and

do not meet the USACE criteria for wetlands or other waters. The urban-suburban land cover type consists of Barrett Avenue which is a paved road. The urban parks land cover type consists of Jackson Park in the northeast corner of the study area where the vegetative cover largely consists of lawn and other landscaping. Vegetation in the rural residential portion of the study area (in the southeast corner of the property around the farm buildings, consists of non-native annual grasses and forbs such as ripgut brome (UPL), wild oats (UPL), and black mustard (*Brassica nigra*, UPL) in the areas around the farm buildings. Soils were observed to be sandy loam or loamy sand with no mottles and no other indicators of regular inundation (*i.e.*, organic buildup or streaking). Similar, in the fallowed field, the ground had been recently disked and vegetation consisted of ruderal (i.e. weedy), upland grasses and forbs, including black mustard and prickly lettuce (*Lactuca serriola*, FACU).

SP5 and SP6 were taken to examine an excavated detention basin in the southern portion of the study area along Barrett Avenue (Appendix C, SP5 and SP6; Appendix D, Photo 7). This feature appears to serve primarily to detain stormwater runoff from Barrett Avenue during large storm events. Vegetation in the bottom of the basin is dominated by upland plant species including soft chess (*Bromus hordeaceous*, FACU), ripgut brome (UPL), and wild oats (UPL), with some facultative species such as Italian rye grass (FAC) and Mediterranean barley (*Hordeum marinum* var. *gussoneanum*, FAC). The soils observed at SP5 and SP6 were well-drained sandy loam soils and no redoximorphic features or other indicators of hydric soils were observed. No indicators of hydrology were observed either. The basin appears to have been excavated in what was previously uplands, and solely drains uplands and is therefore considered a non-jurisdictional feature from the perspective of USACE regulation.

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Appendix A. Plants Observed in the Study Area

Family	Scientific Name	Common Name	WIC
Apiaceae	*Conium maculatum*	Poison-hemlock	FACW
	Torilis arvensis	Field hedge parsley	UPL
Asteraceae	*Carduus pycnocephalus*	Italian thistle	UPL
	Helminthotheca echioides	Bristly ox-tongue	FAC
	Lactuca serriola	Prickly lettuce	FACU
	Silybum marianum	Milk thistle	UPL
Brassicaceae	*Brassica nigra*	Black mustard	UPL
Convolvulaceae	*Convolvulus arvensis*	Field bindweed	UPL
Cyperaceae	*Cyperus eragrostis*	Tall flat sedge	FACW
Onagraceae	*Epilobium brachycarpum*	Willowherb	FAC
Poaceae	*Avena barbata*	Slender oats	UPL
	Bromus diandrus	Ripgut brome	UPL
	Bromus hordeaceus	Soft chess	FACU
	Festuca perennis	Italian rye grass	FAC
	Hordeum marinum ssp. gussoneanum	Mediterranean barley	FAC
Polygonaceae	*Rumex crispus*	Curly dock	FAC
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	FAC
Rubiaceae	*Galium aparine*	Cleavers	FACU

Appendix B. NRCS Soil Survey Report for the Study Area

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 Eastern Santa Clara Area, California

New Horizons Development Project

May 10, 2021

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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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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

Map Scale: 1:6,320 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

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 1:24,000.

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: Eastern Santa Clara Area, California
Survey Area Data: Version 16, May 29, 2020

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

Date(s) aerial images were photographed: Mar 31, 2019—Apr 24, 2019

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ArA	Arbuckle gravelly loam, 0 to 2 percent slopes, MLRA 14	0.2	0.2%
CrA	Cropley clay, 0 to 2 percent slopes, MLRA 14	45.5	62.1%
CrC	Cropley clay, 2 to 9 percent slopes, MLRA 14	9.7	13.3%
HfC	Hillgate silt loam, 2 to 9 percent slopes	1.9	2.6%
SdA	San Ysidro loam, 0 to 2 percent slopes, MLRA 14	15.9	21.7%
Totals for Area of Interest		**73.3**	**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.

Eastern Santa Clara Area, California

ArA—Arbuckle gravelly loam, 0 to 2 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2t7r7
Elevation: 220 to 420 feet
Mean annual precipitation: 20 to 23 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Arbuckle

Setting

Landform: Fan remnants
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 6 inches: gravelly loam
A - 6 to 10 inches: gravelly loam
Bt1 - 10 to 20 inches: gravelly loam
Bt2 - 20 to 32 inches: gravelly loam
Bt3 - 32 to 40 inches: gravelly loam
C - 40 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.3 to 0.5 mmhos/cm)
Available water capacity: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Pleasanton, loam
Percent of map unit: 8 percent
Hydric soil rating: No

San ysidro, loam
Percent of map unit: 7 percent
Hydric soil rating: No

CrA—Cropley clay, 0 to 2 percent slopes, MLRA 14

Map Unit Setting
National map unit symbol: 2tb9f
Elevation: 20 to 2,040 feet
Mean annual precipitation: 12 to 27 inches
Mean annual air temperature: 56 to 60 degrees F
Frost-free period: 275 to 360 days
Farmland classification: Prime farmland if irrigated

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

Description of Cropley

Setting
Landform: Alluvial fans, terraces
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from calcareous shale

Typical profile
A1 - 0 to 13 inches: clay
Bss - 13 to 32 inches: clay
Bk - 32 to 36 inches: sandy clay loam
BCk2 - 36 to 52 inches: sandy clay loam
BCk2 - 52 to 79 inches: sandy clay loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (1.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: R014XD001CA - CLAYEY
Hydric soil rating: No

Minor Components

Clear lake

Percent of map unit: 4 percent
Landform: Basin floors
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Salinas

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

Concepcion

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

Diablo

Percent of map unit: 3 percent
Landform: Low hills
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Sorrento

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

CrC—Cropley clay, 2 to 9 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2tb9j
Elevation: 0 to 2,340 feet
Mean annual precipitation: 12 to 28 inches
Mean annual air temperature: 56 to 60 degrees F
Frost-free period: 270 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Cropley and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cropley

Setting

Landform: Alluvial fans, terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope, tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from calcareous shale

Typical profile

A1 - 0 to 11 inches: clay
Bss1 - 11 to 51 inches: clay
BCk1 - 51 to 79 inches: sandy clay loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (1.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C

Ecological site: R014XD001CA - CLAYEY
Hydric soil rating: No

Minor Components

Salinas
Percent of map unit: 3 percent
Landform: Terraces, alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope, tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Los osos
Percent of map unit: 3 percent
Landform: Hillslopes, ridges
Landform position (two-dimensional): Backslope, shoulder, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, concave
Across-slope shape: Convex, concave
Hydric soil rating: No

Clear lake
Percent of map unit: 2 percent
Landform: Basin floors
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Capay
Percent of map unit: 2 percent
Landform: Flood plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

HfC—Hillgate silt loam, 2 to 9 percent slopes

Map Unit Setting
National map unit symbol: hbk2
Elevation: 200 to 1,990 feet
Mean annual precipitation: 16 to 25 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 200 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hillgate and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hillgate

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 40 inches: clay loam, clay
H2 - 10 to 40 inches: gravelly clay loam
H3 - 40 to 60 inches:

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water capacity: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Pleasanton, grl

Percent of map unit: 3 percent
Hydric soil rating: No

San ysidro, loam

Percent of map unit: 2 percent
Hydric soil rating: No

SdA—San Ysidro loam, 0 to 2 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2tyys
Elevation: 70 to 1,990 feet
Mean annual precipitation: 13 to 22 inches
Mean annual air temperature: 59 to 61 degrees F
Frost-free period: 300 to 360 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of San Ysidro

Setting

Landform: Terraces, alluvial fans, valley floors
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

A - 0 to 23 inches: loam
B1 - 23 to 38 inches: clay loam
Bt2 - 38 to 64 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 16 to 24 inches to abrupt textural change
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R014XE029CA - LOAMY CLAYPAN
Hydric soil rating: No

Minor Components

Arbuckle
Percent of map unit: 6 percent
Hydric soil rating: No

Rincon
Percent of map unit: 2 percent
Hydric soil rating: No

Solano
Percent of map unit: 2 percent
Hydric soil rating: No

Pleasanton, loam
Percent of map unit: 2 percent
Hydric soil rating: No

Cropley, clay
Percent of map unit: 1 percent
Hydric soil rating: No

Pescadero
Percent of map unit: 1 percent
Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Palexeralfs
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

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Appendix C. USACE Arid West Wetland Data Forms and OHWM Datasheets

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: New Horizons Project | City/County: City of Morgan Hill/Santa Clara County | Sampling Date: 04/30/2021
Applicant/Owner: Rocke Garcia | State: CA | Sampling Point: 01
Investigator(s): M. Bibbo | Section, Township, Range: N/A
Landform (hillslope, terrace, etc): Terrace | Local relief (concave, convex, none): concave | Slope (%): 0
Subregion (LRR): LRR-C | Lat: 37.1339295 | Long: -121.61238017 | Datum: WGS84
Soil Map Unit Name: San Ysidro loam, 0 to 2 percent slopes (SdA) | NWI classification: Riverine
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, 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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
The region has received below average precipitation for this time of year. Sample point taken to characterize the intermittent stream of Tennant creek in the north west corner of the property. Upland vegetation present within channel bed.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 x 10 ft)			
1. *Brassica nigra* / Black mustard	40	Yes	NI
2. *Lolium perenne* / Perennial rye grass	20	Yes	FAC
3. *Bromus diandrus* / Ripgut brome, Ripgut grass	15	No	NI
4. *Torilis arvensis* / Field hedge parsley, Tall sock-destroyer	10	No	NI
5. *Conium maculatum* / Poison hemlock	5	No	FACW
6. *Silybum marianum* / Milk thistle	5	No	NI
7. *Galium aparine* / Cleavers, Goose grass	5	No	FACU
8.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	5	x 2 =	10	
FAC species	20	x 3 =	60	
FACU species	5	x 4 =	20	
UPL species	70	x 5 =	350	
Column Totals:	100	(A)	440	(B)

Prevalence Index = B/A = 4.4

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 01

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5YR 3/2	100						Many fine roots.
1-14	7.5YR 3/2	100					L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ 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:

No redox features observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Sample point is taken in the bed of an intermittent drainage.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: New Horizons Project | City/County: City of Morgan Hill/Santa Clara County | Sampling Date: 04/30/2021
Applicant/Owner: Rocke Garcia | State: CA | Sampling Point: 02
Investigator(s): M. Bibbo | Section, Township, Range: N/A
Landform (hillslope, terrace, etc): Terrace | Local relief (concave, convex, none): concave | Slope (%): 0
Subregion (LRR): LRR-C | Lat: 37.13279167 | Long: -121.61162433 | Datum: WGS84
Soil Map Unit Name: San Ysidro loam, 0 to 2 percent slopes (SdA) | NWI classification: Riverine
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, 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	____	No	X
Hydric Soil Present?	Yes	____	No	X
Wetland Hydrology Present?	Yes	X	No	____

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
The region has received below average precipitation for this time of year. Sample point taken to characterize the intermittent stream of Tennant creek in the center of the property. Upland vegetation present within channel bed.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Herb Stratum (Plot size: 10 x 10 ft)			
1. *Avena barbata* / Slim oat, Slender wild oat	20	Yes	NI
2. *Torilis arvensis* / Field hedge parsley, Tall sock-destroyer	20	Yes	NI
3. *Bromus diandrus* / Ripgut brome, Ripgut grass	15	Yes	NI
4. *Brassica nigra* / Black mustard	15	Yes	NI
5. *Lolium perenne* / Perennial rye grass	10	No	FAC
6. *Lactuca serriola* / Prickly lettuce	5	No	FACU
7. *Convolvulus arvensis* / Field bindweed, Bindweed, Orchard r	5	No	NI
8. *Cyperus eragrostis* / Tall cyperus	2	No	FACW
	92	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	10	x 3 =	30
FACU species	5	x 4 =	20
UPL species	75	x 5 =	375
Column Totals:	92 (A)		429 (B)

Prevalence Index = B/A = 4.66

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
Upland vegetation.

SOIL

Sampling Point: 02

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5YR 3/2	100					L	Many fine roots.
1-14	7.5YR 3/2	100					L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ 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:

No redox features observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Sample point is taken in the bed of an intermittent drainage.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: New Horizons Project | City/County: City of Morgan Hill/Santa Clara County | Sampling Date: 04/30/2021
Applicant/Owner: Rocke Garcia | State: CA | Sampling Point: 03
Investigator(s): M. Bibbo | Section, Township, Range: N/A
Landform (hillslope, terrace, etc): Channel bed. | Local relief (concave, convex, none): concave | Slope (%): 0
Subregion (LRR): LRR-C | Lat: 37.13255033 | Long: -121.609888 | Datum: WGS84
Soil Map Unit Name: San Ysidro loam, 0 to 2 percent slopes (SdA) | NWI classification: Riverine.
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
The region has received below average precipitation for this time of year. Point taken in SW-1, a seasonal wetland within the channel bed of Tennant creek on the south side of Barrett avenue.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 x 10 ft)			
1. *Rumex crispus* / Curly dock	60	Yes	FAC
2. *Lolium perenne* / Perennial rye grass	20	Yes	FAC
3. *Cyperus eragrostis* / Tall cyperus	15	No	FACW
4. *Conium maculatum* / Poison hemlock	5	No	FACW
5.			
6.			
7.			
8.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		280 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 03

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/2	65	2.5YR 4/6	35	C	M	COSL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ 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 X No ___

Remarks:

Distinct, abundant redox features observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- X Sediment Deposits (B2) **(Riverine)**
- X Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Wetland vegetation occurs within the bed of the channel. Within the OHWM of the creek.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: New Horizons Project | City/County: City of Morgan Hill/Santa Clara County | Sampling Date: 04/30/2021
Applicant/Owner: Rocke Garcia | State: CA | Sampling Point: 04
Investigator(s): M. Bibbo | Section, Township, Range: N/A
Landform (hillslope, terrace, etc): Slope of channel bank. | Local relief (concave, convex, none): none | Slope (%): 15
Subregion (LRR): LRR-C | Lat: 37.130802 | Long: -121.609086 | Datum: WGS84
Soil Map Unit Name: San Ysidro loam, 0 to 2 percent slopes (SdA) | NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, 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 ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
The region has received below average precipitation for this time of year. Upland paired point to SP-3.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 x 10 ft)			
1. *Brassica nigra* / Black mustard	65	Yes	NI
2. *Bromus diandrus* / Ripgut brome, Ripgut grass	15	No	NI
3.			
4.			
5.			
6.			
7.			
8.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1. *Rubus armeniacus* / Himalayan blackberry	5	Yes	FAC
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	80	x 5 =	400
Column Totals:	85 (A)		415 (B)

Prevalence Index = B/A = 4.88

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
Ruderal upland vegetation is dominant.

SOIL

Sampling Point: 04

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	7.5YR 3/2	100					L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ 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:

Upland, well drained soils.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Upland landscape position.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: New Horizons Project | City/County: City of Morgan Hill/Santa Clara County | Sampling Date: 04/30/2021
Applicant/Owner: Rocke Garcia | State: CA | Sampling Point: 05
Investigator(s): M. Bibbo | Section, Township, Range: N/A
Landform (hillslope, terrace, etc): Storm Water Detention basin | Local relief (concave, convex, none): concave | Slope (%): 0
Subregion (LRR): LRR-C | Lat: 37.1316475 | Long: -121.60878333 | Datum: WGS84
Soil Map Unit Name: San Ysidro loam, 0 to 2 percent slopes (SdA) | NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, 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 ____	No X		
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X

Remarks:
The region has received below average precipitation for this time of year. Point taken to examine an abandoned stormwater detention pond (or agricultural tail pond). Upland vegetation is dominant on the bottom of the basin.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 x 10 ft)			
1. *Bromus hordeaceus* / Soft chess	25	Yes	FACU
2. *Bromus diandrus* / Ripgut brome, Ripgut grass	25	Yes	NI
3. *Hordeum marinum ssp. gussoneanum* / Barley, Mediterranea	25	Yes	FAC
4. *Lolium perenne* / Perennial rye grass	10	No	FAC
5. *Rumex crispus* / Curly dock	1	No	FAC
6.			
7.			
8.			
	86	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	36	x 3 =	108
FACU species	25	x 4 =	100
UPL species	25	x 5 =	125
Column Totals:	86 (A)		333 (B)

Prevalence Index = B/A = 3.87

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
Mix of upland and FAC grasses. Upland species are more dominant.

SOIL

Sampling Point: 05

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	7.5YR 3/2						Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ 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:

Redox features not observed. Soils appear to be well drained.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No indicators of hydrology observed. Abandoned agricultural tail pond.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: New Horizons Project | City/County: City of Morgan Hill/Santa Clara County | Sampling Date: 04/30/2021
Applicant/Owner: Rocke Garcia | State: CA | Sampling Point: 06
Investigator(s): M. Bibbo | Section, Township, Range: N/A
Landform (hillslope, terrace, etc): Storm Water Detention basin | Local relief (concave, convex, none): concave | Slope (%): 0
Subregion (LRR): LRR-C | Lat: 37.13155317 | Long: -121.60852267 | Datum: WGS84
Soil Map Unit Name: Hill gate silt loam, 2 to 9 percent slopes | NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, 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 ____	No X		
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X

Remarks:
The region has received below average precipitation for this time of year. Point taken to examine an abandoned stormwater detention pond (or agricultural tail pond). Upland vegetation is dominant on the bottom of the basin.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 x 10 ft)			
1. *Bromus hordeaceus* / Soft chess	35	Yes	FACU
2. *Avena barbata* / Slim oat, Slender wild oat	30	Yes	NI
3. *Hordeum marinum ssp. gussoneanum* / Barley, Mediterranea	25	Yes	FAC
4. *Lolium perenne* / Perennial rye grass	10	No	FAC
5.			
6.			
7.			
8.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	35	x 4 =	140
UPL species	30	x 5 =	150
Column Totals:	100 (A)		395 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
Mix of upland and FAC grasses. Upland species are more dominant.

SOIL

Sampling Point: 06

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/2						L	Many fine roots in top 2 inches.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ 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:

Redox features not observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No indicators of hydrology observed. Abandoned agricultural tail pond.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: New Horizons Project | City/County: City of Morgan Hill/Santa Clara County | Sampling Date: 04/30/2021
Applicant/Owner: Rocke Garcia | State: CA | Sampling Point: 07
Investigator(s): M. Bibbo | Section, Township, Range: N/A
Landform (hillslope, terrace, etc): Level field. | Local relief (concave, convex, none): none | Slope (%): 0
Subregion (LRR): LRR-C | Lat: 37.13308183 | Long: -121.60868317 | Datum: WGS84
Soil Map Unit Name: Cropley clay, 0 to 2 percent slopes, MLRA 14 (CrA) | NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, 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 ____	No X		
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
The region has received below average precipitation for this time of year. The point was taken to characterize the typical condition of the site, an open tilled agricultural field.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 x 10 ft)			
1. *Brassica nigra* / Black mustard	50	Yes	NI
2. *Lactuca serriola* / Prickly lettuce	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	25	x 4 =	100
UPL species	50	x 5 =	250
Column Totals:	75 (A)		350 (B)

Prevalence Index = B/A = 4.67

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
The field was recently tilled, but mustard appears to have been the dominant species.

SOIL

Sampling Point: 07

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	7.5YR 3/2	100					L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ 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:

Well drained soil. No redox features observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Well drained level field. No indicators of hydrology observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: New Horizons Project | City/County: City of Morgan Hill/Santa Clara County | Sampling Date: 04/30/2021
Applicant/Owner: Rocke Garcia | State: CA | Sampling Point: 08
Investigator(s): M. Bibbo | Section, Township, Range: N/A
Landform (hillslope, terrace, etc): Narrow channel in level field. | Local relief (concave, convex, none): none | Slope (%): 0
Subregion (LRR): LRR-C | Lat: 37.1351675 | Long: -121.60595267 | Datum: WGS84
Soil Map Unit Name: Cropley clay, 2 to 9 percent slopes, MLRA 14 (CrC) | NWI classification: N/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, 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 ____	No X		
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes ____	No X	**within a Wetland?**	Yes ____ No X

Remarks:
The region has received below average precipitation for this time of year. The point was taken to characterize the ephemeral drainage in the north east portion of the property.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 x 10 ft)			
1. *Avena barbata* / Slim oat, Slender wild oat	35	Yes	NI
2. *Lolium perenne* / Perennial rye grass	20	Yes	FAC
3. *Carduus pycnocephalus* / Italian thistle	15	No	NI
4. *Epilobium brachycarpum* / Willow herb	10	No	FAC
5. *Helminthotheca echioides* / Bristly ox-tongue	10	No	FAC
6. *Silybum marianum* / Milk thistle	5	No	NI
7. *Brassica nigra* / Black mustard	5	No	NI
8.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	60	x 5 =	300
Column Totals:	100 (A)		420 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
There's no differentiation in the vegetation from the bank to the bed of the channel.

SOIL

Sampling Point: 08

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5YR 4/2	100	Coarse Sandy Loam					

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ 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:

The soil has a mix of sand in it likely from runoff down the drainage. No redox features observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

The point was taken in a narrow (1-2 feet wide) ephemeral drainage that is wholly fed by storm water runoff, and feeds a storm drain at its downstream end. The drainage does contain a bed and bank. But otherwise there were no other indicators of hydrology.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: New Horizons Project
Project Number: 4046-01
Stream: Tennant Creek
Investigator(s): M. Bibbo

Date: 04/30/2021 **Time:** 10:15 AM
Town: City of Morg... **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: Undeveloped parcel at the corner of Hill Road and Barrett Ave.

Projection: N/A **Datum:** WGS84
Coordinates: 37.13273333, -121.61004033

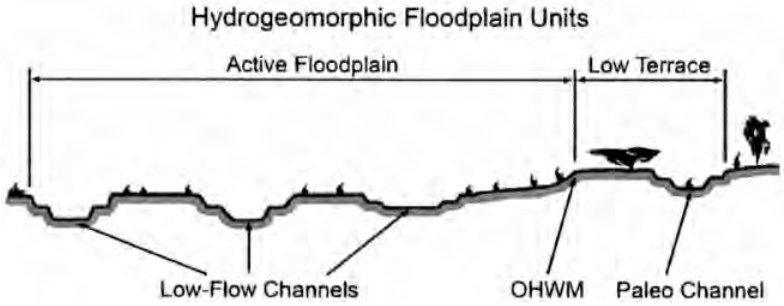
Potential anthropogenic influences on the channel system:
Channel is an engineered channel. Maintained by either valley water or the city.

Brief site description:
Active agricultural field.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☒ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

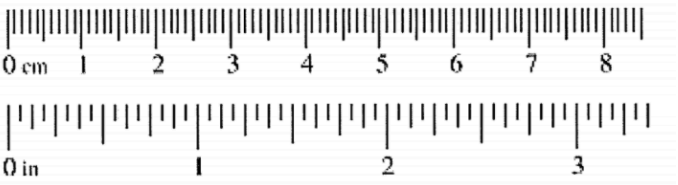


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   ☐ Mapping on aerial photograph ☐ GPS
   ☐ Digitized on computer ☐ Other:

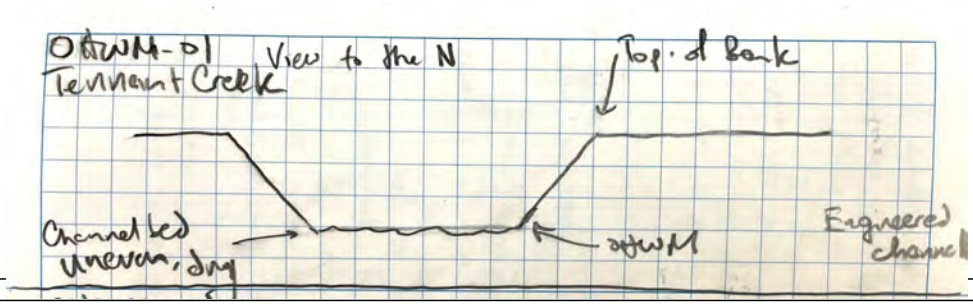
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
0.0098	0.25	Medium sand	Sand
		Fine sand	
0.005	0.125		
0.0025	0.0625	Very fine sand	
		Coarse silt	
0.0012	0.031		
0.00061	0.0156	Medium silt	Silt
		Fine silt	
0.00031	0.0078		
0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 4046-01 **Cross section ID:** OHWM-01 **Date:** 04/30/2021 **Time:** 10:15 AM

Cross section drawing:



OHWM

GPS point: 37.13273333, -121.61004033

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:
Channel bed well defined.

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 37.1327335, -121.61004067

Characteristics of the floodplain unit:

Average sediment texture: Soil fines.

Total veg cover: 100 % Tree: ____ % Shrub: ____ % Herb: 100 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 4046-01 **Cross section ID:** OHWM-01 **Date:** 04/30/2021 **Time:** 10:15 AM

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: New Horizons Project
Project Number: 4046-01
Stream: Tennant Creek
Investigator(s): M. Bibbo

Date: 04/30/2021 **Time:** 10:15 AM
Town: City of Morg... **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Undeveloped parcel at the corner of Hill Road and Barrett Ave.

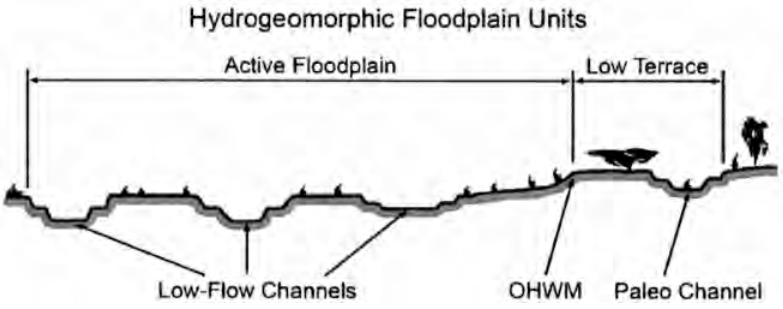
Projection: N/A **Datum:** WGS84
Coordinates: 37.1355285, -121.60537867

Potential anthropogenic influences on the channel system:
Channel is a stormwater drainage feature. Maintained by or the city.

Brief site description:
Active agricultural field.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☒ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

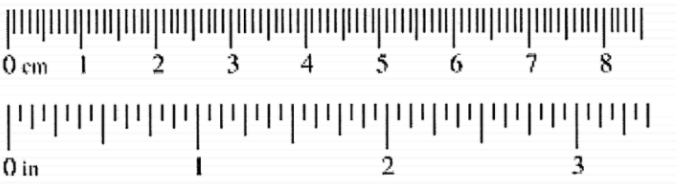


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

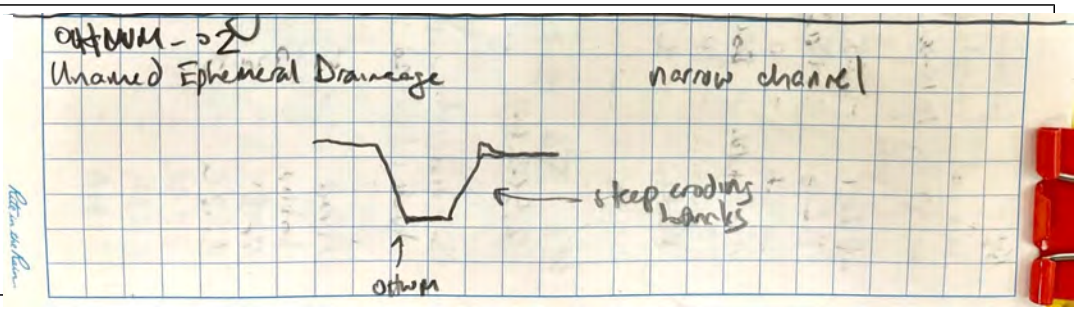
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
0.0098	0.25	Medium sand	Sand
		Fine sand	
0.005	0.125		
0.0025	0.0625	Very fine sand	
		Coarse silt	
0.0012	0.031		
0.00061	0.0156	Medium silt	Silt
		Fine silt	
0.00031	0.0078		
0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 4046-01 **Cross section ID:** OHWM-02 **Date:** 04/30/2021 **Time:** 10:15 AM

Cross section drawing:



OHWM

GPS point: 37.13552817, -121.60537967

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:
Channel bed well defined.

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 37.13552817, -121.60537967

Characteristics of the floodplain unit:

Average sediment texture: Rocky, gravelly, ...

Total veg cover: 100 % Tree: ____ % Shrub: ____ % Herb: 100 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 4046-01 **Cross section ID:** OHWM-02 **Date:** 04/30/2021 **Time:** 10:15 AM

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Appendix D. Photos of the Study Area

Photo 1. SP1. Point taken to investigate Tennant Creek in the northwest corner of the property. The sample point is within the OHWM of Tennant Creek, but three-parameter wetland are absent in the channel bed in this location. Photo direction = southeast.

Photo 2. Tennant Creek in the center of the parcel. Photo direction = north.

Photo 3. Tennant Creek channel bed in center of parcel. Upland plant species dominate the channel bed. Photo direction = south.

Photo 4. Concrete culvert for Tennant Creek under Barret Avenue. Photo direction = southwest.

Photo 5. Seasonal wetland (SW-1) in the Tennant Creek channel bed south of Barrett Avenue (SP2). Photo direction = south.

Photo 6. Soil redox features in sandy soil at SP2.

Photo 7. Abandoned agricultural tail pond.

Photo 8. The majority of the site is a fallowed agricultural field (SP7). Photo direction = northeast.

Photo 9. Ephemeral drainage in the eastern portion of the study area. The source of flow is entirely storm water run-off following storm events (SP8). Photo direction = east.

Photo 10. Storm drain culvert at the downstream end of the ephemeral drainage.

Photo 11. Ephemeral drainage at OHWM-02. Photo direction = southwest.

Photo 12. Ephemeral drainage just to east of the parcel; view to the north.

Photo 13. Concrete-lined ephemeral drainage in the park to the northeast of the parcel. Photo direction = north.

Appendix E. Aquatic Resources Table

Waters Name	Cowardin Code	HGM Code	Measurement Type	Amount	Units	Waters Type	Latitude	Longitude	Local Waterway
SW1	PEM	Riverine	Area	0.03	ACRE	NRPWW	37.0181362	-121.3318771	Little Llagas Creek
C-1	R4	Riverine	Area	0.004	ACRE	RPW	37.132556	-121.609934	Little Llagas Creek
C-2	R4	Riverine	Area	0.01	ACRE	RPW	37.130889	-121.609196	Little Llagas Creek
IS-1	R4	Riverine	Area	0.33	ACRE	RPW	37.133042	-121.610508	Little Llagas Creek

Appendix F. Signed Statement from the Property Owner(s) Allowing USACE Personnel to Enter the Property

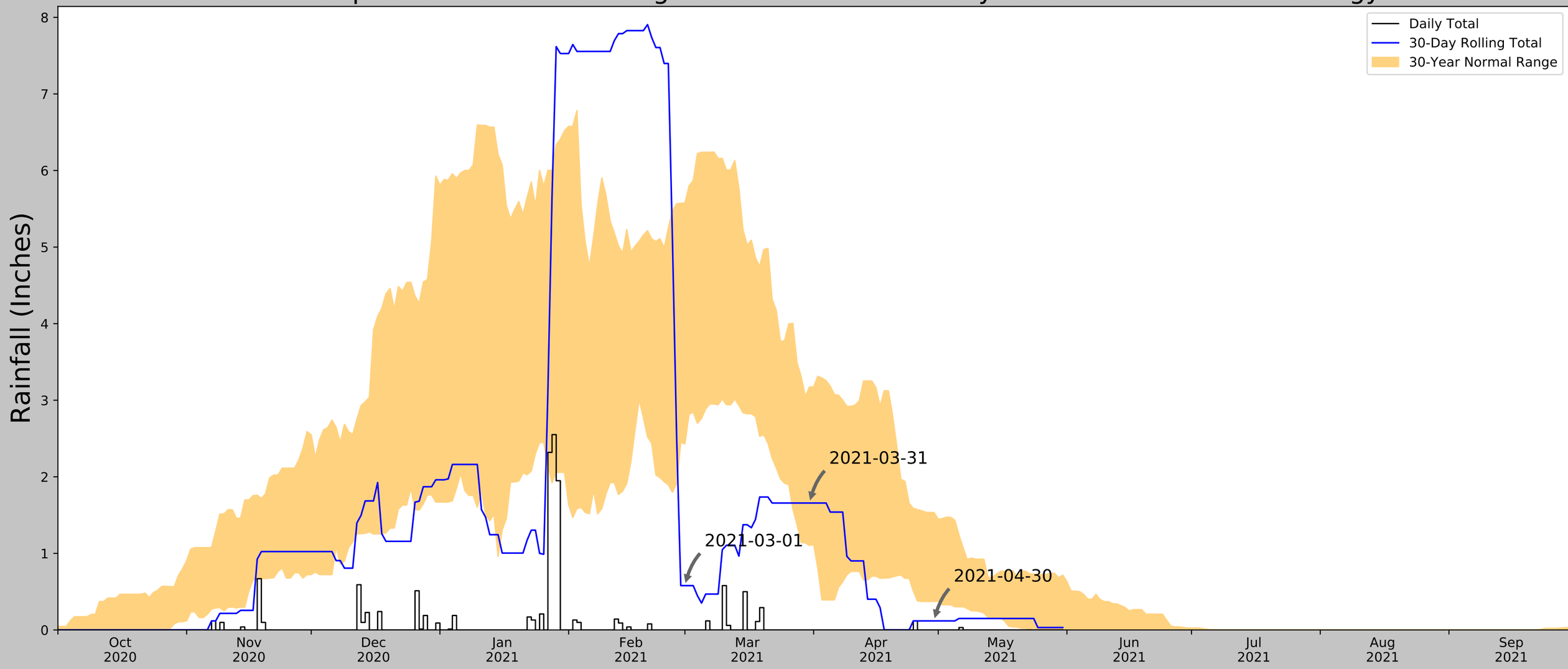
I, Rocke Garcia, will allow USACE personnel to enter my properties encompassing the New Horizons study area in Morgan Hill, California to collect samples during normal business hours. The property is not land-locked, therefore permission from the adjacent property owner(s) in order to provide access is not necessary.

Thank you,

Rocke Garcia
Glenrock Builder
P.O. Box 1179
Morgan Hill, CA 950377

Appendix G. Antecedent Precipitation Tool Output

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	37.133610, -121.607912
Observation Date	2021-04-30
Elevation (ft)	360.11
Drought Index (PDSI)	Severe drought
WebWIMP H_2O Balance	Dry Season

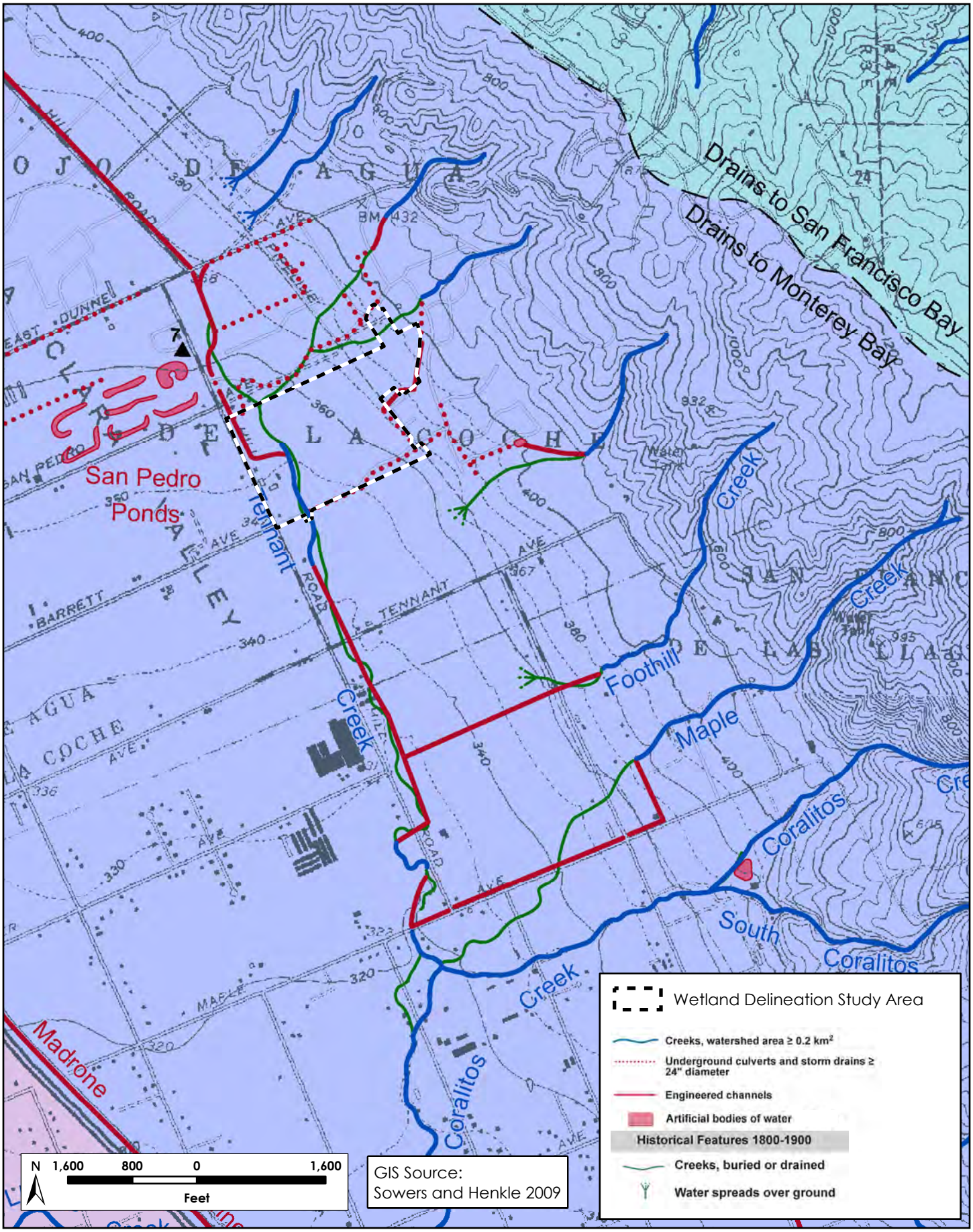
30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-04-30	0.37126	1.533858	0.11811	Dry	1	3	3
2021-03-31	1.10315	3.174016	1.65748	Normal	2	2	4
2021-03-01	2.429921	5.575591	0.57874	Dry	1	1	1
Result							Drier than Normal - 8

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
GILROY	37.0031, -121.5608	193.898	9.384	166.212	5.783	9736	61
MORGAN HILL 2.7 S	37.092, -121.6324	337.927	3.176	22.183	1.5	123	0
MORGAN HILL 1.4 SW	37.1168, -121.6591	433.071	3.05	72.961	1.595	1028	29
MORGAN HILL 4.5 NW	37.1725, -121.703	310.039	5.886	50.071	2.943	28	0
GILROY 3.8 NNE	37.0621, -121.5543	287.074	5.757	73.036	3.011	5	0
GILROY 0.1 SE	37.0092, -121.577	210.958	8.763	149.152	5.25	6	0
APTOS 2.6 E	36.9961, -121.8536	382.874	16.545	22.764	7.822	163	0
SAN JOSE 4.6 NE	37.3543, -121.7955	317.913	18.411	42.197	9.062	6	0
LOS GATOS	37.2319, -121.9592	365.157	20.495	5.047	9.326	255	0
WATSONVILLE MUNI AP	36.9358, -121.7886	160.105	16.915	200.005	10.995	3	0

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Appendix H. Creek and Watershed Map of Morgan Hill and Gilroy



N:\Projects4000\4046-01\Reports\Wetland Delineation\Wetland Delineation aprx akaiser

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Appendix H: Figure 1. New Horizons Site and Current/Historical Creeks and Channels

New Horizon Development Project Wetland Delineation Report (4046-01)
July 2021

Figure 2. Aerial image from 1953 – New Horizons site boundary

Appendix C. Plants Observed on the Project Site

Family	Scientific Name	Common Name	Native/Cal-IPPC status[1]
Gymnosperms			
Cupressaceae	*Juniperus chinensis*	Chinese juniper	Non-native
	Sequoia sempervirens	California redwood	Native
Eudicots			
Apiaceae	*Conium maculatum*	poison hemlock	Non-native/M
Apocynaceae	*Asclepias fascicularis*	narrow leaf milkweed	Native
Asteraceae	*Baccharis salicifolia*	mulefat	Native
	Centaurea solstitialis	yellow starthistle	Non-native/H
	Cichorium intybus	chicory	Non-native
	Dittrichia graveolens	stinkwort	Non-native/M
	Helminthotheca echioides	bristly ox-tongue	Non-native/L
	Lactuca serriola	prickly lettuce	Non-native
	Silybum marianum	milk thistle	Non-native/L
Brassicaceae	*Hirschfeldia incana*	short-podded mustard	Non-native/M
	Lepidium latifolium	perennial pepperweed	Non-native/H
	Raphanus sativus	cultivated radish	Non-native/L
Caryophyllaceae	*Spergularia rubra*	red sand-spurrey	Non-native
Convolvulaceae	*Convolvulus arvensis*	field bindweed	Non-native
Fagaceae	*Quercus agrifolia*	coast live oak	Native
	Quercus lobata	valley oak	Native
	Quercus suber	cork oak	Non-native
Geraniaceae	*Erodium cicutarium*	red stemmed filaree	Non-native/L
Juglandaceae	*Juglans hindsii*	Northern California black walnut	Native
Myrtaceae	*Eucalyptus sideroxylon*	red ironbark	Non-native/M
Onagraceae	*Epilobium brachycarpum*	willowherb	Native
Plantaginaceae	*Plantago lanceolatum*	narrow-leaf plantain	Non-native/L
Platanaceae	*Platanus x hispanica*	London plane tree	Non-native
Polygonaceae	*Rumex crispus*	curly dock	Non-native/L
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	Non-native/H
Monocots			
Poaceae	*Avena fatua*	wild oats	Non-native/M
	Bromus diandrus	ripgut brome	Non-native/M
	Festuca perennis	Italian rye grass	Non-native/M
	Hordeum murinum ssp. *leporinum*	foxtail barley	Non-native

[1] Cal-IPC status (Cal-IPC 2023):

L = Limited. These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score.

M = Moderate. These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure.

H = High. These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Appendix D. Representative Photographs of the Project Site

Photo 1. Grain, row-crop, hay and pasture, disked/short-term fallowed land cover that dominates the majority of the project area.

Photo 2. Rural-residential land cover is composed of abandoned farm buildings and non-native vegetation covering gravel driveways and parking lots.

Photo 3. Both mixed riparian forest and woodland on the banks of Tennant Creek and riverine vegetation on the creek bottom are dominated by non-native vegetation.

Photo 4. Unnamed ephemeral drainage in eastern portion of site to be converted to an underground storm drain.

Photo 5. Seasonal wetlands fed by urban runoff through a storm drain and dominated by non-native vegetation.

Photo 6. Culvert in Tennant Creek to be removed and the banks graded to match the adjacent slopes.

Appendix E. Special-Status Plants Considered for Potential Occurrence

Common Name	Scientific Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from Project Vicinity
Santa Clara thorn-mint	*Acanthomintha lanceolata*	x	x	x	x
Howell's onion	*Allium howellii* var. *howellii*	x			
bent-flowered fiddleneck	*Amsinckia lunaris*	x			
California androsace	*Androsace elongata* ssp. *acuta*	x		x	x
Anderson's manzanita	*Arctostaphylos andersonii*	x	x		
Carlotta Hall's lace fern	*Aspidotis carlotta-halliae*	x	x		
big-scale balsamroot	*Balsamorhiza macrolepis*	x	x	x	x
Brewer's calandrinia	*Calandrinia breweri*	x	x		x
Oakland star-tulip	*Calochortus umbellatus*	x	x	x	x
Santa Cruz Mountains pussypaws	*Calyptridium parryi* var. *hesseae*	x		x	
South Coast Range morning-glory	*Calystegia collina* ssp. *venusta*	x	x	x	x
chaparral harebell	*Campanula exigua*	x	x	x	x
Tiburon paintbrush	*Castilleja affinis* var. *neglecta*	x	x		
pink creamsacs	*Castilleja rubicundula* var. *rubicundula*	x			
Coyote ceanothus	*Ceanothus ferrisiae*	x	x	x	
dwarf soaproot	*Chlorogalum pomeridianum* var. *minus*	x			x
Douglas' spineflower	*Chorizanthe douglasii*	x			x
Mt. Hamilton thistle	*Cirsium fontinale* var. *campylon*	x	x	x	x
Brewer's clarkia	*Clarkia breweri*	x	x	x	x
Santa Clara red ribbons	*Clarkia concinna* ssp. *automixa*	x		x	x
Lewis' clarkia	*Clarkia lewisii*	x		x	
San Francisco collinsia	*Collinsia multicolor*	x			x
Rattan's cryptantha	*Cryptantha rattanii*				
clustered lady's-slipper	*Cypripedium fasciculatum*	x	x	x	x
Hospital Canyon larkspur	*Delphinium californicum* ssp. *interius*	x		x	x

Common Name	Scientific Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from Project Vicinity
Santa Clara Valley dudleya	*Dudleya abramsii* ssp. *setchellii*	x	x	x	x
Tracy's eriastrum	*Eriastrum tracyi*	x		x	x
clay buckwheat	*Eriogonum argillosum*	x	x	x	x
elegant wild buckwheat	*Eriogonum elegans*	x		x	x
bay buckwheat	*Eriogonum umbellatum* var. *bahiiforme*	x	x	x	x
slender cottongrass	*Eriophorum gracile*	x	x	x	x
Jepson's woolly sunflower	*Eriophyllum jepsonii*	x	x	x	x
Hoover's button-celery	*Eryngium aristulatum* var. *hooveri*	x			
San Francisco wallflower	*Erysimum franciscanum*	x	x		x
Palomar monkeyflower	*Erythranthe diffusa*	x		x	x
San Benito poppy	*Eschscholzia hypecoides*	x		x	x
stinkbells	*Fritillaria agrestis*	x	x		x
fragrant fritillary	*Fritillaria liliacea*	x	x		x
phlox-leaf serpentine bedstraw	*Galium andrewsii* ssp. *gatense*	x	x	x	x
serpentine sunflower	*Helianthus exilis*				
Loma Prieta hoita	*Hoita strobilina*	x	x		x
harlequin lotus	*Hosackia gracilis*	x			
coast iris	*Iris longipetala*	x			x
Satan's goldenbush	*Isocoma menziesii* var. *diabolica*	x			x
legenere	*Legenere limosa*	x	x		
bristly leptosiphon	*Leptosiphon acicularis*	x		x	x
serpentine leptosiphon	*Leptosiphon ambiguus*	x	x	x	x
large-flowered leptosiphon	*Leptosiphon grandiflorus*	x	x		x
Mt. Hamilton coreopsis	*Leptosyne hamiltonii*	x		x	
woolly-headed lessingia	*Lessingia hololeuca*	x	x		x
smooth lessingia	*Lessingia micradenia* var. *glabrata*	x	x	x	x
spring lessingia	*Lessingia tenuis*	x		x	x
Mt. Hamilton lomatium	*Lomatium observatorium*	x		x	
small-leaved lomatium	*Lomatium parvifolium*	x			
arcuate bush-mallow	*Malacothamnus arcuatus*	x			

Common Name	Scientific Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from Project Vicinity
Hall's bush-mallow	*Malacothamnus hallii*	x			x
Oregon meconella	*Meconella oregana*	x		x	
elongate copper moss	*Mielichhoferia elongata*	x			x
woodland woollythreads	*Monolopia gracilens*	x	x	x	x
Santa Cruz Mountains beardtongue	*Penstemon rattanii* var. *kleei*	x	x	x	
San Benito pentachaeta	*Pentachaeta exilis* ssp. *aeolica*	x		x	
Gairdner's yampah	*Perideridia gairdneri* ssp. *gairdneri*	x			x
Mt. Diablo phacelia	*Phacelia phacelioides*	x		x	
Hickman's popcornflower	*Plagiobothrys chorisianus* var. *hickmanii*	x			x
warty popcornflower	*Plagiobothrys verrucosus*	x		x	
Lobb's aquatic buttercup	*Ranunculus lobbii*	x			
rock sanicle	*Sanicula saxatilis*	x		x	
maple-leaved checkerbloom	*Sidalcea malachroides*	x	x		x
Metcalf Canyon jewelflower	*Streptanthus albidus* ssp. *albidus*	x	x	x	x
most beautiful jewelflower	*Streptanthus albidus* ssp. *peramoenus*	x	x	x	x
Mt. Hamilton jewelflower	*Streptanthus callistus*	x		x	
Santa Cruz clover	*Trifolium buckwestiorum*	x	x		