3.4 BIOLOGICAL RESOURCES

This section describes biological resources that may be affected by the Project. Biological resources include sensitive plant and animal species, wildlife habitats, migration corridors, and vegetation communities, as well as aquatic resources under the jurisdiction of local, state, and federal resource management and protection agencies. The biological resources described in this section are based primarily on Applicant-prepared field work and technical studies for the Project, supplemented by review of published literature, previously prepared technical studies, and peer review of the Applicant-prepared studies coupled with reconnaissance-level field observations by Wood. The extent and distribution of sensitive habitats and plant species onsite has varied over time due to drought and periods of high rainfall. Habitats onsite have been subject to several mapping efforts over a four-year period to establish an environmental baseline, as described herein. These reports are described in detail in Section 3.4.3.2, *Impact Assessment Methodology* below.

3.4.1 Environmental Setting

3.4.1.1 Regional Biological Resources Setting

The City has a Mediterranean climate with mild, wet winters and warm, dry summers. The City is surrounded by undeveloped rural land that supports an array of habitats, including grasslands, coastal scrub, chaparral, oak and bay woodlands, riparian habitat, and wetlands. Nearby Froom, Prefumo, and San Luis Obispo Creeks support freshwater marsh, seasonal wetlands, and riparian habitats within low-lying areas. Mature trees and denser vegetation are generally located along riparian corridors or on hillsides, particularly north-facing slopes.

The Project vicinity supports a diverse mix of habitats suitable to support a wide range of plant and animal species, some of which are endemic (native and restricted to a certain location or area) within the region. The Project site lies at the edge of the wildland-urban interface, with urbanized shopping centers, auto malls, and hotels along LOVR and Calle Joaquin to the north, south, and east. To the west, undeveloped land within the Irish Hills Natural Reserve owned by the City provides remarkable biodiversity and habitat conservation within and proximate to the City. In April 2019, a new botanical species known as the Irish Hills spineflower (*Chorizanthe aphanantha)* was discovered in the Irish Hills Natural Reserve less than one mile from the Project site growing on serpentinite rock outcroppings near yucca scrub habitats. The Irish Hills spineflower is currently being recommended and is under review for recognition as one of California's most rare plants (Nelson, Keil, and Hill 2018). Approximately one mile of the western boundary of the

Project site borders the Irish Hills Natural Reserve, a nearly 1,300-acre protected natural open space area, and its diverse habitats, which allows for significant ecological interaction between this important open space reserve and the Project site, including wildlife movement and rare plant propagation. The Irish Hills Natural Reserve consists of a diverse range of habitats supporting a number of sensitive plant species, including endemic species located nowhere else in the world, and providing habitat for a broad range of wildlife. The Froom Creek watershed and tributaries flow from the Irish Hills Natural Reserve down through the Project site and provide habitat connectivity and value throughout the system.

Biological resources on the Project site vary widely. Lower elevations are dominated by nonnative and native annual grasslands with substantial wetlands adjacent to LOVR and Calle Joaquin. Upper elevations are biologically rich with habitat areas that support several sensitive species, such as Chorro Creek bog thistle. The Project site abuts the Irish Hills Natural Reserve to the west, which is one of the most biologically diverse regions in the County.

3.4.1.2 Project Site Overview

The biological setting of the Project site differs greatly between the lower elevations, which constitute disturbed grasslands with wetlands along LOVR and Calle Joaquin, and the upper elevations, which are comparatively undisturbed and rich in biological value as an intact naturally-occurring ecosystem. The most sensitive habitats onsite are located within an area referred to as the Upper Terrace area of Villaggio (west of Froom Creek and adjacent to the Irish Hills Natural Reserve and Mountainbrook Church) and in the lower portions of the site containing the Calle Joaquin wetlands. East of Froom Creek in the areas adjacent to LOVR and the Irish Hills Plaza, repeated disturbance and lack of native vegetation resulting from historic grazing operations, past grading and quarry operations, and development within the historic Froom Ranch Dairy complex has diminished habitat values for native plants and wildlife, though riparian habitat and special status plant species have also been identified in this area.

Froom Creek flows from the Irish Hills through the Project site. Most of the creek is a seasonally dry channel lined with rock and cobble with earthen banks and no riparian vegetation. Downstream of the Specific Plan area, the creek transitions into a spring-fed riparian channel supporting wetland habitats.

Froom Creek traverses the Project site for approximately 3,000 feet, draining a 1,162-acre watershed, including the Irish Hills Natural Reserve (see also, Section 3.8, *Hydrology and Water Quality*). Froom Creek is a direct tributary to San Luis Obispo Creek, which flows to the Pacific Ocean approximately 5 miles southwest of the Project site. Within the Specific Plan area, Froom Creek is a seasonally dry channel lined with rock and cobble with earthen banks and no riparian vegetation. Vegetation is limited along this portion of the creek to low-lying grasses, scrub, and cactus, including an abundant proliferation of non-native invasive species such as yellow star-thistle (*Centaurea solstitialis*). Froom Creek transitions from a wide-open channel (approximately 100 feet wide) where it enters the Project site to a deeper, narrower channel (approximately 15 to 50 feet wide) that cuts through the western side of the Specific Plan area. Banks are often steep and unvegetated along this segment. A substantial unvegetated, constructed berm constrains the Froom Creek alignment on the downslope side. Seasonal pooling in the creek's incised banks create some potential for habitat; for example, field teams observed tree frogs within the creek channel in January 2018. Outside the Specific Plan area, Froom Creek transitions into a narrow riparian channel conveying flows across Mountainbrook Church property to a box culvert under Calle Joaquin and U.S. 101. Even during dry weather, this segment of Froom Creek conveys spring-fed flows

The man-made drainage ditch adjacent to LOVR conveys stormwater runoff from adjacent development to the north and east. Prolonged ponding of runoff has resulted in the establishment of high-quality wetland and riparian habitats.

from Drainages 1, 2, and 3 in the Irish Hills (see Figure 3.4-1). This water source supports a mix of native riparian vegetation and blue gum eucalyptus (*Eucalyptus globulus*) trees. Drainage 4 flows through the southernmost edge of the Project site and flows to San Luis Obispo Creek through a separate culvert; Drainage 4 does not flow to Froom Creek.

The Project site also contains man-made drainage features that support wetland or riparian habitats. Man-made drainage features on the Project site include the LOVR ditch located along the Project site boundaries bordering LOVR and the 3.2-acre Irish Hills Plaza stormwater detention basin (Figure 3.4-1).[1] The LOVR ditch supports substantial wetland and riparian habitat, sustained by surface flows from the site, Irish Hills Plaza, and LOVR. The 3.2-acre Irish Hills Plaza stormwater detention basin supports substantial areas of wetland vegetation, particularly during wetter periods, even though it was constructed above natural grade and outside of mapped wetland habitat.

Wetlands are present adjacent to Calle Joaquin on the southeastern edge of the Project site, in Drainages 1, 2, and 3 of the Upper Terrace, in the LOVR ditch, and within the Irish Hills stormwater detention basin during periods of non-disturbance between permitted maintenance events.

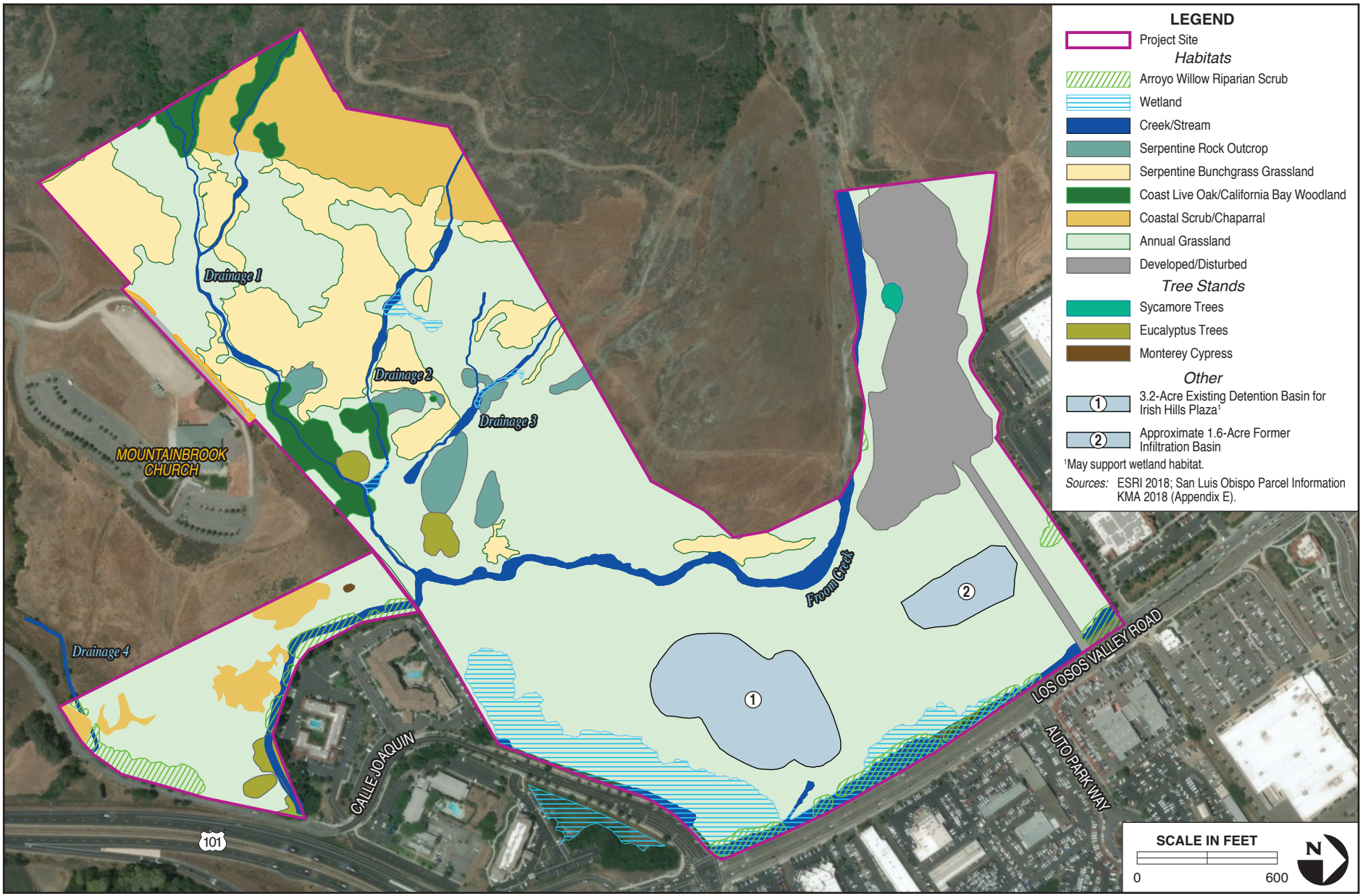
The Calle Joaquin wetlands support roughly 8.3 acres of wetland habitat located in the southeast corner of the Project site extending along more than 500 feet of Calle Joaquin west of its intersection with LOVR. This includes approximately 1-acre of wetland separated by the Calle Joaquin roadway and near the existing hotel development to the east. The 1 acre of wetlands southeast of Calle Joaquin is supported by a number of inlets passing beneath the Calle Joaquin roadway, allowing water to flow between these two areas and facilitating connectivity between these wetlands. These wetlands support emergent wetland vegetation and are fed by a complex mix of surface water flows from onsite drainage channels and generally high groundwater levels, including groundwater discharge from an artesian well. Surface water sources supporting the Calle Joaquin wetlands include runoff from the LOVR ditch and storm event flows from the Irish Hills Plaza stormwater detention basin.

[1] The 1.6-acre former stormwater retention basin was initially constructed to receive runoff only during construction of The Home Depot at the Irish Hills Plaza. Following completion of the Irish Hills Plaza, the 1.6-acre informal retention basin was graded prior to issuance of the NOP for this EIR in July 2017. However, a storm drain continues to deliver water to the former retention basin area, resulting in seasonal ponding.

Froom Creek is largely disconnected from the Calle Joaquin wetlands as a substantial constructed berm confines the creek to an upper elevation within the Project site. Based on site reconnaissance, the Calle Joaquin wetlands only interact with the Froom Creek channel intermittently at the edge of the Specific Plan area adjacent to the existing hotels.

The Upper Terrace contains a range of native habitats that support sensitive species, including native serpentine bunchgrass grassland, coast live oak/California bay woodlands, coastal scrub/chaparral, and wetlands. The terrain is highly varied where Drainages 1, 2, and 3 support wetlands. Open areas comprise annual grasslands, serpentine bunchgrass grassland, coastal scrub/chaparral, and serpentine rock outcroppings. These habitats support numerous rare native plant species and function as an important wildlife habitat and corridor due to their relatively undisturbed nature and proximity to the Irish Hills Natural Reserve.

Non-native annual grasslands dominate the lower portions of the Project site near LOVR and Irish Hills Plaza where past disturbance and grazing has occurred, as well as the proposed stormwater detention basin location on Mountainbrook Church property. Annual non-native grassland and developed/disturbed areas occupy approximately 82 acres (or roughly 64 percent) of the site, particularly in the lower portion of the Project site, east of Froom Creek near LOVR and adjacent to the Irish Hills Plaza.



wood.

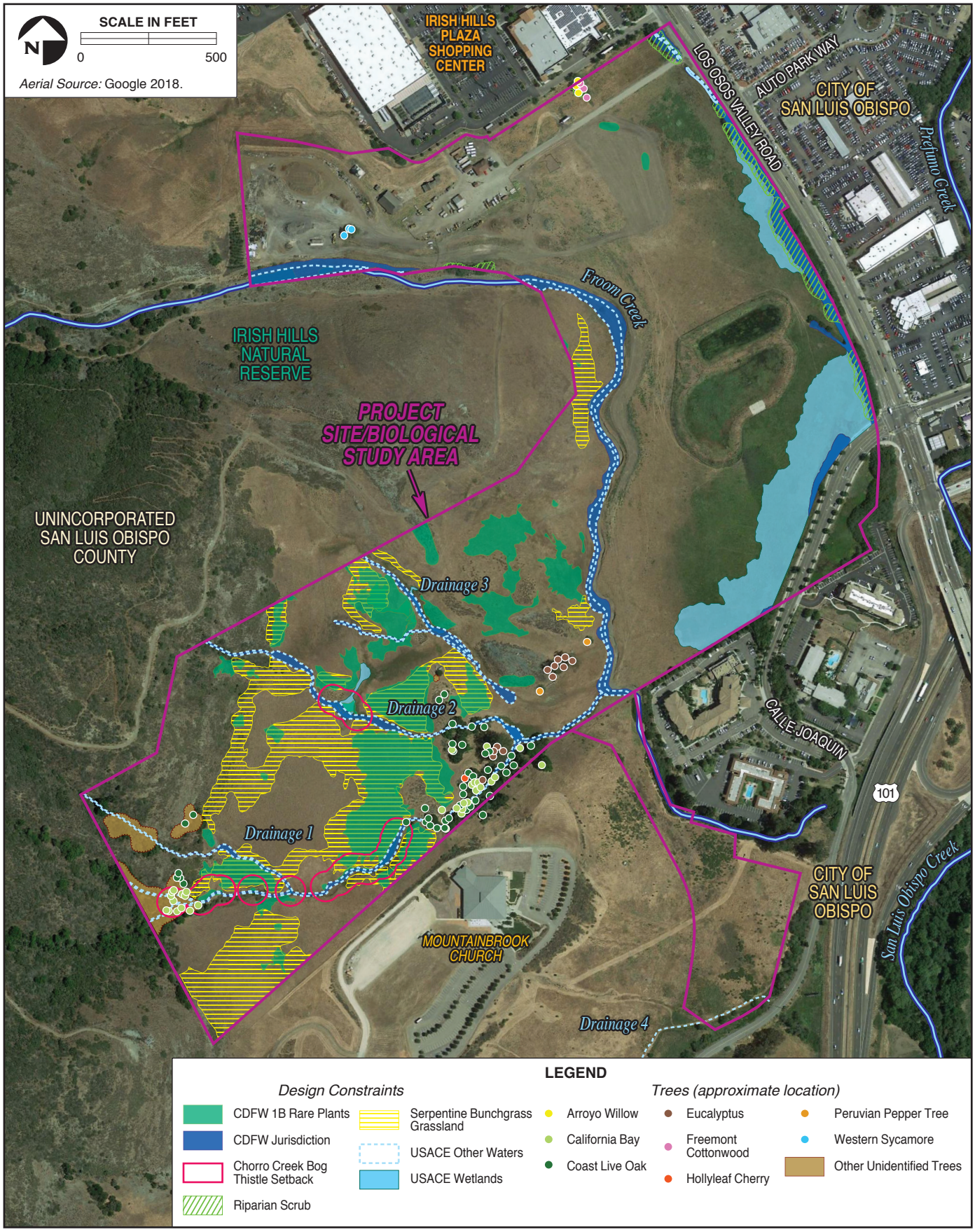
Existing Biological Setting

FIGURE 3.4-1

3.4.1.3 Vegetation and Habitat Types/Communities

The Project site includes ten general habitat types or plant communities. In the Upper Terrace, native habitats comprise roughly 50 percent of the vegetation, where serpentine bunchgrass grassland and coastal sage scrub are co-dominant with annual non-native grassland. This area also supports large stands of coast live oak/California bay woodland and sensitive spring-fed seep and drainage wetlands. Roughly 80 percent of the lower portion of the Project site (east of Froom Creek) is covered with annual non-native grassland and developed/disturbed areas. The notable exceptions are sensitive wetland and riparian habitats present in the Calle Joaquin wetlands, LOVR ditch, and existing stormwater detention basin. The developed/disturbed areas contain native and planted/ornamental vegetation, as well as native and non-native trees (see Table 3.4-1). Detailed summaries of each habitat type observed onsite are included in the Biological Resources Inventory (Appendix E).

The Project site's existing vegetation provides opportunities for nesting, perching, and roosting for birds, open areas for wildlife forage and dispersal, and edge areas for cover and escape. The wetland and riparian habitat along Froom Creek downstream of the Specific Plan area, as well as Drainages 1, 2, and 3 in the Upper Terrace, provide excellent habitat for songbirds, small mammals, amphibians, reptiles, and insects, and serve as corridors for wildlife movement, including both small and large animals (Appendix E). Drainage 4 also flows through the southernmost edge of the Project site across Mountainbrook Church property and supports an additional 400-foot-long area of Arroyo Willow Riparian Scrub habitat with similar values to small wildlife and songbirds adjacent to LOVR (Figure 3.4-1).



wood.

Project Site Biological Constraints

FIGURE 3.4-2

Table 3.4-1. Habitat Types Located within the Project Site

Habitat Type	Portion of Project Site (acres)	Percentage of Project Site
Annual Grassland	68.65	53.3
Developed/Disturbed (Ruderal)[1]	14.52	11.3
Serpentine Bunchgrass Grassland	13.46	10.5
Coastal Scrub/Chaparral	9.26	7.2
Wetland	8.27	6.4
Arroyo Willow Riparian Scrub	4.82	3.7
Coast Live Oak/California Bay Woodland	3.23	2.5
Drainage Feature	3.00	2.3
Serpentine Rock Outcrop	1.96	1.5
Eucalyptus and Sycamore Trees	1.56	1.2
Monterey Cypress Trees[2]	0.03	0.02
Total[3,4]	**128.76**	**100**

[1] Developed/disturbed (ruderal) areas include existing disturbed surfaces (e.g., within the Froom Ranch Dairy complex, graded roadways, the onsite quarry, and stormwater detention basins). Note that although the stormwater basins are periodically cleaned out, this appears to have occurred infrequently (e.g., 2-3 times over 13 years), allowing reestablishment of persistent wetland vegetation.

[2] Monterey Cypress Trees occur only within a small area of the proposed stormwater basin site.

[3] The total Project site boundary identified in the Biological Resources Inventory varies slightly from that described for the Project site in Section 2.0, *Project Description.*

[4] Initial habitat mapping was conducted by KMA in 2015 for the Biological Resources Inventory at the end of a long drought period. In subsequent field investigations by Wood's biologists in February 2018, following a relatively wet winter season, the area of some habitat types was observed as being larger than previously identified in the Biological Resources Inventory; however, acreages have not been updated.

Source: Appendix E.

Froom Creek looking north towards the Upper Terrace. The Project site provides rich natural communities and habitats, including wetlands and serpentine bunchgrass grassland, as well as California bay woodland. The Upper Terrace is particularly rich in these biological resources.

A California Natural Diversity Database (CNDDB) search identified occurrences of nine special-status natural plant communities near the Project site. Within the habitats mapped within the Project site, field surveys identified three natural communities meeting the state's definition of special-status natural communities pursuant to the California Department of Fish and Wildlife (CDFW), including Coastal and Valley Freshwater Marsh (wetland), riparian, and serpentine bunchgrass grassland. Special-status plants also occur in certain features within the Project site, including serpentine rock outcrops or in areas of annual and perennial grasslands. Where these features support

special-status plants, these features should also be considered special-status resources. Further, native habitats such as coastal sage scrub and coast live oak/California bay woodland that occur onsite may be considered sensitive under City policy if they support special status plants or wildlife, serve as wildlife corridors, or support significant trees, as determined by the City Council.

Coastal and Valley Freshwater Marsh (Wetland)

The Calle Joaquin wetlands support significant amounts of ponded water that provide high-quality habitat for several plant and animal species (Appendix E).

The Project site supports approximately 8.27 acres of jurisdictional wetland areas and/or Other Waters subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) and/or the Regional Water Quality Control Board (RWQCB). The Project site also supports approximately 5.41 acres of CDFW state jurisdictional features along Froom Creek, the LOVR ditch, Drainages 1, 2, 3, and 4, and associated riparian habitat (Appendix E).[2] These jurisdictional waters habitats are a combination of the Coastal and Valley Freshwater Marsh and Vernal Marsh vegetation communities. The Coastal and Valley Freshwater Marsh, considered by CDFW to be a sensitive natural community, occurs onsite in Drainages 2 and 3 on the Upper Terrace, the LOVR ditch, and Calle Joaquin wetlands, with a total area of approximately 8.27 acres. These onsite wetlands are important to resident and migratory wildlife. The seep- and spring-fed wetlands along Drainages 2 and 3 provide a water source for wildlife in the broad undisturbed habitats of the Upper Terrace, relatively far removed from human activity and the noise, light, and glare found in the wetlands adjacent to LOVR and Calle Joaquin. Further, these seeps and springs are proximate to generally dry coastal sage scrub, chaparral, and oak woodland habitats in the southeastern area of the Irish Hills Natural Reserve. Wildlife, including large mammals such as deer, bobcats, coyotes, and mountain lions, may rely on water from these

[2] CDFW jurisdictional areas onsite include all waters of the U.S. within the ordinary high-water mark and additional areas extending to the outer edge of associated riparian vegetation (at least to the extent they exist within the Project site), but do not include non-riparian USACE jurisdictional areas such as the Calle Joaquin wetland.

seeps and springs, particularly during dry periods. During the onsite Biological Survey conducted by KMA in 2018, invasive species, including crayfish and reed fescue were also identified in these areas, which have the potential to limit habitat suitability for some special status species. ~~Nevertheless, the potential for Coastal and Valley Freshwater Marsh to occur onsite as described above remains high due to extensive habitat suitability.~~

Calle Joaquin Wetlands

Adjacent to Calle Joaquin, perennial wetlands support occurrences of wetland plant species such as round-leaf leather root (*Hoita orbicularis*), seep spring monkey flower (*Mimulus guttatus*), silverleaf (*Potentilla ansernia*), California bulrush (*Schoenoplectus californicus*), and rough sedge (*Carex senta*). Small areas of open water within these wetlands likely provide habitat for aquatic invertebrates and amphibians such as the Pacific chorus frog (*Psuedacris regilla*). Seasonal ponded water in this area would also likely serve as a water source for wildlife, and a potential stop over for seasonal or migratory birds or a foraging site for ducks and great blue herons (*Ardea herodias*) (Appendix E). The 5.81-acre Calle Joaquin wetlands are predominantly supported by groundwater, as well as an artesian ~~spring~~well, and surface flows from the LOVR ditch and the Irish Hills Plaza stormwater detention basin (Appendix H).

Irish Hills Plaza Stormwater Detention Basin

The Project site contains a stormwater detention basin to control and treat surface runoff from Irish Hills Plaza. The 3.2-acre Irish Hills Plaza stormwater detention basin was constructed approximately 13 years ago between mid-2006 and mid-2007 and includes both a main detention basin and its forebay. The basin is fed through approximately 1,160 linear feet of pipeline that conveys surface flows from Irish Hills Plaza to this basin. During large storm events or in wet years, the basin is designed to overtop and discharge water into the Calle Joaquin wetlands via a concrete spillway. During lower rainfall years or events, stormwater in this

View of the main basin of the 3.2-acre stormwater detention basin in September 2017. Cattails and tules are present in areas of prolonged saturation, along with herbaceous wetland species (Appendix E). Wetlands have regenerated in this basin between permitted maintenance clearing, but are not jurisdictional per USACE.

basin evaporates or percolates into the ground. The basin is subject to periodic maintenance clearing to maintain capacity and function, though maintenance appears to occur infrequently based on field observations and aerial photography review by the EIR consultant team (e.g., 2-3 times over 13 years). The stormwater basin is man-made and located entirely in upland habitat; therefore, it would not support wetland vegetation if not for the Irish Hills Plaza stormwater it retains and treats. The basin is ~~ough~~ not ~~delineated as part of the Project's Wetland Delineation Report or~~ identified as a jurisdictional feature in the Preliminary Jurisdictional Determination approved by the USACE on September 24, 2015; however, standing water was present in the forebay and Wood staff observed wetland vegetation, including cattails (*Typha* spp.) and rushes (*Juncus* spp.) that were estimated to cover approximately 0.6-acre. Similarly, the main basin also had seasonally moist soils and similar wetland vegetation mixed with upland species within an estimated 1.4-acre area. Per the Applicant, the stormwater basin had not been functioning (draining) properly, which allowed water to stay in the basin for longer periods of time, thus facilitating development of the wetland habitat. Through the public review process for the Draft EIR, City staff consulted with regulatory agency staff from USACE and RWQCB, who confirmed that the onsite stormwater detention basin is not considered a jurisdictional wetland through personal communication with Jerry Hidalgo, Project Manager of the USACE North Coast Branch Regulatory Division in February 2020. In March 2020, the City consulted further with Kathleen Hicks, Environmental Scientist with the Central Coast Regional Water Quality Control Board, who was generally supportive of the approach suggested by USACE. ~~The 3.2-acre Irish Hills Plaza stormwater detention basin is therefore conservatively considered to support up to 2 acres of wetland habitat for the purposes of the EIR analysis.~~

Riparian Habitat

Riparian habitat occurs in five locations within the Project site. The largest stand of riparian scrub extends over 1,300 feet along the LOVR ditch and supports both mature and juvenile willow trees, with stands up to 90 feet in width (see Figure 3.4-1). The second-largest stand of riparian vegetation is located along the 800-foot-long segment of Froom Creek on the Mountainbrook Church portion of the site. A 1.02-acre isolated portion of the Project site east of Calle Joaquin also supports a more than 400-foot-long stretch of substantial mature Arroyo Willow Riparian Scrub. Isolated patches of Arroyo Willow Riparian Scrub also occur along a drainage on the north end of the site, adjacent to TJ Maxx and Irish Hills Plaza (see Figure 3.4-1). Finally, Drainage 4 from the Irish Hills across the southwest

portion of the Mountainbrook Church property supports an additional stand of Arroyo Willow Riparian Scrub along approximately 400 feet adjacent to Calle Joaquin.

The largest stand of riparian habitat extends over 1,300 feet along the LOVR ditch and supports both mature and juvenile willow trees, with stands up to 90 feet in width.

Arroyo Willow Riparian Scrub onsite consists of the Arroyo Willow Shrubland Alliance and forms a forested wetland that corresponds to the Central Coast Arroyo Willow Riparian Scrub community. The Central Coast Arroyo Willow Riparian Scrub is a form of forested wetland that is considered a sensitive natural community by the CDFW. This natural community and other riparian habitat occupy approximately 4.82 acres of the Project site. The habitat is mostly dominated by arroyo willow (*Salix lasiolepis*), as well as a few cottonwoods in the drainage adjacent to TJ Maxx. Riparian communities onsite consist of a mixed age class of arroyo willows and generally lack other riparian trees. The largest extents of these habitats are located along the boundary of the Project site adjacent to major roadways (see Figure 3.4-1). Limited tree diversity and underdeveloped understory may limit the foraging value for wildlife and the value of this habitat as cover or as a corridor for movement along the edges of the open area. Common species of wildlife anticipated to be found include: Pacific chorus frog, western fence lizard (*Sceloporus occidentalis*), raccoon (*Procyon lotor*), opossum (*Didephis virginianus*), and striped skunk (*Mephitis mephitis*) (Appendix E).

Aside from the downstream area of Froom Creek on the Mountainbrook Church property, the dry ephemeral nature of Froom Creek and onsite grazing activities limit the extent of riparian vegetation in the main creek channel. In one location in the northwestern part of the Project site, a small occurrence of riparian scrub was observed on the creek bank, south of existing buildings and an equipment storage yard. Common plant species observed in this habitat include Himalayan blackberry (*Rubus discolor*), poison oak, and stinging nettle (*Urtica dioica*) (Appendix E).

Serpentine Bunchgrass Grassland

The native serpentine bunchgrass grassland represents one of the most significant biological resources on the site, supporting a suite of special-status plant species, many of which are endemic to the San Luis Obispo area.

Native grassland comprised of purple needlegrass (*Stipa pulchra*) along with a mix of native and non-native species occurs within 13.46 acres of the Upper Terrace and hillsides of the Project site where serpentine soils influence plant distribution. These native grasslands exist primarily in the Upper Terrace adjacent to Drainages 1, 2, and 3 and together with several stands of coast live oak/California bay woodland and coastal sage scrub habitat form the most important native habitat complex onsite. These native grasslands correspond to the Valley Needlegrass and Serpentine Bunchgrass Grasslands and the *Nassella* (or *Stipa*) *pulchra* Herbaceous Alliance (purple needlegrass grassland) sensitive natural communities. The *Nassella pulchra* Herbaceous Alliance has a state rarity rank of S3 and is therefore designated by CDFW as a sensitive natural community. Onsite, these grasslands are dominated by purple needlegrass (*Stipa pulchra*), but also support a rich assemblage of grassland herbaceous species including yarrow (*Achillea millelodium*), Cambria morning-glory (*Calystegia subacaulis* ssp. *episcopalis*), checker bloom (*Sidalcea malviflora*), blue-eyed grass (*Sisyrinchium bellum*), and western vervain (*Verbena lasiotachys*). This grassland type provides suitable foraging, breeding habitat, and movement corridors for many wildlife species, including ground-nesting birds such as California meadowlarks and special status horned lark, various raptors, and common rodents (e.g., California vole), insects, lizards, as well as a wide range of other species (Appendix E). When combined with perennial water from springs and seeps, the proximity of this habitat to the Irish Hills Natural Reserve also increases its importance for use by large wildlife species, including deer, as well as predators such as bobcats, coyotes, foxes, and mountain lions.

3.4.1.4 Critical Habitat

Froom Creek, including the portion extending through the Project site, is designated critical habitat for the federally threatened south-central California coast steelhead distinct population segment (DPS) (steelhead; *Oncorhynchus mykiss*) by the U.S. Fish and Wildlife

Service (USFWS) (Appendix E; USFWS 2018).[3] Within the Project site, Froom Creek has the potential to provide suitable habitat for steelhead passage during years of high rainfall when flowing water is present. However, steelhead are not expected to spawn onsite given seasonally dry conditions, and it is expected that steelhead would typically only use this portion of Froom Creek as a movement corridor to areas of more suitable upstream habitat (Appendix E). Suitable habitat for steelhead also occurs upstream and offsite in the Irish Hills Natural Reserve, and resident fish in the upper watershed may move downstream through the Project site, as well. San Luis Obispo Creek downstream of Froom Creek is also designated critical habitat for steelhead.

Critical habitat for California red-legged frog is mapped approximately 2.1 miles north of the Project site. A site assessment of California red-legged frog was conducted by Kevin Merk Associates, LLC (KMA) in 2015 and 2016 to determine the presence or absence of suitable habitat and/or individuals within the Project site. Based on the results of the site assessment, suitable habitat for the California red-legged frog may be present within the Calle Joaquin wetlands; however, no California red-legged frog was observed during the protocol-level surveys (Appendix E). California red-legged frog were also documented in the Irish Hills Natural Reserve – Waddell Ranch Addition within the upper extents of Froom Creek (City of San Luis Obispo 2018).

3.4.1.5 Special Status Species

A total of 35 special-status plant species and 23 special-status animal species have some potential to occur within the region surrounding the Project site (Appendix E). The special status of these species has been designated by the USFWS, CDFW, California Native Plant Society (CNPS), and/or the City. The list of these species was generated using information available in the CNDDB (CDFW 2018), CNPS's Inventory of Rare and Endangered Plants of California (CNPS 2018b), and the City General Plan's Conservation and Open Space Element (COSE). From this list, 14 special-status plant and 18 animal species were determined to have moderate to high potential to be present in the Project site due to the presence of suitable habitat or direct observation during field surveys (Tables 3.4-2 and 3.4-3).[4]

[3] The Biological Resources Inventory prepared by KMA (2015; Appendix E) incorrectly identifies Froom Creek as critical habitat for "southern steelhead", but the federally endangered southern California steelhead DPS and its critical habitat do not occur north of the Santa Maria River in Santa Barbara County.
[4] Refer to Section 3.4.3, Special-Status Animals, and Appendix E for a complete list of species identified as part of the CNDDB search and their potential to occur on the Project site.

The Upper Terrace within the Project site supports an abundance of special-status plant species, with a total of 14 special-status plant species observed growing in this area. These species occur within native grasslands, on serpentine outcrops, in spring-fed seeps and wetlands, and coastal sage scrub habitats. Almost 23 acres of native grassland and coastal sage habitats occur within the Project site, which support species such as Brewer's spineflower and Cambria morning-glory. In addition, seven mapped serpentine rock outcroppings covering almost 2 acres of the Project site support special status species such as club hair mariposa lily and Eastwood's larkspur. The general locations of these 14 special-status plants species are depicted on Figure 3.4-2. Of these plant species, one state and federally endangered species – the Chorro Creek bog thistle – is known to occur within the Project site, proximate to the seeps on the Upper Terrace.

Table 3.4-2. Special-Status Plants with High Potential to Occur in the Project Site

Species[1]	Status[2]	Notes/Occurrence
Adobe yampah ***Perideridia pringlei***	--/--/4.3	Observed onsite. California native endemic often found on grassy slopes and serpentine soils.
Blochman's dudleya ***Dudleya blochmaniae***	--/--/1B.1	Observed onsite. Often found on rocky, often clay or serpentine soils in coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grasslands.
Brewer's spineflower ***Chorizanthe* ssp. *breweri***	--/--/1B.3	Observed onsite. Occurs in closed-cone coniferous forests, chaparral, cismontane woodland, and coastal scrub habitats on serpentine derived soils and rock outcrops.
Cambria morning-glory ***Calystegia subacaulis* ssp. *episcopalis***	--/--/4.2	Observed onsite. Occurs in chaparral, cismontane woodland, and sparse to dense grassland covering sloped or flat areas in clay-rich soils.
Chaparral (rayless) ragwort ***Senecio aphanactis***	--/--/2B.2	Observed onsite. Typically found in drying alkaline flats, serpentine soils and barren gravelly or sandy slopes in chaparral, cismontane woodland, and coastal scrub habitats.
Chorro Creek bog thistle ***Cirsium fontinale* var. *obispoense***	E/E/1B.2	Observed onsite. Occurs in chaparral and cismontane woodland habitats, often in serpentine seeps.
Club hair mariposa lily ***Calochortus clavatus* ssp. *clavatus***	--/--/4.3	Observed onsite. Species is known to occur on serpentine rock outcrops, valley grassland (i.e., perennial bunchgrass), chaparral, and foothill woodland.

Table 3.4-2. Special-Status Plants with High Potential to Occur in the Project Site (Continued)

Species[1]	Status[2]	Notes/Occurrence
Congdon's tarplant ***Centromadia parryi* ssp. *congdonii***	--/--/1B.1	Observed onsite. Occurs in moist alkaline conditions in marshes, swamps, vernal pools, and valley and foothill grassland habitats.
Eastwood's larkspur ***Delphinium parryi* ssp. *eastwoodiae***	--/--/1B.2	Observed onsite. Known to occur on serpentine based soils (clays) and outcrops in the general San Luis Obispo area with collection made on Camp San Luis Obispo.
Jones' layia ***~~Layia~~ jonesii***	--/--/1B.2	Observed onsite. Occurs on clay soils and serpentine outcrops in chaparral and valley and foothill grassland.
Most Beautiful Jewel-flower ***Streptanthus albidus* ssp. *Peramoenus***	--/--/1B.2	Observed onsite. A rare California native annual herb found in chaparral, valley grassland, and foothill woodlands on serpentine soils in arid climates.
Mouse-gray dudleya ***Dudleya abramsii* ssp. *murina***	--/--/1B.3	~~High potential to occur~~Observed onsite. Occurs in chaparral and cismontane woodland, usually on serpentine outcrops.
Palmer's spineflower ***Chorizanthe palmeri***	--/--/4.2	Observed onsite. Occurs on serpentine-based soils in grassland and coastal scrub habitat in the outer coast ranges of Monterey, San Luis Obispo, and Santa Barbara Counties.
San Luis mariposa lily ***Calochortus obispoensis***	--/--/1B.2	Observed onsite. Occurs on sandstone, serpentine and/or sandy soils in chaparral, coastal scrub and valley and foothill grassland. Species is endemic to San Luis Obispo County and is known from localized occurrences in the San Luis Obispo and Arroyo Grande region.
San Luis Obispo owl's-clover ***Castilleja densiflora* ssp. *obispoensis***	--/--/1B.2	Observed onsite. Occurs in meadows, seeps, and valley and foothill grassland. This species was observed onsite.

Bold text denotes species observed onsite during biological surveys.
[1] Source: Appendix E.
[2] Federal Status/State Status/ California Rare Plant Rank
E = Endangered
CRPR 1B = "Plants Rare, Threatened, or Endangered in California and Elsewhere" by the CNPS
CRPR 2 = "Plants Rare, Threatened, or Endangered in California but more common elsewhere"
CRPR 2B = "Plants rare, threatened, or endangered in California but more common elsewhere"
CRPR 3 ="Review List: Plants about which more information is needed"
CRPR 4 = "Plants of Limited Distribution – A Watch List"
0.1 = "Seriously threated in California" (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = "Moderately threatened in California" (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 = "Not very threatened in California" (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Table 3.4-3. Sensitive Wildlife Species with Potential to Occur in the Project Site

Species[1]	Status[2]	Notes/ Occurrence
American badger *Taxidea taxus*	--/SSC/--	Moderate potential to occur. Suitable habitat is present in grassland onsite, but heavy clay soils likely preclude badgers from being regular residents. Could potentially occur as a transient across the site.
California horned lark *Eremophila alpestris actia*	--/WL/--	Moderate potential to occur. Grasslands provide suitable foraging and nesting habitat onsite.
California red-legged frog *Rana draytonii*	T/SSC/--	Moderate potential to occur. Limited suitable habitat exists; however, potential for suitable movement, dispersal, and foraging habitat in onsite wetlands increases outside of drought conditions.
Cooper's hawk *Accipiter cooperii*	--/WL/--	High potential to occur. Potentially suitable nesting habitat is present in oak/bay woodlands and eucalyptus/ sycamore trees onsite. Could also forage across the site.
Hoary bat *Lasiurus cinereus*	--/SA/--	Moderate potential to occur. Suitable foraging habitat onsite. Potentially suitable roosting habitat present in oak woodland especially in close proximity to confluence of tributary drainages of Froom Creek.
Loggerhead shrike *Lanius ludovicianus*	--/SSC/--	Moderate potential to occur. Suitable woodland, grassland, and scrub habitat present for foraging and nesting exists onsite.
Pallid bat *Antrozous pallidus*	--/SSC/--	Moderate potential to occur. Potentially suitable roosting habitat present in oak/bay woodland. Suitable foraging habitat in grasslands and coastal scrub onsite.
San Diego woodrat *Neotoma lepida intermedia*	--/SSC/--	High potential to occur. Suitable habitat present in oak woodlands and coastal scrub through the southwestern portion of the site within the Upper Terrace, adjacent to the Irish Hills Natural Reserve. Woodrat nests observed in upper reaches of the property in coastal scrub habitat. Could potentially occur in woodlands.
South-central California coast steelhead DPS *Oncorhynchus mykiss*	T/SSC/--	High potential to occur. Suitable habitat present upstream in Froom Creek. Potential to occur during heavy rainfall years when flowing water is present. Not expected to spawn onsite but would use Froom Creek onsite as corridor for movement upstream.

Table 3.4-3. Sensitive Wildlife Species with Potential to Occur in the Project Site (Continued)

Species[1]	Status[2]	Notes/ Occurrence
Townsend's western big-eared bat *Corynorhinus townsendii*	--/SSC/--	Moderate potential to occur. Suitable foraging habitat present throughout the site. Potential roosting habitat located at existing buildings.
Tri-colored blackbird *Agelaius tricolor*	T/SSC/-- (Nesting)	Moderate potential to occur. Could occur as an uncommon transient. Suitable nesting habitat in a tule patch was noted as being not large enough to support nesting. However, the species could potentially nest onsite should the tule patch expand/enlarge.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/SA/--	Low potential to occur. The Project site does not support suitable habitat and is not hydrologically connected to known vernal pool fairy shrimp habitat.
Western mastiff bat *Eumops perotis californicus*	--/SSC/--	Moderate potential to occur. Suitable foraging habitat in grasslands onsite. Potentially suitable roosting habitat present in oak woodland and large eucalyptus and sycamore trees.
Western red bat *Lasiurus blossevilli*	--/SSC/--	Moderate potential to occur. Potentially suitable roosting habitat present in oak/bay woodlands and foraging habitat consists of onsite grasslands.
White-tailed kite *Elanus leucurus*	--/FP/-- (Nesting)	Moderate potential to occur. Suitable nesting habitat in oak, bay, eucalyptus and sycamore trees on-site, with good quality foraging habitat in grasslands throughout the site.
Yuma myotis *Myotis yumanensis*	--/SA/--	Moderate potential to occur. Potentially suitable roosting and foraging habitat onsite. Could roost in larger trees along riparian corridors, in oak woodlands, and in eucalyptus trees. Could also potentially roost in rock crevices on steep serpentine slopes.

[1] Source: Appendix E.
[2] Federal Status/State Status/Other Status
SSC = California Species of Special Concern
E = Endangered
T = Threatened
C = Candidate for Listing
FP = Federally Protected
SA = Special Animal
WL = CDFW Watch List

In addition to those designated special-status species identified above, Table 3.4-4 provides a list of species of local concern identified in the City's General Plan COSE that are known to occur within the Project site.[5]

Table 3.4-4. Species of Local Concern Within Vicinity of the Project

Species ID[1]	Common Name	Species Name	Status[1]
Plants			
4	**Blochman's dudleya**	***Dudleya blochmaniae* ssp. *blochmaniae***	**--/--/1B.1**
5	**Brewer's spineflower**	***Chorizanthe breweri***	**--/--/1B.3**
7	**Chorro Creek bog thistle**	***Cirisium fontinale* var. *obispoense***	**E/E/1B.2**
8	**Congdon's tarplant**	***Centromadia parryi* ssp. *congdonii***	**--/--/1B.2**
14	**Jones' layia**	***Layia jonesii***	**--/--/1B.2**
17	**Most Beautiful Jewel-flower**	***Streptanthus albidus* ssp. *Peramoenus***	**--/--/1B.2**
25	**San Luis mariposa lily**	***Calochortus obispoensis***	**--/--/1B.2**
Invertebrates			
40	Monarch butterfly	*Danaus plexippus*	--/SA/--

Bold text denotes species observed onsite during biological surveys.
[1] Refer to City General Plan COSE Figure 2 for corresponding species identification
[2] Federal Status/State Status/California Rare Plant Rank
CRPR 1B = "Plants Rare, Threatened, or Endangered in California and Elsewhere" by the CNPS
0.1 = "Seriously threatened in California" (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = "Moderately threatened in California" (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 = "Not very threated in California" (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
E = Endangered
SA = Special Animal
Source: City of San Luis Obispo 2006.

Provided below is a description of special-status plant and animal species of the most concern at the Project site, either due to limited availability of habitat, sensitivity to disturbance, moderate to high potential to occur onsite, and/or their observed presence on the site.

[5] The COSE identifies species of local concern in Figure 2: Species of Local Concern.

Special-Status Plant Species

Blochman's Dudleya. This species is an endemic coastal sage scrub perennial herb native to Southern California and northwestern Baja California that flowers from mid to late spring. While Blochman's dudleya has not been assigned federal or state status, it is considered by the CNPS to be seriously endangered within its distribution across the state. The species typically occurs on rocky, often clay or serpentine soils, in coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grasslands at an elevation ranging from approximately 15 to 1,350 feet. This species was observed growing on rock outcrops near Drainage 3 in the Upper Terrace of the Project site (Appendix E).

Blochman's dudleya, a perennial herb that is considered seriously endangered by CNPS, was observed in small patches distributed in rocky outcrop areas of the Upper Terrace area of the Project site. (Photo: CalPhotos; photograph by Keir Morse 2016)

Chorro Creek Bog Thistle (San Luis Obispo fountain thistle). This species is an endemic California perennial herb that flowers from February to July and occurs only in San Luis Obispo County. Chorro Creek bog thistle is designated as both a state and federal endangered species and designated as an imperiled species by CNDDB at the state and global level. The species typically occurs in chaparral and cismontane woodland habitats, often in serpentine seeps ranging from approximately 105 to 1,100 feet. This species was observed growing in wetland habitat along the seep-/spring-fed Drainages 1 and 2 in the Upper Terrace of the Project site (Appendix E).

Chorro Creek bog thistle, a perennial herb that is federally endangered, was observed in wetland habitat along the seep-/spring-fed Drainages 1 and 2 in the Upper Terrace. (Photo: CDFW, Jeb Bjerke)

Congdon's Tarplant. This species is an endemic Californian annual herb that flowers in late spring through fall. While Congdon's tarplant does not have federal or state status, it is considered by the CNPS to be rare or endangered within its distribution across the state. The species typically occurs in moist alkaline conditions in marshes, swamps, vernal pools, and valley and foothill grassland habitats at an elevation ranging from approximately 1 to 700 feet. A population of Congdon's tarplant was observed growing in the northeast portion of the Specific Plan area, adjacent to the Irish Hills Plaza (Appendix E).

Congdon's tarplant, an annual herb that is endemic to California and rare, was observed in the constructed Home Depot detention basin in the northeastern part of the site.

Special-Status Animals

Special-Status Bird Species

Loggerhead Shrike. The loggerhead shrike is a CDFW Species of Special Concern (SSC) and resident of arid regions of the County as well as elsewhere in California. Although historically considered a common resident of most of the County, recent studies indicate populations have declined by as much as 76 percent during the non-breeding season within the County. Preferred habitats for loggerhead shrike include woodland, chaparral, coastal scrub, and grassland, with perches such as fences, posts and scattered trees. Suitable habitat for foraging and nesting is present within the Project site (Appendix E).

California Horned Lark. California horned lark is a CDFW Watch List species known to occur from Sonoma County to San Diego County, as well as east to the foothills of the Sierra Nevada Mountains. It breeds in open, flat habitats with short vegetation, including grasslands, alkali flats, fallow grain fields, and meadows. They are known to make local movements through the seasons, and may not breed in all areas they are observed. Suitable habitat for foraging and nesting is present within the Project site, though no nests were observed (Appendix E).

White-tailed Kite. The White-tailed kite is a California Fully Protected species known to occur in riparian woodlands and near agricultural fields, and forages over grasslands and

scrub habitat. At the Project site, suitable nesting habitat for the White-tailed kite is present in oak, bay, eucalyptus, and sycamore trees dispersed throughout the site, along with good quality foraging habitat in grasslands throughout the site. Though the species was not observed onsite during surveys and no stick nests were identified, White-tailed kite are known to occur north of the site in Los Osos Valley, and could nest onsite or occur during foraging activities (Appendix E).

Special-Status Fish Species

South-central California coast Steelhead. South-central California coast steelhead is listed as threatened under the Federal Endangered Species Act (ESA) and is also listed by CDFW as an SSC. Steelhead depend on quality riparian areas with overhanging vegetation to provide shade to maintain suitable water temperature, filter pollutants (including fine sediments), and to provide habitat for their preferred prey (National Marine Fisheries Service 2007). San Luis Obispo Creek is within the South-central California coast steelhead's range and is a known migration corridor and spawning area. As further discussed above, Froom Creek, including that portion through the Project site, and San Luis Obispo Creek are mapped as critical habitat for steelhead, and the upper reach of Froom Creek has a known population of steelhead (potentially land-locked). It is unknown if steelhead in the upper reaches of Froom Creek make their way through the Project site and into San Luis Obispo Creek. It is highly likely that during the winter storm season when high flows are present in the onsite portion of the creek, that steelhead could move through the site to areas up or downstream with suitable habitat. The onsite reach of Froom Creek is a dry channel for most of the year with flowing water present only following large storm events. Water flows recede quickly, and prolonged pools are poorly represented in the onsite portion of creek. Therefore, no perennial aquatic habitat is present that could support steelhead within the Project boundaries (Appendix E).

Special-Status Reptile and Amphibian Species

California Red-Legged Frog. The California red-legged frog is listed as threatened under the ESA and as an SSC by CDFW. The species inhabits creeks and ponds with open water often overhung with dense growths of woody riparian vegetation, especially willows. Suitable environments for California red-legged frog may also include areas with seasonal waters canopied by willows, which is present at the Project site along Calle Joaquin. This species is known to occur within San Luis Obispo Creek and some of its tributary channels. It generally requires seasonal pools or streams that hold water until late summer for successful breeding. Bullfrogs and introduced fish are detrimental to this species and have

severely reduced populations in many areas. As further discussed in Section 3.4.1.4, *Critical Habitat*, much of Froom Creek is mapped critical habitat for California red-legged frog (mapped approximately 2.1 miles north of the Project site), though the portion of Froom Creek in the Project site does not provide adequate pool habitat for breeding. However, during the rainy season, transient individuals could move through Froom Creek intermittently. Froom Creek connects to San Luis Obispo Creek, immediately downstream across U.S. 101 from the Project site. One adult and one juvenile California red-legged frog were found in San Luis Obispo Creek 0.1-mile upstream from this confluence. This occurrence is located about 0.5-mile straight-line distance northwest of the Project site. As noted above, this species was also documented in the Irish Hills Natural Reserve – Waddell Ranch Addition within the upper extents of Froom Creek (City of San Luis Obispo 2018). Flowing water was present within Froom Creek in the winter and spring of 2017, and other areas of ponded water in onsite features were identified; however, no California red-legged frog was observed (Appendix E). The Biological Resources Inventory prepared for the project (KMA 2018; Appendix E) subsequently identified potential for occurrence of this species at the Project site as low due to regionally low population levels and marginal suitable habitat onsite.

However, marginal habitat suitability identified by KMA during extensive site surveys between 2015 and 2016 may be due to the prolonged drought-period in prior years in the area (KMA 2017; Appendix E). Despite the long culverts and other potential barriers that may deter movement from documented occurrences in the vicinity, it is feasible for California red-legged frog to disperse onto the site under favorable conditions (i.e., during warm rains) given their ability to travel extensively over land as well as through marginal/seasonally dry riparian corridors. Recent upstream observations of adult and juvenile frogs along Froom Creek on the City-owned Waddell Property indicate that a breeding population is present in the vicinity and could expand if conditions are suitable. Onsite wetlands (Calle Joaquin wetlands, LOVR ditch, 3.2-acre stormwater detention basin) within or near the Project site have the potential to support California red-legged frog in dry years (e.g., Drainages 1, 2, and 3) and other aquatic and wetland features onsite are more suitable in wet years such as 2017. Photos from the Site Assessment for the California Red-Legged Frog (KMA 2017) indicate that drainages and adjacent vegetation onsite may provide potential aquatic dispersal and upland refugia habitat, both important components of California red-legged frog life history. If California red-legged frog are present within the wetlands offsite, drainage features onsite (e.g., Drainage 1) would likely be considered potential dispersal habitat by the USFWS. Given these conditions and

considerations, potential for California red-legged frog to occur onsite during non-drought periods is conservatively considered to be moderate.

Southern Pacific (Western) Pond Turtle. The western pond turtle is a Species of Special Concern in California; however, no suitable habitat was determined present onsite by the 2018 site-specific Biological Resources Inventory by JM Development Group, Inc., nor through peer review of the study conducted by Wood, which included a supplemental survey of the Project site on January 18, 2018. Western pond turtle occurs in both permanent and intermittent waters, including marshes, streams, rivers, ponds, and lakes. It favors habitats with large numbers of emergent logs or boulders, where individuals aggregate to bask. They also bask on top of aquatic vegetation. Only marginal species habitat is present seasonally in the Calle Joaquin wetland. The species is known to occur in San Luis Obispo Creek; however, U.S. 101 and LOVR barriers make the occurrence of the species on site unlikely.

Special-Status Mammal Species

Pallid Bat. The pallid bat is a large, long-eared bat that occurs throughout the state from deserts to moist forests, and is considered an SSC. Pallid bats are primarily a crevice roosting species that frequently occur in oak woodlands where they roost in tree cavities. These roosts are generally day or night roosts for one or a few bats. Attics may be used as roosts and during hot days individuals may emerge from crevices and roost on open rafters. Communal wintering or maternity colonies are more common in rock crevices and caves. Suitable roosting habitat is present at the Project site in oak/bay woodlands, and suitable foraging habitat exists in on-site grasslands and coastal scrub (Appendix E).

Townsend's Western Big-eared Bat. Townsend's western big-eared bat is a medium-sized bat with large rabbit-like ears that is an SSC. The Townsend's western big-eared bat has been recorded in a variety of habitats in California, and in the County and is found consistently in the vicinity of creek beds where they use the riparian corridor for foraging. Typical roost sites are found in caves or buildings with cave-like features. Townsend's big-eared bat is a sedentary species and is presumed to spend the winter within 25 miles of its summer roosts. Suitable foraging habitat for the Townsend's western big-eared bat is present throughout the site, and potential roosting habitat occurs at existing ranch buildings onsite (Appendix E).

Burrowing Owl. Burrowing owl is a Species of Special Concern in California; however, no suitable habitat was determined present onsite by the 2018 site-specific Biological

Resources Inventory provided by JM Development Group, Inc., nor through peer review of the study conducted by Wood, which included a supplemental survey of the Project site on January 18, 2018. Burrowing owl habitat includes grasslands. Burrowing mammal activity was not observed during field visits conducted by both KMA and Wood, and the Biological Resources Inventory, as well as Wood's peer review, concluded burrowing owl are not anticipated to breed or occur onsite due to lack of suitable habitat.

A female mountain lion and her three cubs (two pictured above) were caught on trail cameras approximately 1 mile from the Project site within the Irish Hills Natural Reserve.

3.4.1.6 Additional Common Wildlife Species

Although much of the northern and eastern half of the Project site supports disturbed areas and non-native grassland, areas in the Upper Terrace proximate to the Irish Hills Natural Reserve provide important wildlife foraging value. Upland grasslands, Froom Creek, and four tributary drainages provide foraging habitat and movement corridors for wildlife, including birds of prey and large mammals, such as mountain lion (*Felix concolor*), coyote (*Canis latrans*), and bobcat (*Lynx rufus*). The dense vegetation and perennial water within the Calle Joaquin wetlands also provide substantial wildlife habitat value. For example, in January 2018, CDFW staff captured footage of a mountain lion and its three cubs approximately 1 mile from the Project site, and Wood staff observed coyotes at the Project site during field observations. A juvenile mountain lion was also observed on the adjacent Mountainbrook property by City staff and the Project Applicant during a pre-project site visit.

The City General Plan COSE identifies the Project site as being within a Wildlife Zone and Wildlife Corridor due to the undeveloped nature of the site, adjacency to the Irish Hills Natural Reserve, the Froom Creek channel, and quality of upland and lowland habitat. Wildlife zones and corridors are areas that provide the conditions necessary to allow wildlife to move safety through urban areas, or across barriers to wildlife movement (City

of San Luis Obispo 2006).[6] As noted above, due to their distance from urban disturbance and proximity to the Irish Hills Natural Reserve, the springs and seeps within Upper Terrace likely provide an important water source for wildlife.

3.4.1.7 Tree Inventory

KMA conducted an inventory of trees within the Project site on February 10 and March 3, 2015. All trees within the site with a diameter at breast height (about 4.5 feet above ground) of approximately 4 inches or greater were identified, measured, tagged and evaluated. Willow shrubs, Monterey cypress, blue gum eucalyptus, and coast live oak that were less than 4 inches in diameter were not tagged, but their general location and canopy were delineated and are included in the total area of habitat in Table 3.4-1 (see also Figure 3.4-2). Based on these surveys, a total of 96 mature trees exist at the Project site, with most being native species such as sycamores, oak, and bay, with the oak and bay trees constituting more than 75 percent of mature trees onsite (see Table 3.4-5). Non-native trees identified within the Project site include blue gum eucalyptus and Peruvian pepper (*Schinus molle*) trees. None of these trees are considered a Heritage Tree under the City's Heritage Tree Program.

Table 3.4-5. Inventory of Mature Trees within the Project Site

Common Name	Scientific Name	Number of Specimens
Native Species		
Coast live oak	*Quercus agrifolia*	41
California bay	*Umbellularia californica*	31
Western sycamore	*Platanus racemosa*	3
Fremont cottonwood	*Populus fremontii*	3
Arroyo willow	*Salix lasiolepis*	3
Hollyleaf cherry	*Prunus ilicifolia*	1
Non-native Species		
Blue gum eucalyptus	*Eucalyptus globulus*	12
Peruvian pepper	*Schinus molle*	2
Total		**96**

Note: The KMA Biological Resources Inventory also included delineated canopy area for blue gum eucalyptus, Monterey cypress, arroyo willow, and coast live oak trees. The approximate area or canopy of these trees is included in Table 3.4-1.
Source: Appendix E.

[6] The City General Plan COSE identifies wildlife corridors and wildlife zones in Figure 3: Wildlife Corridors.

3.4.2 Regulatory Setting

Biological resources are governed primarily by federal, state, and local laws that would apply to the Project. Various development activities proposed under the Project would require coordination and permits from federal and state agencies.

3.4.2.1 Federal

Endangered Species Act

The ESA of 1973, as amended, establishes measures intended to ensure the protection and conservation of threatened and endangered species and the ecosystems on which they depend. Under the federal ESA, it is unlawful to "take" any species listed as threatened or endangered. Take is defined as actions intended to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." An activity is defined as a take even if it is unintentional or accidental. Take provisions under the federal ESA apply only to listed fish and wildlife species under the jurisdiction of USFWS and/or the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS). Consultation with USFWS or NMFS is required if a project "may affect" or result in take of a listed species.

When a species is listed, USFWS and/or NMFS, in most cases, must officially designate specific areas as critical habitat for the species. Consultation with USFWS and/or NMFS is required for projects that include a federal action or federal funding if the project would modify designated critical habitat.

Migratory Bird Treaty Act and Executive Order 13186

The Migratory Bird Treaty Act (MBTA) governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nest, and requires harvests to be limited to levels that prevent overuse. Further, the MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase, or barter, of any migratory bird, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11).

Clean Water Act (CWA) Section 404 and Section 401

Under Section 404 of the CWA, USACE regulates the discharge of dredged or fill material into waters of the U.S. Waters of the U.S. are those waters that have a connection to interstate commerce, either directly via a tributary system or indirectly through a nexus

identified in USACE regulations. In nontidal waters, the lateral limit of jurisdiction under Section 404 extends to the ordinary high-water mark (OHWM) of a water body or, where adjacent wetlands are present, beyond the OHWM to the limit of the wetlands. The OHWM is defined as "that 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, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR 328.3). In tidal waters, the lateral limit of jurisdiction extends to the high tidal line (HTL) or, where adjacent wetlands are present, beyond the HTL to the limit of the wetlands.

Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for a life in saturated soil conditions." "Other waters" essentially include any body of water not otherwise exempted that displays an OHWM and lacking one or more of the three wetland parameters (i.e., dominance of hydrophytic vegetation, hydric soils, and wetland hydrology).

Under Section 401 of the CWA, the State Water Resources Control Board (SWRCB) must certify all activities requiring a 404 permit. The RWQCB regulates these activities and issues Section 401 water quality certifications for those activities requiring a 404 permit.

3.4.2.2 State

California Endangered Species Act

The California Endangered Species Act (CESA) parallels the main provisions of the Federal ESA and is administered by the CDFW. CESA prohibits the take of state-listed threatened and endangered species. California Fish and Game Code Section 86 defines "take" to include catch, pursue, or capture, or attempt to catch, pursue, or capture. Under the CESA, the CDFW is responsible for maintaining a list of rare, threatened, and endangered species designated under state law (California Fish and Game Code 2070-2079). The CDFW also maintains lists of candidate species, Species of Special Concern, and Fully Protected species. Pursuant to the requirements of the CESA, agencies reviewing proposed projects within their jurisdictions must determine whether any state-listed species have the potential to occur within a proposed project site and if the proposed project would

have any significant impacts upon such species. Project-related impacts to species on the CESA's rare, threatened, and endangered list would be considered significant.

Native Plant Protection Act

The Native Plant Protection Act (NPPA; California Fish and Game Code 1900) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites; and changes in land use. Impacts to state designated rare plant species require a permit from CDFW.

3.4.2.3 Local

City of San Luis Obispo General Plan

The City of San Luis Obispo General Plan contains policies requiring protection of special-status plant and animal species. While a comprehensive presentation of these local policy requirements would be prohibitively long, key policies pertaining to biological resources associated with the Project site are summarized below.

Land Use Element

Policy LUE 6.6.3: Amenities and Access. New public or private developments adjacent to the lake, creeks, and wetlands must respect the natural environment and incorporate the natural features as project amenities, provided doing so does not diminish natural values.

Conservation and Open Space Element

Policy COSE 7.3.1 Protect Listed Species (A-D).

A. The City will identify the location, habitat and buffer needs of species listed for protection. This information will be developed by qualified people early in the planning and development review process.
B. The City will establish and maintain records on the location of listed species. The City will maintain, for public use, generalized maps showing known locations of listed species. Specific site information may be kept confidential to protect the resources.
C. The City will comply with State and Federal requirements for listed species.

D. The City will protect listed species through its actions on: land-use designations; development standards; development applications; location, design, construction and maintenance of creeks, City roads and facilities; and on land that the City owns or manages.

Policy COSE 7.3.2 Species of Local Concern. The City will:

A. Maintain healthy populations of native species in the long term, even though they are not listed for protection under State or Federal laws. These "species of local concern" are at the limit of their range in San Luis Obispo, or threats to their habitat are increasing.
B. Identify the location, habitat and buffer needs of species of local concern. This information will be developed by qualified people early in the planning and development review process.
C. Protect species of local concern through: its actions on land use designations, development standards, development applications; the location, design, construction, and maintenance of City facilities; land that the City owns or manages.
D. Encourage individuals, organizations, and other agencies to protect species of local concern within their areas of responsibility and jurisdiction.
E. Protect sensitive habitat, including creeks, from encroachment by livestock and human activities.

Policy COSE 7.3.3 Wildlife Habitat and Corridors. Continuous wildlife habitat, including corridors free of human disruption, shall be preserved and where necessary, created by interconnecting open spaces, wildlife habitat, and corridors. To accomplish this, the City will:

A. Require public and private developments, including public works projects, to evaluate animal species and their movements within and through development sites and create habitats and corridors appropriate for wildlife.
B. Plan for connectivity of open spaces and wildlife habitat and corridors using specific area plans, neighborhood plans, subdivision maps, or other applicable planning processes, consistent with Open Space Guidelines.
C. Coordinate with San Luis Obispo County and adjoining jurisdictions, federal and state agencies such as Caltrans to assure regional connectivity of open space and wildlife corridors.
D. Preserve and expand links between open spaces and creek corridors.

Policy COSE 7.5.1 Protection of Significant Trees. Significant trees, as determined by the City Council upon the recommendation of the Tree Committee, Planning or Architectural Review Committee, are those making substantial contributions to natural habitat or to the urban landscape due to their species, size, or rarity. Significant trees, particularly native species, shall be protected. Removal of significant trees shall be subject to the criteria and

mitigation requirements in Chapter 8.6.3. Oak Woodland communities in the Greenbelt and in open space areas shall be protected.

Policy COSE 7.5.2 Use of Native California Plants in Urban Landscaping. Landscaping should incorporate native plant species, with selection appropriate for location.

Policy COSE 7.5.4 Preservation of grassland communities and other habitat types. Grassland communities and other habitat types in the Greenbelt and in designated open space areas shall be preserved.

Policy COSE 7.5.5 Soil Conservation and Landform modification. Public and private development projects shall be designed to prevent soil erosion, minimize landform modifications to avoid habitat disturbance, and conserve and reuse onsite soils.

Policy COSE 7.5.6 Minimize synthetic or organic environmental toxins.

Policy COSE 7.7.7 Preserve Ecotones. Condition or modify development approvals to ensure that "ecotones," or natural transitions along the edges of different habitat types, are preserved and enhanced because of their importance to wildlife. Natural ecotones of particular concern include those along the margins of riparian corridors, marshlands, vernal pools, and oak woodlands, where they transition to grasslands and other habitat types.

Policy COSE 7.7.8 Protect Wildlife Corridors. Condition development permits in accordance with applicable mitigation measures to ensure that important corridors for wildlife movement and dispersal are protected. Features of particular importance to wildlife include riparian corridors, wetlands, lake shorelines, and protected natural areas with cover and water. Linkages and corridors shall be provided to maintain connections between habitat areas.

Policy COSE 7.7.9 Creek Setbacks. As further described in the Zoning Regulations [Section 17.70.030], the City will maintain creek setbacks to include: an appropriate separation from the physical top of bank, the appropriate floodway as identified in the Flood Management Policy, native riparian plants or wildlife habitat, and space for paths called for by any city-adopted plan. In addition, creek setbacks should be consistent with the following:

A. The following items should be no closer to the wetland or creek than the setback line: buildings, streets, driveways, parking lots, aboveground utilities, and outdoor commercial storage or work areas.

B. Development approvals should respect the separation from creek banks and protection of floodways and natural features identified in Part A above, whether or not the setback line has been established.
C. Features which normally would be outside the creek setback may be permitted to encroach where there is no practical alternative, to allow reasonable development of a parcel, consistent with the Conservation and Open Space Element.
D. Existing bridges may be replaced or widened, consistent with policies in this Element. Removal of any existing bridge or restoration of a channel to more natural conditions will provide for wildlife corridors, traffic circulation, access, utilities, and reasonable use of adjacent properties.

Policy COSE 8.3.1: Open Space within an Urban Area. The City will preserve the areas listed in Goal 8.2.2 (creek corridors, including open channel with natural banks and vegetation, wetlands and vernal pools, grassland communities and woodlands, wildlife habitat corridors, habitat of listed species, and unique plant and animal communities including "species of local concern") and will encourage individuals, organizations, and other agencies to do likewise. The City will designate these areas as Open Space or Agriculture in the General Plan.

Policy COSE 8.3.2: Open Space Buffers. When activities close to open space resources within or outside the urban area could harm them, the City will require buffers between the activities and the resources. The City will actively encourage individuals, organizations, and other agencies to follow this policy. Buffers associated with new development shall be on the site of the development, rather than on neighboring land containing the open space resource. Buffers provide distance in the form of setbacks, within which certain features or activities are not allowed or conditionally allowed. Buffers shall also use techniques such as planting and wildlife-compatible fencing. Buffers shall be adequate for the most sensitive species in the protected area, as determined by a qualified professional, and shall complement the protected area's habitat values. Buffers shall be required in the following situations [four of the five noted here, see COSE Policy 8.3.2 for A]:

B. Between urban development and agricultural operations, to address dust, noise, odors, chemical use, and access by people and pets.

C. Between agricultural operations and natural habitat, to address noise, chemical use, sediment transport, and livestock access.

D. Between new development and cultural resources, to address visual compatibility and access by people.

E. Between new development and scenic resources or the greenbelt, to address view blockage, lighting and noise, and visual transition from urban character to rural character.

F. Between urban development -- including parks and public facilities-- and natural habitats such as creeks, wetlands, hillsides, and ridgelines, Morros, scenic rock outcrops and other significant geological features, and grassland communities, to address noise, lighting, storm runoff, spread of invasive, non-native species, and access by people and pets (see also the Safety Element for "defensible space" next to wildland fire areas).

Policy COSE 8.6.3: Required mitigation. Loss or harm shall be mitigated to the maximum extent feasible. Mitigation must at least comply with Federal and State requirements. Mitigation shall be implemented and monitored in compliance with State and Federal requirements, by qualified professionals, and shall be funded by the project applicant.

A. For natural habitat that is relatively limited in extent (such as riparian or wetland habitat) mitigation shall consist of creating twice the area of habitat lost, of equal quality, in the following order of preference:

   1. The same kind on the same site.

   2. The same kind on a different site (the site shall be within the San Luis Obispo planning area).

   3. A similar kind (such as seasonal wetland in place of freshwater marsh) on the same site.

   4. A similar kind on a different site (the site shall be within the San Luis Obispo Planning Area).

B. Habitat created as mitigation should be located and designed to minimize the need for long-term artificial support (such as supplying wetlands from a well requiring energy and maintenance).

C. For a widespread habitat type or for farmland, mitigation shall consist of permanently protecting an equal area of equal quality, which does not already have permanent protection, within the San Luis Obispo Planning Area.

D. For projects involving enlargement of the urban reserve, mitigation shall consist of permanently protecting an area not previously protected, that is located and that has

sufficient size (generally four times the area to be developed) to secure a permanent edge to the city.

E. Individual small projects, each with an incremental impact on an extensive resource, may provide mitigation through payment of a fee, to be used for protecting that resource within the San Luis Obispo planning area.

F. The City may establish or participate in a "mitigation bank," through which resources are protected in a consolidated location ahead of the need to mitigate impacts of individual, small projects. The City will work with other agencies to assure successful operation of any mitigation bank that is established.

G. Any development that is allowed on a site designated as Open Space or Agriculture, or containing open space resources, shall be designed to minimize its impacts on open space values on the site and on neighboring land.

1. Hillside development shall comply with the standards of the Land Use Element, including minimization of grading for structures and access, and use of building forms, colors, and landscaping that are not visually intrusive. (See also Chapter 9.2.1)

2. Creek corridors, wetlands, grassland communities, other valuable habitat areas, archaeological resources, agricultural land, and necessary buffers should be within their own parcel, rather than divided among newly created parcels (Figure 8). Where creation of a separate parcel is not practical, the resources shall be within an easement. The easement must clearly establish allowed uses and maintenance responsibilities in furtherance of resource protection.

3. The City will encourage the County not to create new parcels within the greenbelt, with the exception of those permitted under the County's agriculture cluster incentive. Outside of cluster districts, allowed parcel sizes within the greenbelt should be no smaller, and the number of dwellings allowed on a parcel should be no greater than as designated in the September 2002 San Luis Obispo Area Plan and related County codes.

The City will encourage the County to adopt and implement a mandatory cluster district for appropriate areas of the Greenbelt under County jurisdiction to preserve open space qualities, consistent with this Element.

The City will encourage other agencies to follow these policies.

Policy COSE 8.7.2 C: Enhance and Restore Open Space. Remove invasive, non-native species in natural habitat areas, and prevent the introduction or spread of invasive, non-native species and pathogens.

City of San Luis Obispo Municipal Code

Chapter 12.24 Tree Regulations (Ordinance No. 1544). The City regards trees as essential to the community's well-being and adopted Ordinance No. 1544 for the purpose of establishing and maintaining a comprehensive program for planting, maintaining, and preserving trees within the City. Under Chapter 12.24, developers are required to submit tree removal permits to the City for review when proposing to engage in activities that may result in the harm, removal, or disfigurement of any trees.

City of San Luis Obispo Zoning Ordinance

17.70.030 Creek Setbacks. As stated in the zoning regulations, creek setbacks apply to all creeks as defined in the COSE, as shown on that element's Creek map (Figure 9), and only to those creeks. Creek setbacks shall be measured from the existing top of bank (or the future top of bank resulting from a creek alteration reflected in a plan approved by the City), or from the outside edge of the predominant riparian vegetation, whichever is farther from the creek flow line. The zoning regulations specify different setback dimensions for different classes of covered waterways such as whether the creek was zoning regulations for a 35-foot setback from the top of the bank or outside edge of riparian vegetation; within the 1996 City limits or in areas annexed after 1996. Under Section 17.70.030, Froom Creek is designated for a 35-foot setback; however, 17.70.030.E.3 provides that the City may require larger setbacks for discretionary projects in order to avoid potentially significant environmental impacts.

3.4.3 Environmental Impact Analysis

3.4.3.1 Thresholds of Significance

With respect to biological resources, applicable sections of Appendix G of the State CEQA Guidelines state that a project would normally have a significant impact on the environment if its implementation would result in:

a) 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;

b) 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;

c) 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) Substantial interference 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; or,

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.

Non-Applicable Threshold(s)

- Threshold (f) *(Conflict with an adopted conservation plan)*: The Project site is not located within the management area of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other local, regional, or state habitat conservation plans.

3.4.3.2 Impact Assessment Methodology

The information on existing biological resources presented in this section is based primarily on Applicant-prepared studies spanning the period from 2015 to 2019, which were peer reviewed by Wood, the City's EIR consultant. Botanical and biological surveys were conducted for the Project site in 2015, and updated and verified through additional field surveys conducted in spring and early summer of 2019 by KMA. The habitat, vegetation, rare plant, and animal surveys conducted in 2015 – supplemented with the additional rare plant surveys conducted in 2019 – serve as the environmental baseline / existing site conditions, as well as the basis for analysis of Project impacts against existing biological resources onsite, consistent with CEQA Guidelines Section 15125(a)(1).

~~Baseline conditions include approximately 2.0 acres of wetland within the 3.2-acre Irish Hills Plaza stormwater detention basin. This included approximately 0.6 acres of predominately native wetland species (e.g., cattails and rushes) within the forebay, and an additional 1.4 acres of potential hydric soils and similar native wetland species mixed with non-native species within the main basin.[7]~~

In addition to the surveys conducted by KMA for the Project, Wood's team performed general site reconnaissance five times between 2017 and 2019 to document site conditions. Wood planners, biologists, and botanists conducted an additional one-day reconnaissance-level site visit in January 2018 to document existing conditions and peer review the Applicant-prepared studies. Wood's team photo-documented conditions throughout the site, including the Upper Terrace and the Froom Creek channel. This information was used to review and confirm the locations and extent of creek, riparian, wetland, and upland habitats and extent and location of sensitive species.

Impacts are analyzed by evaluating the Project's effects on candidate, sensitive, or special-status species, vegetative communities, individual occurrences of plant and wildlife species, habitat linkages, and wildlife corridors. The analysis of potential impacts to biological resources is based on a review of information contained in the City of San Luis Obispo's General Plan and Creek and Waterways Management Program, the CNDDB, information from the USFWS, and several technical studies prepared by the Applicant team for the Project (Appendix E). These include:

- Biological Resources Inventory prepared by KMA in January 2016 and revised November 2018;
- Vernal Pool Habitat Assessment prepared by KMA in November 2017;
- Site Assessment for the California Red-Legged Frog (*Rana draytonii*) prepared by KMA in December 2017; and
- 2019 Rare Plant Update and Wetland Impact Analysis Memorandum prepared by KMA in July 2019.

~~[7] As discussed in Section 3.4.1.3, *Vegetation and Habitat Types/Communities*, this basin is subject to a maintenance agreement which requires clearing of vegetation to maintain capacity. Based on review of aerial photographs, the basin appears to have been maintained at least twice since being constructed 13 years ago, with wetland vegetation re-growing after such maintenance events and potentially enduring for multiple years between past maintenance events.~~

To quantify the Project's potential area of effect on specific biological resources, ArcGIS data were prepared by KMA and utilized by Wood staff to calculate the proposed Project's potential impacts on mapped habitat (see Figure 3.4-1) and sensitive biological site constraints (see Figure 3.4-2). The Project would result in the direct development of 39.1 acres of multi-family residential and senior living units, 3.1 acres of commercial, 5.6 acres of roadways and paved surfaces, 2.9 acres of parks and public facilities, disturbance of 11.5 acres associated with realignment of Froom Creek, and disturbance of 7.1 acres associated with development of the stormwater detention basin (i.e., total disturbance of approximately 59.3 percent of the Project site). Approximately 9.91 acres of this development would be associated with the development of the Upper Terrace of Villaggio (approximately 24 percent of the total area of the Upper Terrace). Given this extent of development and disturbance, Project development has the potential to impact a range of sensitive resources, particularly within the Upper Terrace area where biological resources are rich and diverse. Construction impacts are assessed based on the Project's preliminary VTM and the draft Froom Ranch Specific Plan (Appendix C), including rough grading estimates; location and area of disturbance associated with realignment of Froom Creek, roadways, and bridges; and location and size of utility and drainage infrastructure. Construction impacts are assessed based on the likely presence of heavy construction equipment, vehicles, and construction crews operating in close proximity to or within sensitive habitats. Operational impacts are based on the proposed extent of development, vehicle traffic, noise, landscape maintenance, fire protection, light and glare, and human presence within proximity to existing biological resources. This analysis assesses the potential for increased activity and increased impervious surfaces near Froom Creek to result in impacts to biological resources.

3.4.3.3 Project Impacts and Mitigation Measures

Potential impacts to biological resources could result from development of the site, including grading, fill import, realignment of Froom Creek, and vegetation/habitat removal, as well as operational generation of new light and noise, and increased human activity. Permanent and temporary impacts to biological resources in the Project site are analyzed and mitigation measures to avoid or reduce those impacts are identified and summarized in Table 3.4-6.

Table 3.4-6. Summary of Project Impacts

Biological Resources Impacts	Mitigation Measures	Residual Significance
BIO-1. Project implementation would impact sensitive riparian, wetland, and native grassland habitats identified as sensitive natural communities under state and City policy.	MM HAZ-2 MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4 MM BIO-5 MM BIO-6 MM BIO-7 MM BIO-8	Significant and Unavoidable
BIO-2. Project implementation would have substantial direct and indirect adverse impacts on candidate, sensitive, or special-status species that are known to or may occur on the Project site.	MM HAZ-2 MM BIO-1 MM BIO-9 MM BIO-10 MM BIO-11 MM BIO-12	Significant and Unavoidable
BIO-3. Project implementation would have a substantial adverse impact on state and federally protected wetlands.	MM BIO-1 MM BIO-2 MM BIO-4 MM BIO-5 MM BIO-6 MM BIO-7 MM BIO-8	Significant and Unavoidable
BIO-4. Project construction and operation would have a substantial adverse impact on the movement of resident or migratory fish or wildlife species or resident and migratory wildlife corridors along Froom Creek, Drainages 1, 2, and 3 and across open grasslands on the Upper Terrace of the Project site.	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4 MM BIO-5 MM BIO-6 MM BIO-9 MM BIO-11 MM BIO-12 MM BIO-13 MM BIO-14	Significant and Unavoidable
BIO-5. Project construction would result in the potential disturbance, trimming, or removal of up to 75 mature trees.	MM BIO-15	Less than Significant with Mitigation

Impact BIO-1 Project implementation would impact sensitive riparian, wetland, and native grassland habitats identified as sensitive natural communities under state and City policy (Significant and Unavoidable).

Project construction would create substantial direct and indirect impacts to onsite biological resources from construction disturbance, particularly sensitive resources located

within the Upper Terrace, in the Irish Hills Natural Reserve bordering the site, and wetlands in the ~~Irish Hills stormwater detention basin,~~ LOVR ditch~~,~~ and Calle Joaquin wetlands. A total of 8.37 acres of sensitive natural communities would be directly impacted within the Project site, including the loss of 4.74 acres of serpentine bunchgrass grasslands, 0.5~~1.13~~ acre~~s~~ of wetlands, and 1.13~~0.5~~ acre~~s~~ of Arroyo Willow Riparian Scrub. Project construction over a 5-year period could also expose onsite and adjacent habitats to sustained disturbance and indirect impacts from vegetation clearing, construction staging and storage, dust generation, erosion and sedimentation, risk of spills of fuel or motor oils, and increased human presence in currently natural areas. Indirect impacts would affect onsite and adjacent habitats, such as those within the Irish Hills Natural Reserve along the boundary of the Project site.

Table 3.4-7. Direct Impacts to Sensitive Habitat Types Located within the Project Site

Habitat Type (Corresponding Sensitive Natural Community)	Existing Portion of Project Site (acres)	Direct Impact (acres)	~~Indirect Impact (acres)~~[1]
Serpentine Bunchgrass Grassland (*Nassella pulchra* Herbaceous Alliance)	13.46	4.74	~~11.0 / 3.9~~
Coastal Scrub/Chaparral **(--)**	9.26	0	
Wetland (Coastal and Valley Freshwater Marsh)	8.27	~~2~~0.5	
Arroyo Willow Riparian Scrub (Central Coast Arroyo Willow Riparian Scrub)	4.82	1.13	
Total	**35.81**	**8.37**	~~**14.9**~~

[1] ~~Onsite indirect impacts / offsite indirect impact.~~Note: Acreage derived from GIS-based analysis of Project land uses overlain mapped biological resources. Indirect impacts addressed separately below.

Project construction would eliminate and potentially contaminate water sources and food supplies and available forage areas in sensitive habitats. Prolonged construction activities and exposure of large areas of disturbed soils and artificial slopes proximate to both the existing and proposed realigned Froom Creek corridor could result in erosion and sediment flows into the creek and downstream habitats during grading and site preparation activities extending over multiple phases and several years. Potential for large volumes of sediment input could compromise riparian and wetland habitat in Froom Creek and San Luis Obispo Creek downstream, as well as the Calle Joaquin wetlands. Changes to the creek flow and hydrology with potential for release of contaminants into riparian and wetland habitats could directly affect plants and animals by reducing the quality of existing habitat and causing mortality of individuals, both of which constitute an adverse impact to the affected species (see Impact BIO-2). Damage to or direct removal of 8.37 acres of sensitive

vegetative communities as a result of the proposed disturbance and development is considered a *potentially significant* impact.

Once operational, the Project would require maintenance and clearance of vegetation to maintain permanent wildfire buffers both onsite and offsite (e.g., within the Irish Hills Natural Reserve) (For additional information see Section 3.7, *Hazards, Hazardous Materials, and Wildfire*.) The exact location, width, and area of these buffers will be subject to coordination, review, and approval of the City Natural Resources Manager, San Luis Obispo Fire Department (SLOFD), CALFIRE, and the Applicant based on project development plans. This coordination has the potential to result in a reduced size of or need for a wildfire buffer and fuel management zone around the proposed development. However, for the purposes of this analysis, wildfire buffers are conservatively estimated to require a minimum width of 100 feet of defensible space from planned structures with vegetation management strategies.[8] Wildfire buffers are anticipated to extend into the Irish Hills Natural Reserve along approximately 1,000 feet of the perimeter of Madonna Froom Ranch, as well as 700 feet of Villaggio's Lower Area (see Figure 3.7-2). Although the precise location and width of buffers are not known, assuming fire clearance of a maximum of up to 100 feet within Irish Hills Natural Reserve, approximately 3.9 acres of coastal sage scrub, chaparral, and grassland habitats within the Reserve may be indirectly impacted through fuel management techniques approved by the City to minimize wildfire risk. Buffer management would entail strategic vegetation management to balance sensitive habitats with wildfire fuel reduction.

Clearance of a wildfire buffer area within internal open space on the Project site would also indirectly result in the permanent loss or modification of up to 11.0 acres of existing vegetation onsite through vegetation clearance. Wildfire buffer clearance would impact annual non-native grasslands and serpentine bunchgrass grasslands, coastal live oak/ California bay woodlands, coastal scrub/chaparral, and riparian habitats in the Upper Terrace. The western boundary of the Lower Area would likely also require additional vegetation maintenance and clearance. Planned development would also closely border Drainages 1, 2, and 3, which may also be subject to vegetation clearance and management requirements resulting in impacts to wetland vegetation, including the endangered Chorro Creek bog thistle. Therefore, wildfire buffer clearance requirements would result in

[8] Recent major wildfires in California and observed changes in the severity of fires and their behavior are causing some agencies to adjust fire management strategies, including some changes in buffer requirements. Final fire buffer width and maintenance vegetation clearance and maintenance requirements would be determined by SLOFD.

potential indirect impacts to biological resources both on and off the Project site, including potentially rare and sensitive habitats, such as serpentine bunchgrass grasslands. See Impact HAZ-1 in Section 3.7, *Hazards, Hazardous Materials, and Wildfire,* for additional discussion of fire clearance requirements. While buffer management would entail strategic vegetation management to balance sensitive habitats with wildfire fuel reduction, ~~D~~damage to or direct removal of sensitive vegetative communities as a result of fire management activities (e.g., vegetation clearing for fire clearance) is considered a *potentially significant* impact.

Sensitive Upland Habitat

Project construction would result in the direct, permanent loss of up to 4.74 acres of native serpentine bunchgrass grassland habitat, which corresponds to the *Nassella pulchra* Herbaceous Alliance, a designated sensitive natural community considered biologically important by CDFW. Once operational, maintenance of wildfire buffers could result in up to an additional 14.9 acres of disturbance of habitats on and offsite, including serpentine rock outcroppings and native serpentine bunchgrass grassland habitat (refer also to Impact HAZ-1; see Figure 3.7-2). Fire clearance requirements could also impact coastal scrub and coast live oak/ California bay woodlands, which may support special-status species (see Impact BIO-2 below). Habitat near or adjacent to the Project development area may also be subject to gradual degradation over time through increased human activity such as landscape maintenance practices, herbicide use, polluted runoff, trampling, introduction of non-native species, or other activities of new residents and long-term operation of the developed and landscaped portions of the site. Damage to or direct removal of these vegetation communities as a result of the proposed grading and development or operation of the Project would be considered a *potentially significant* impact.

Sensitive Riparian Habitat

Project construction would result in permanent direct loss of 1.13 acres of Arroyo Willow Riparian Scrub through realignment of Froom Creek and construction of the proposed stormwater detention basin on the Mountainbrook Church property, as well as relocation or realignment of the existing LOVR ditch, widening of LOVR, and construction of a new Project entrance road and culvert. Direct removal of Central Coast Arroyo Willow Riparian Scrub, a designated sensitive natural community, would be considered a *potentially significant* impact.

In addition to these direct impacts, the Project includes realignment and restoration of Froom Creek which may mitigate some of these losses of riparian habitat. If successful, and as shown in the Applicant's proposed restoration plan, the Project would result in the creation of riparian habitat through the relocation and restoration of Froom Creek. However, given the existing Froom Creek habitats and channel characteristics, which are a combination of dry cobble and sandy gravelly wash with no riparian vegetation within the Specific Plan area, successful establishment of a riparian woodland and, more importantly, its long-term survival may be challenging. As discussed in Section 3.8, *Hydrology and Water Quality*, the resiliency of such restored riparian habitat during major flood flows is uncertain, though potential for bank erosion is anticipated to be limited downstream of the proposed bend in the realigned creek channel. Along approximately 1,000 feet of the realigned Froom Creek from the Project site's western boundary and through the major bend in the creek, there appears to be the potential for higher velocity flood flows (5 to 9 feet per second) to scour planted riparian vegetation from the creek bank leading to potential for repeated damage or removal of such vegetation over the 75 or more years life of the Project. In the period shortly following construction of the realigned Froom Creek channel and before riparian vegetation can become fully established, or following a severe flood event that would remove vegetation from the creek bank, flow velocities within the creek would become much greater (8 to 12 feet per second) (Appendix H). This potential would be particularly high during flood events and debris flows that may follow a fire in the upper Froom Creek watershed.[9] While such scouring is a natural process along creek corridors, given the engineered nature of this realigned creek habitat, it is uncertain that native riparian habitat would naturally re-establish, potentially requiring repeated restoration efforts and maintenance over the long term. The Project would directly affect riparian habitat, and proposed restoration in the realigned Froom Creek channel is not certain to fully offset this loss. Therefore, this impact would be considered *potentially significant*.

Sensitive Wetland Habitat

Project development would impact a range of wetland habitats onsite, ~~including both~~ sensitive natural communities in the Upper Terrace, along the LOVR ditch, and in the Calle

[9] Fire return frequencies are uncertain. However, there are no records of fires having occurred within the Irish Hills in recent history. While wildfire return frequencies are not easily predictable, it is likely that the Froom Creek watershed will burn at least once or twice during a presumed 75-100 years Project horizon. If such a burn is followed by heavy rains, substantially increased flows, debris, and sediment can be anticipated from this watershed, with associated potential for increases in scouring and sedimentation until watershed vegetation recovers.

Joaquin wetlands~~and constructed wetlands~~. Direct adverse impacts could affect up to 0.5-acre of wetland habitat, 0.2-acre of which corresponds to the Coastal and Valley Freshwater Marsh sensitive natural community, through construction of the realigned Froom Creek and LOVR road shoulder improvements. In addition, construction of the Upper Terrace may result in the direct disturbance or incidental fill of Drainages 1, 2, and 3 to allow for movement of construction equipment and material around the site. Such activities have potential to result in additional sedimentation or pollution of adjacent or downstream drainages and wetland habitats also associated with the Coastal and Valley Freshwater Marsh sensitive natural community. During construction of private roadways associated with the proposed development, four headwall/culvert road crossings of approximately 30 feet in width would be constructed over Drainages 1, 2, and 3 and would potentially lead to direct loss of habitat and impacts to adjacent and/or downstream wetland and stream habitat. ~~The proposed Project would also eliminate up to 2 acres of wetlands in the existing 3.2-acre Irish Hills stormwater detention basin. This would include approximately 0.6 acres of largely native wetland species (e.g., cattails and rushes) within the forebay, and an additional 1.4 acres of wet soils and similar mixed native wetland species mixed with and non-native species within the main basin.~~ The loss of these sensitive wetland habitats would be substantial, and the Applicant's preliminary plans do not account for restoration of this habitat, though detailed plans will be required during regulatory permitting of the Project.

Based on preliminary designs, the Project would include installation of at least three utility lines underlying the realigned Froom Creek and existing riparian areas adjacent to LOVR ~~Calle Joaquin wetlands~~ to connect with existing infrastructure along LOVR (see Figure 2-13 and Figure 2-14). It is unknown at this time how much of these lines would be installed through trenching or directional drilling. As such, it is conservatively assumed that construction of utility lines across Froom Creek and onsite wetlands would require some degree of surface disturbance and result in adverse effects to these habitats. Installation of these utilities may also result in adverse effects to water quality and designated critical instream habitat downstream from potential introduction of sediment runoff, siltation, and accidental spillage of fuel and lubricants.

The Calle Joaquin wetlands are currently fed by high groundwater, an artesian well, and surface water inflows primarily from the LOVR ditch and the 3.2-acre Irish Hills Plaza stormwater detention basin. These wetlands are not typically hydrologically connected to surface waters from Froom Creek, but may receive some flows when flood flows overtop the existing Froom Creek channel; the frequency of such an event is estimated to occur

during a 10-year flood event. Project implementation would expose the Calle Joaquin wetlands to substantial changes in hydrology and drainage. The Project would configure the LOVR ditch to flow to the realigned Froom Creek rather than to the Calle Joaquin wetlands, removing a regular source of inflow to the wetlands. However, as described above, upward groundwater inflow is the primary hydrologic influence supporting these wetlands. Though stormwater is a source of water supporting these wetlands, the presence of groundwater inflows within the area indicates the Calle Joaquin wetland area is likely to persist with relocation of the stormwater basin and installation of the LOVR ditch, even during dryer periods. Given the dominant source of water for these wetlands is and would remain groundwater inflow, alterations in the hydrologic connections and source water for the Calle Joaquin wetlands is not anticipated to significantly affect the health of these wetlands (Appendix E).

Within the Upper Terrace, proposed development would be closely situated along both sides of Drainage 2 for over 475 feet, with setbacks of new buildings from this wetland of as little as approximately 10 feet based on preliminary site plans. Such development could create potential direct and indirect impacts to this wetland habitat through damage caused by heavy equipment operations and polluted runoff during construction, fire clearance requirements, landscape management, changes in surface and subsurface drainage and hydrology over the long-term, and increased disturbance through activity of new residents. Development in the Upper Terrace would also closely border Drainage 1 for almost 250 feet with setbacks of as little as approximately 18 feet. Several units in Lower Villaggio would also be constructed adjacent to Drainages 2 and 3, with similar potential for impacts to sensitive wetland habitat, potentially affecting the health, extent, or quality of these wetlands. For these reasons, impacts to sensitive wetland habitat are considered *potentially significant.*

In addition, as discussed in Section 3.13, *Transportation and Traffic,* the Project would be required to implement MM TRANS-9, which would require widening of LOVR fronting the Project site between Irish Hills Plaza and Calle Joaquin and developing a curb, gutter, sidewalk, and protected bike lane. The design of the proposed improvements would result in an estimated 19,300 sf of additional pavement area extending into the Project site, resulting in an estimated 18,425 sf of disturbance to the wetlands and riparian habitat located within the existing LOVR ditch and Calle Joaquin wetlands. Based on the total area of disturbance associated with widening of LOVR to accommodate this improvement, the secondary impact to sensitive riparian and wetland habitat is estimated to be up to 25,000

sf (0.57 acre). Refer also to Impact TRANS-2 for discussion of secondary impacts associated with these required improvements.

Proposed Policy 3.2.7 of the Specific Plan is intended to address such impacts to sensitive natural communities and habitats and requires that impacts be avoided or minimized, including through the creation of twice the area of habitat lost (2:1 ratio), of equal quality and similar kind, within the Specific Plan Area or adjacent open space. However, several of the habitats impacted would be difficult or infeasible to restore or replace. First, native bunchgrass grasslands and the *Nassella pulchra* Herbaceous Alliance are challenging to successfully restore or replace with habitat of equal quality. For example, while it is possible to plant plugs of *Stipa pulchra*, successful restoration of the full complement of grassland herbaceous species, particularly in the unique serpentine grasslands, may not be feasible.[10] In addition, replacing the unusual seep-fed wetlands present along impacted segments of Drainages 1, 2, and 3 in the Upper Terrace would be challenging. These wetlands would be directly impacted through culvert-headwall installation and sedimentation from grading and development as well as new buildings sited as little as 10-20 feet from these wetlands, and the ability to reestablish and maintain rare plant species present within these areas is unknown. Lastly, ensuring the long-term maintenance of the restored From Creek riparian habitat must be considered speculative and as such, cannot be considered as feasible long-term mitigation due to potential for scour and denudation within the Froom Creek corridor.

In addition to these impacts, there are four additional ways in which Project-related drainage improvements (i.e., Froom Creek realignment) may affect the Calle Joaquin wetlands. These impacts are associated with substantial changes in the hydrologic connection between Froom Creek and the Calle Joaquin wetlands:

1) Change in frequency and quantity of waters entering the Calle Joaquin wetlands and potential changes to wetland habitat.

The proposed creek realignment would substantially increase the hydrologic interaction between the Calle Joaquin wetlands and Froom Creek, effectively making this wetland part of the active stream system. The changes in the hydrologic balance of this wetland may have consequences to the character, function, and species composition of these wetlands.

[10] In consultation with Wood biologists and other local restoration ecologists, the difficulty of fully restoring a functioning native grassland with a full complete set of species has been noted; success of restoration of such grasslands with a full complement of species that currently occur can therefore not be assured.

The design of the realigned Froom Creek and low-flow channel would allow for flows greater than a 2-year event to overtop a low-flow channel and flow into the Calle Joaquin wetlands. Flood flows reaching the Calle Joaquin wetlands would become ~~substantially~~ more frequent, occurring during storms larger than a 2-year storm event. Under existing conditions, based on initial cross sections of the creek channel and banks, Froom Creek overtopping currently occurs along upper segments of the creek bank when flows are in excess of 10-year to 25-year storm conditions, depending on location. Under the Project, due to the topography and the design of the realigned creek channel, the Calle Joaquin wetlands would be inundated with stormwater flows and serve as a wide channel for the realigned Froom Creek. During large rainfall events, up to 11 acre-feet of stormwater would flow into the wetlands, filling to a depth of 3 to 4 feet, submerging the wetlands more frequently and for longer duration than under existing conditions. Further, stormwater collected in the Calle Joaquin wetlands would primarily evaporate, since high groundwater would cause low rates of percolation and the Project does not include drain pipes to allow the detained water to flow downstream or on to other areas. As such, the Calle Joaquin wetlands would hold standing water for extended periods and the wetlands may become submerged more frequently and for prolonged periods of time following storm events. This change in frequency and duration of potential inundation of these wetlands has an unpredictable potential to affect the character and species composition of the wetlands (and associated use by wildlife), potentially affecting their qualifying characteristics as Coastal and Valley Freshwater Marsh and a sensitive natural community. Therefore, the impacts of these changes in the hydrology of the Calle Joaquin wetlands are considered *potentially significant.*

2) Potential for migration of the Froom Creek corridor through the wetlands.

Based on the Preliminary Hydrologic and Hydraulic Calculations and Preliminary Sediment Transportation Analysis and Calculations prepared by RRM (Appendix J) for the proposed Froom Creek channel realignment, water flowing through the low-flow channel would move at a rate that would not cause erosion (less than 1 foot per second). Under normal conditions, erosive flow velocity and sediment transport would not be present through the low-flow channel due to the low anticipated flow rate. The Project does not include any bank stabilization measures for the proposed low-flow berm separating the realigned Froom Creek from the Calle Joaquin wetlands that would ensure it retains its proposed location and function over the life of the Project. During large flood events with higher-velocity flows, over time the low-flow berm may erode, and Froom Creek may migrate into and form a braided channel within the Calle Joaquin wetland due to more

frequent bank overtopping and flooding and lower elevations within the wetland area (refer to Appendix E). Migration of the creek channel or establishment of a braided channel within the wetlands would alter and potentially reduce wetland habitat and potentially alter the mix of wetland vegetation that contributes to the Calle Joaquin wetlands designation as a sensitive natural community. Therefore, impacts are considered *potentially significant.*

3) Increases in sedimentation of the wetlands under typical storm conditions.

Realignment of Froom Creek and design of the low-flow channel would increase potential sedimentation of the Calle Joaquin wetlands over time. The existing Froom Creek overtops and flows to the Calle Joaquin wetlands infrequently from upper reaches onsite during 10- to 25-year storm events. Under most storm conditions, the existing Froom Creek channel conveys all stormwater offsite and does not flow to the Calle Joaquin wetlands. Under proposed conditions, the Froom Creek corridor would directly abut the Calle Joaquin wetlands and a low-flow channel creek bank would allow for substantially more frequent direct flow of water from smaller storm events (anything greater than a 2-year storm event) into the wetlands. Because large-scale (i.e., 50- to 100-year) floods carry the highest sediment volume and already overtop existing creek banks, deposition of sediment within the Calle Joaquin wetlands during smaller overflow events would be incremental. In addition, most sediment within the main realigned Froom Creek channel is expected to drop out (settle) higher up the creek channel, before reaching the Calle Joaquin wetlands. While the potential increased sediment transport from the realigned Froom Creek into the Calle Joaquin wetlands have some potential for increased long-term accumulation of sediments in the Calle Joaquin wetlands, typical sediment volumes carried by more frequent small storms tend to be low, and higher sediment loads are typically carried by larger 50- to 100-year storm events. In addition, and as discussed above, increased frequency and duration of inundation related to stormwater storage would tend to offset incremental increases in sedimentation and its possible effects on the character and species composition of these wetlands. It remains feasible that sediment carried by more frequent storms that would now regularly overtop the banks of the realigned Froom Creek would accumulate and alter the Calle Joaquin wetlands over the life of the Project. Therefore, impacts are considered *potentially significant.*

4) Effects from severe storm and post-fire flood conditions from realignment of the Froom Creek corridor.

Large storm events, particularly those occurring shortly after wildfires have potential to result in substantial sediment loading of creeks and downstream areas. As discussed in

Section 3.7, *Hazards, Hazardous Materials, and Wildfire,* there are no records of wildland fires having occurred within the immediate Project vicinity, which may indicate a high degree of fuel loading and increased risk of wildfire, particularly within the Irish Hills Natural Reserve (County of San Luis Obispo Fire Department 2018). Depending on weather conditions, habitat types, and fire management policies, the Irish Hills and surrounding area have a very high risk of wildland fire and the majority of the area is identified as a Very High Fire Hazard Severity Zone (FHSZ) by CALFIRE. Major storms, particularly those that occur in post-fire conditions, have the potential for mass sediment loading within the realigned Froom Creek and into the Calle Joaquin wetlands with potential to affect the Calle Joaquin wetlands. However, in high intensity post-fire flood conditions, conveyance of sediment and denuded soil to the Calle Joaquin wetlands has potential to occur regardless of the Project. Implementation of the Project would not exacerbate these conditions; therefore, potential impacts would be *less than significant.*

Mitigation Measures

MM HAZ-2 shall apply.

MM BIO-1 *The Applicant shall prepare and implement a Biological Mitigation and Monitoring Plan that identifies both construction and operational related avoidance, reduction, and mitigation measures for impacts to sensitive natural communities. The Biological Mitigation and Monitoring Plan shall include Best Management Practices (BMPs) to avoid or minimize impacts to biological resources, and implementation of on and offsite habitat replacement as follows:*

1) *The Biological Mitigation and Monitoring Plan shall include the following construction-related measures and BMPs:*

   a) *Construction equipment and vehicles shall be stored at least 100 feet away from existing and proposed drainage features and adjacent riparian habitat, and all construction vehicle maintenance shall be performed in a designated offsite vehicle storage and maintenance area approved by the City.*

   b) *Prior to commencement of construction, Drainages 1, 2, 3, and 4 and all associated springs, seeps, and wetlands shall be protected with construction fencing located a minimum of 25 feet from the edge of the stream channel or top of bank and signed to prohibit*

entry of construction equipment and personnel unless authorized by the City. Fencing shall be maintained throughout the construction period for each phase of development. Fencing and signage shall be removed following completion of construction.

c) *During any construction activities within 50 feet of the existing Froom Creek channel, realigned Froom Creek channel, LOVR ditch, Drainages 1, 2, 3, or 4, or other existing or proposed drainage features, a City-approved biological monitor shall be present and have the authority to stop or redirect work as needed to protect biological resources.*

d) *All construction materials (e.g., fuels, chemicals, building materials) shall be stored at designated construction staging areas, which shall be located outside of designated sensitive areas. Should spills occur, or if any unanticipated hazardous materials are discovered, materials and/or contaminants shall be cleaned immediately and recycled or disposed of to the satisfaction of the RWQCB, Department of Toxic Substances Control, and/or San Luis Obispo County Public Health Environmental Services, as applicable.*

e) *All trash and construction debris shall be properly disposed at the end of each day and dumpsters shall be covered either with locking lids or with plastic sheeting at the end of each workday and during storm events. All sheeting shall be carefully secured to withstand weather conditions.*

f) *The Applicant shall implement measures designed to minimize construction-related erosion and retain sediment on the Project site, including installation of silt fencing, straw waddles, or other acceptable construction erosion control devices. Such measures shall be installed along the perimeter of disturbed areas and along the top of the bank of the existing and proposed Froom Creek channel and other existing or proposed drainage features and 25 feet from the edge of Drainages 1, 2, 3, and 4. All drainage shall be directed to sediment basins designed to retain all sediment onsite.*

g) *Concrete truck and tool washout shall occur in a designated location such that no runoff will reach the creek, onsite drainages, or other sensitive areas.*

h) *All open trenches shall be constructed with appropriate exit ramps to allow species that fall into a trench to escape. All open trenches shall be inspected at the beginning of each work day to ensure that no wildlife species is present. Any sensitive wildlife species found during inspections shall be gently encouraged to leave the Project site by a qualified biologist or otherwise trained and City-approved personnel. Trenches will remain open for the shortest period necessary to complete required work.*

i) *Existing disturbed areas shall be used for construction staging and storage to the maximum extent possible to minimize disturbance of undeveloped habitats. All construction access roads and staging areas shall be located to avoid known/mapped habitat and minimize habitat fragmentation.*

Plan Requirements and Timing. The Biological Mitigation and Monitoring Plan shall be submitted for review and approval by the City prior to issuance of grading permits and recordation of the final VTM. The plan shall incorporate any additional measures or requirements identified by state and federal agencies, including but not limited to CDFW, RWQCB, NMFS, and USFWS. The Applicant shall prepare a Biological Mitigation Plan that identifies and incorporates all required measures identified in MM BIO-2 through MM BIO-12 below. The plan shall specify all mitigation site locations, timing of surveys and activities, species composition, habitat compensation, species avoidance measures, and other required information, including identification of appropriate onsite construction staging locations. The plan shall demonstrate compliance with all required measures and any required permits shall be obtained from state and federal regulatory agencies prior to the issuance of grading or building permits. A 7-year site mitigation monitoring plan shall also be prepared by the City-approved biologist and incorporated into the Biological Mitigation and Monitoring Plan prior to issuance of grading permits and recordation of the final VTM,

with annual reports submitted to the City Natural Resources Manager and Community Development Department.

Monitoring. The City shall review and approve the Biological Mitigation and Monitoring Plan to ensure that all BMPs and appropriate mitigation measures have been included. The City shall ensure compliance with requirements of the Biological Mitigation and Monitoring Plan through frequent monitoring and inspection, and receipt of quarterly monitoring reports provided by the Applicant's Environmental Coordinator required per MM BIO-2. The Applicant's Environmental Coordinator shall also ensure compliance during habitat compensation and/or restoration activities through routine monitoring, inspection, and reporting of restoration activities.

MM BIO-2 *The Applicant shall retain a qualified Environmental Coordinator/qualified biologist, subject to review and approval by the City to oversee compliance with the Biological Mitigation and Monitoring Plan. The Applicant's Environmental Coordinator shall monitor all construction activities, conduct a biological resources education program for all construction workers prior to the initiation of any clearing or construction activities, and provide quarterly reports to the City regarding construction activities, enforcement issues, and remedial measures. The Applicant's Environmental Coordinator shall be responsible for conducting inspections of the work area each work day to ensure that excavation areas and sensitive or restored habitats do not exhibit construction-related impacts or hazards to wildlife. If any exposure risk is identified, the Environmental Coordinator shall implement measures that could include, but not be limited to, hazing, fencing, and wildlife removals to eliminate the exposure risk.*

In addition, the Applicant's Environmental Coordinator shall monitor and regulate all construction occurring within 50 feet of the existing and proposed Froom Creek channel, other existing or proposed drainage features, –riparian habitat, Drainages 1, 2, 3, and 4, and seasonal or permanent wetlands. During appropriate flowering, nesting, breeding, migration, and dispersal seasons, the Environmental Coordinator shall also conduct sensitive species surveys immediately prior to construction

activities and shall monitor construction activities in the vicinity of habitats to be avoided.

The work area boundaries and other off-limit areas shall be identified by the biologist and/or Environmental Coordinator on a daily basis. The biologist and/or Environmental Coordinator shall inspect construction and sediment control fencing each work day during construction activities. Any vegetation clearing activities shall be monitored by the biologist and/or Environmental Coordinator.

Plan Requirements and Timing. The City shall approve the Applicant's qualified Environmental Coordinator/qualified biologist prior to issuance of grading and building permits for each phase of construction. The Environmental Coordinator shall be present onsite to monitor construction activities pursuant to the approved Biological Mitigation and Monitoring Plan.

Monitoring. The Environmental Coordinator shall monitor all grading and construction activities occurring within the vicinity of sensitive habitats or known location of sensitive species, shall conduct regular site inspections throughout the entire site, and shall be responsible for compliance of the construction activities and the above BMPs within MM BIO-1 and MM BIO-3 through MM BIO-8. During construction, the Environmental Coordinator shall submit quarterly monitoring reports to the City to ensure compliance with the Biological Mitigation and Monitoring Plan and applicable laws, regulations, and policies. The Environmental Coordinator/qualified biologist shall be onsite during all construction activities which take place within 50 feet of sensitive creek, wetland, and riparian habitat areas.

MM BIO-3 *The Biological Mitigation and Monitoring Plan shall include a Habitat Mitigation and Monitoring Plan (HMMP) with details on timing and implementation of required habitat restoration, enhancement, or creation measures. The Biological Mitigation and Monitoring Plan and HMMP shall be prepared under the direction of, and approved by, the City's Natural Resources Manager in conjunction with regulatory agencies with permitting authority over the Project. The HMMP shall contain, at a*

minimum, the following components (or as otherwise modified by regulatory agency permitting conditions):

a) Pre-construction surveys and delineation of vegetation communities, habitat, and wetland features, including clear maps and a summary of onsite habitats to be protected and acreage, design, and locations of required habitat mitigation sites.

b) A description of the location and boundaries of the mitigation site and description of existing site conditions.

c) A description of measures to be undertaken to enhance the mitigation site for the target species and to protect sensitive resources.

d) Record necessary replacement of disturbed, altered, and/or lost area of habitat.

e) A binding long-term agreement with the Applicant to implement and maintain protected and restored sensitive habitats, including native bunch grassland, wetlands, springs, seeps, tributary drainages, and other sensitive or restored native habitats. These measures shall identify typical performance and success criteria deemed acceptable by the City and CDFW based on measurable goals and objectives. Said criteria for restored habitats shall be, at a minimum, at least 70-percent survival of container plants and 70-percent relative cover by vegetation type.

f) A description of habitat and species restoration and monitoring measures, including specific and objective performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule. (At a minimum, success criteria shall be at least 70-percent survival of container plants and 70-percent relative cover by vegetation type and will include a replacement ratio of 2:1 and determination by a City-approved biologist that the mitigation site provides ecological functions and values for the focal species equal to or exceeding the impacted habitat.)

g) Plan requirements that ensure mitigation elements that do not meet performance or final success criteria within 5 years are completed through an extension of the plan for an additional 2 years or at the discretion of the City Natural Resources Manager with the goal of completing all mitigation requirements prior to the HMMP end date.

h) Monitoring of the mitigation and maintenance areas shall occur for the period established in the HMMP, or until success criteria are met; an endowment may be required in some cases as determined by the City. If success criteria cannot be met through the HMMP, the City Natural Resources Manager shall specify appropriate commensurate measures (e.g., onsite or offsite restoration, endowment, or bond to the City for completion of necessary mitigation).

i) A binding long-term agreement with the Villaggio Life Plan Community to fund and retain a qualified biologist to train all landscaping crew staff hired over the life of the development on sensitive plant species and habitat within the vicinity of the development, including the identification and avoidance of sensitive plants and habitat. The qualified biologist shall conduct annual monitoring of vegetation surrounding the development and prepare a report summarizing the avoidance or disturbance of sensitive resources from operational activities of the Villaggio development, and identifying necessary replacement or restoration of affected resources. Necessary mitigation shall be subject to the same standards for performance, monitoring, and success identified in subitems b through h, above. The report shall be submitted to the City annually for review and approval.

j) A plan for fencing and/or signage around the Upper Terrace of the Villaggio development, prohibiting residents, guests, and employees from accessing and disturbing the surrounding sensitive resources.

k) Requirements for payment of annual fees to the City to fund City review and inspection of the site and Biological Mitigation and Monitoring Plan and HMMP requirements.

Plan Requirements and Timing. All requirements shall be included on the Biological Mitigation and Monitoring Plan to be submitted to the City for review and approval prior to issuance of grading permits and recordation of the final VTM.

Monitoring. The City shall review and approve the Biological Mitigation and Monitoring Plan and HMMP to ensure that all BMPs and appropriate mitigation measures have been included. The City shall ensure compliance with requirements for the Biological Mitigation and Monitoring Plan through frequent monitoring and inspection. The Environmental Coordinator shall also ensure compliance during habitat compensation and/or restoration activities through routine monitoring and inspection of restoration activities.

MM BIO-4 *The Biological Mitigation and Monitoring Plan shall require avoidance of sensitive natural communities outside approved development footprints such as the Nassella pulchra Herbaceous Alliance, Central Coast Arroyo Willow Scrub Community, Coastal and Central Valley Freshwater Marsh, and wetland areas to the maximum extent feasible. Mitigation for impacted sensitive natural communities that cannot be avoided shall be achieved through one or more of the following options, subject to City approval:*

a) Onsite restoration, enhancement, or creation of suitable replacement habitat, if feasible onsite restoration opportunities exist and at ratios consistent with those identified in MM BIO-5;

b) Offsite restoration or creation of suitable habitat for the impacted species at the minimum replacement ratio of 2:1 for sensitive natural communities, native grasslands, and riparian habitat;

c) Financial contribution to an in-lieu fee program that results in restoration or creation of suitable habitat for the impacted natural communities and/or species; and/or

d) Purchase of mitigation credits at a USFWS- and/or CDFW-approved mitigation bank.

Plan Requirements and Timing. All requirements shall be included in the Biological Mitigation and Monitoring Plan and HMMP to be submitted to

the City for review and approval prior to issuance of grading permits and recordation of the final VTM.

Monitoring. The City shall review and approve the BMMP and HMMP to ensure that all BMPs and appropriate mitigation measures have been included. The Applicant's Environmental Coordinator shall ensure compliance during habitat compensation and/or restoration activities through routine monitoring, inspection, and reporting of restoration activities pursuant to the approved Biological Mitigation and Monitoring Plan and HMMP. The City shall ensure compliance with requirements for the Biological Mitigation and Monitoring Plan and HMMP through receipt and review of monitoring reports, -and site inspections.

MM BIO-5 The Biological Mitigation and Monitoring Plan shall require all temporary and permanent direct and indirect impacts to wetlands, grasslands, and riparian habitat be mitigated, as follows:

a) Temporary direct impacts to wetland, native grassland, and riparian habitat ~~impacts~~ shall be mitigated at a minimum 1:1 mitigation ratio (area of restored habitat to impacted habitat).

b) Permanent direct impacts to sensitive natural communities, such as native grasslands, and riparian habitat shall be mitigated at a 2:1 ratio (area of restored and enhanced habitat to impacted habitat).

c) Permanent direct impacts to wetlands shall be mitigated at a minimum 3:1 ratio unless otherwise directed by state and federal agencies, including but not limited to the CDFW, RWQCB, NMFS, and USFWS (as appropriate).

d) Potential indirect impacts to the Calle Joaquin wetlands affected by the Froom Creek realignment and changes to site hydrology shall be mitigated as follows. As a part of the HMMP prepared for the Project, the Applicant shall prepare and implement a Long-Term Wetland Monitoring Plan that is designed to quantitatively and qualitatively assess the effectiveness of the HMMP over time to ensure its objectives are achieved. The Long-Term Wetland Monitoring Plan shall be supported by a Baseline Conditions Assessment that identifies the pre-construction condition of the

Calle Joaquin wetlands and establishes success criteria for sustained wetland conditions. The Baseline Conditions Assessment shall provide qualitative and quantitative information that will be used in comparing data obtained during subsequent monitoring years to determine if a significant deviance from baseline conditions has occurred at the site. The Long-Term Wetland Monitoring Plan will establish the parameters of a significant deviance from baseline conditions. A significant deviance from baseline may be defined as a "change in wetland area greater than 10%". The Baseline Conditions Assessment shall be updated prior to the start of construction to support agency permitting and guide implementation of the Long-Term Wetland Monitoring Plan. This updated baseline shall be considered in combination with existing and past baseline documentation to provide an expanded baseline reflective of a range of acceptable conditions to compare post Project conditions. The Baseline Conditions Assessment shall include a focused description of the site's hydrologic setting, vegetative cover and composition, quantified wetland areas and classifications, and shall establish the threshold for a significant deviance from wetland area based on the presence of hydrophytic plant species, hydric soil indicators, and wetland hydrology.

At minimum, the condition of the wetland shall be evaluated on an annual basis through completion of a wetland assessment using a regulatory agency approved model (such as, but not limited to, the California Rapid Assessment Method [CRAM]) to document and facilitate long-term monitoring of changes to the wetland. The annual evaluation shall determine and document any degree of change to the wetland as a result of the proposed changes to site hydrology and development throughout build-out under the Specific Plan. Reports documenting the annual wetland assessment shall be provided to the City and relevant regulatory agencies.

Long-Term Wetland Monitoring for the Calle Joaquin wetlands shall occur continuously for a period of no less than 7 years following Phase I build-out of the Froom Ranch Specific Plan area. After the initial 7-years of minimum annual monitoring, the

frequency of long-term evaluations shall be determined in coordination with regulatory agencies and per the requirements of the Long-Term Wetland Monitoring Plan.

The Long-Term Wetland Monitoring Plan shall include (at minimum) the following requirements. Additional detailed criteria and performance standards will be established in the HMMP prepared for the project and approved by regulatory agencies, but they shall not be any less stringent than the following criteria and performance standards:

i. At minimum, annual monitoring shall evaluate and track the wetland health and biological integrity of the Calle Joaquin wetlands.

ii. Annual or semi-annual (twice annually) evaluations shall utilize intensive site assessments to provide a more thorough and detailed measure of wetland condition by gathering direct measurements of biological taxa and hydrogeomorphic functions.

iii. Typical industry standards for the quantitative evaluation of plant cover will be used (e.g., Bonham 1989) to evaluate plant composition and structure as well as direct inspections of soil conditions and hydrologic functions.

iv. Annual or semi-annual evaluations shall observe and document the following, at a minimum:

- *whether groundwater recharge from Froom Creek to the shallow aquifer is being sustained,*
- *whether the onsite artesian well has been discharging to the wetland,*
- *evidence of overflows entering the Calle Joaquin wetland from the realigned Froom Creek,*
- *excessive ponding, as evidenced by changes in vegetation related to increased duration of ponding,*

- *measured depth to groundwater in the onsite artesian well and the relationship of these conditions with conditions in the wetland,*
- *specific conductance and temperature in the wetland and other surface sources,*
- *the presence or absence of salt efflorescences in the wetland,*
- *any persistent green vegetation patches or changes in willow/grass ecotone, and*
- *representative photo points.*

v. *Monitoring of the realigned creek's hydrology would be required following large storm events during the ~~rain~~rainy season that are sufficient to initiate flowing water through the site. If after the 3rd year of monitoring, vegetation has successfully established along the creek corridor and sedimentation and erosion are not observed beyond what is determined to be a normal level, then the rainy season monitoring could be scaled back to occur on a quarterly or as-needed basis for the remainder of the monitoring schedule, upon review and approval of the City's Natural Resources Manager and applicable regulatory agencies and consistent with the Long-Term Wetland Monitoring Plan.*

vi. *Success criteria to determine whether the Calle Joaquin wetland functions are sustained shall include the following, at a minimum:*

- *The constructed bank between the realigned Froom Creek channel and the Calle Joaquin wetlands remains functional and does not recurrently scour or fill to a degree that impairs its operation or impedes circulation through the wetland,*
- *Excessive surface water does not pond for periods of long duration,*

- *Salts do not accumulate such that discernible increases in salt efflorescences at the ground surface are not visible,*
- *Evidence of deposition by high flows is not found within the wetland (e.g., silt, organics, or other flood deposits).*

vii. *If success criteria are not achieved within the 7-year initial monitoring period, a hydrologic assessment will be conducted by a USACE-approved specialist in groundwater supported wetlands to establish whether non-attainment is attributable to onsite conditions or actions beyond the effective control of the Project Applicant. The specialist shall be a registered hydrologist or certified hydrogeologist with statewide expertise, familiarity with groundwater supported wetlands in central coastal California and verifiable experience conducting functional analyses of such wetlands. Recommendations for remedial actions will be submitted by the groundwater specialist to the USACE for review and written approval prior to implementation. If wetland failures are determined to be directly related to the realignment of Froom Creek and development within the Froom Creek Specific Plan area, possible remedial actions would include, at minimum, the following:*

- *Engineering controls include biotechnical erosion controls such as the installation of willow wattles and brush mattressing and addition of native cobble to reinforce the low flow berm separating the creek channel from the wetland area to help contain flows into the wetland area.*
- *If vegetation establishment is taking longer than expected, remedial measures such as re-seeding bare soils, replanting areas of mortality, and increased maintenance and monitoring may be prescribed.*
- *If there is significant evidence of scouring, collapse, or filling of the overflow bank between the realigned low-*

flow Froom Creek channel and the Calle Joaquin wetlands, a registered professional engineer shall re-evaluate bank type, size, and slope and recommend a solution, such as augmentation or replacement.

- *If there is excessive ponding (spatial or temporal), a registered professional engineer shall assess access to and capacity of existing drainage outlets and recommend a solution, such as augmentation or replacement if necessary.*
- *If salt efflorescence is observed and specific conductance in the wetland is greater than baseline conditions, a registered professional engineer shall re-evaluate the bank type, slope, size, and conveyance between the realigned Froom Creek low-flow channel and the Calle Joaquin wetlands to increase the frequency of salt flushing, such as altering surface flows to more frequently overflow to the wetland area.*

viii. *~~Cwetland health and biological integrity Long-Term Monitoringeliminate all or a substantial portion of the wetland habitat or result in shall indicate an adverse impact to w~~If through monitoring it is determined that the Project does not adversely impact the Calle Joaquin wetland areas (as defined ~~in subsection vi, above~~), the Applicant shall provide documentation annually (at minimum) to the City, for review and approval by the City's Natural Resources Manager, that no significant signs of hydrological interruption, erosion (including bank failure), or sedimentation have occurred, that the wetland is sustained in biological integrity and health with existing hydrologic inputs, and that channel migration has not adversely affected existing wetland features adjacent to Calle Joaquin.*

ix. *If through monitoring it is determined that the Project adversely impacts the Calle Joaquin wetland area, recommendations shall be made for modifications to the Project design in consultation with the City and appropriate regulatory agencies for review*

and concurrence, as described in subsection viii above. ~~,~~The annual reports would detail the issue or problem area and proposed remedial actions.

x. If through monitoring it is determined that the Calle Joaquin wetland condition and function cannot be remediated with implementation of all feasible remedial actions and recommendations identified through long-term monitoring and as described in subsection vii above and the Long-Term Wetland Monitoring Plan, then adversely affected wetland areas shall be delineated and mitigated on- or offsite at a minimum 3:1 ratio unless otherwise directed by state and federal agencies, including but not limited to the CDFW, RWQCB, NMFS, and USFWS (as appropriate), consistent with subsection (c) above.

xi. Funding for long-term wetland monitoring, adaptive management, and any recommended contingency measures shall be the responsibility of the Applicant. Payment of a bond by the Applicant would be required to ensure the availability of adequate funds to ensure successful implementation and completion of the Long-Term Wetland Monitoring Plan throughout build-out under the Specific Plan.

~~In the event remediation does not maintain the wetlands condition and function, off-site mitigation would be required at a minimum 2:1 ratio.~~

~~d) at a minimum 2:1 ratio and require mitigation of at least 10.24 acres. For the purpose of this mitigation, the area of the Calle Joaquin wetlands potentially affected by the Project include those wetlands northwest of Calle Joaquin within the Specific Plan area and southeast of the proposed Froom Creek low-flow channel.~~

e) Habitat revegetation or creation shall occur in the fall or winter no more than 1 year following habitat disturbance. Revegetation shall be monitored monthly for 7 years with a goal of at least 70-percent survival of container plants and 70-percent relative cover by vegetation type at the end of the 7-year period. Irrigation shall be

provided during this period or until otherwise determined necessary by the Applicant's Environmental Coordinator.

f) Riparian vegetation along Froom Creek shall be maintained in perpetuity to the satisfaction of the City by the Applicant or a City-approved designee. Froom Creek conditions shall be monitored annually following winter storm seasons to assess damage to riparian vegetation and need for maintenance restoration. Monitoring and maintenance of riparian vegetation conditions shall be conducted consistent with the requirements of the Habitat Mitigation and Monitoring Plan outlined in MM BIO-3.

Plan Requirements and Timing. All requirements shall be included in the Biological Mitigation and Monitoring Plan to be submitted to the City for review and approval prior to issuance of grading permits and recordation of the final VTM.

Monitoring. The City shall review and approve the Biological Mitigation and Monitoring Plan and HMMP (including the Long-Term Wetland Monitoring Plan) to ensure that all BMPs and appropriate mitigation measures have been included. The Environmental Coordinator shall ensure compliance during habitat compensation and/or restoration activities through routine monitoring, inspection, and reporting of restoration activities. The City shall ensure compliance with requirements for the Biological Mitigation and Monitoring Plan and Long-Term Wetland Monitoring Plan through receipt of monitoring reports and site inspections.

MM BIO-6 The Biological Mitigation and Monitoring Plan shall detail timing and implementation of required habitat restoration and shall be submitted to the City's Natural Resources Manager for review and approval, including requirements for consultation with CDFW, NMFS, and USACE as needed. A copy of the final plan shall be submitted to the City for review and approval. The plan shall be implemented by the Project Applicant, under supervision by the City and the Applicant's Environmental Coordinator, and shall:

a) Describe replacement of sensitive natural community habitats removed, lost, or adversely impacted by the Project, including a list

of the soil, plants, and other materials that will be necessary for successful habitat restoration/ replacement, and a description of planting methods, location, spacing, erosion protection, and irrigation measures that will be needed. Restoration and habitat enhancement shall be limited to use of appropriate native species. Habitat restoration or enhancement areas shall be designed to facilitate establishment of appropriate native plants such as willows, cottonwoods, bunchgrass, and rushes.

b) *Habitat restoration or enhancement areas shall be established within the Project boundaries, adjacent to and contiguous with existing habitats to the maximum extent possible.*

c) *Habitat restoration or enhancement sites shall be placed within existing or additional necessary deed-restricted area(s) and shall be maintained and monitored for a minimum of 7 years. If sufficient onsite mitigation area is not practicable, an offsite mitigation plan shall be prepared as part of the Biological Mitigation and Monitoring Plan and approved by permitting agencies.*

d) *The Biological Mitigation and Monitoring Plan shall identify appropriate restoration and enhancement activities to compensate for impacts to creek, wetland, native bunch grass and riparian habitat, including a detailed planting plan and maintenance plans using locally obtained native species, and shall include habitat enhancement to support native wildlife and plant species.*

e) *A weed management plan and weed identification list shall be included in the Biological Mitigation and Monitoring Plan.*

f) *Habitat restoration or enhancement areas shall be maintained weekly for the first three years after Project completion and quarterly thereafter. Maintenance shall include replacement of unsuccessful planted specimens and eradication of noxious weeds found on California Department of Food and Agriculture (CDFA) Lists A and B. Noxious weeds on CDFA List C may be eradicated or otherwise managed.*

g) *Quarterly and annual reports documenting site inspections and site recovery status shall be prepared and sent to the City and appropriate agencies.*

Plan Requirements and Timing. All requirements shall be included on the Biological Mitigation and Monitoring Plan and HMMP to be submitted to the City for review and approval prior to issuance of grading permits and recordation of the final VTM.

Monitoring. The City shall review and approve the Biological Mitigation and Monitoring Plan and HMMP to ensure that all BMPs and appropriate mitigation measures have been included. The Environmental Coordinator shall ensure compliance during habitat compensation and/or restoration activities. The City shall ensure compliance with requirements for the Biological Mitigation and Monitoring Plan and HMMP through receipt of monitoring reports and site inspections.

MM BIO-7 *Utility line installation shall be timed so that sensitive habitat areas are not disturbed (e.g., prior to the development and restoration of the new Froom Creek alignment, after removal of riparian areas along the LOVR Ditch due to LOVR widening). In the event a ~~All~~ utility line~~s~~ is proposed to be installed across the existing or realigned Froom Creek, or the sensitive riparian areas along the LOVR Ditch, while these features are in their natural or restored condition, installation ~~from LOVR to the Project site~~ shall be ~~installed~~ via horizontal directional drilling (HDD) to avoid impacts to sensitive habitats. Prior to installation of utility lines, a site-specific geotechnical investigation and frac-out clean-up plan shall be completed in areas proposed for HDD. The geotechnical investigation shall provide recommendations for avoidance of frac-outs and/or other HDD related impacts and to determine appropriate HDD methods (i.e., appropriate drilling mud mixtures for specific types of sediments). The investigation shall include results from at least three borings, a geologic cross-section, a discussion of drilling conditions, and frac-out clean-up plan. The frac-out clean-up plan shall identify methods for minimizing potential for frac-outs and addressing any necessary clean-up or remediation in case of a frac-out. The boring operation would be stopped immediately if a frac-out occurs and steps would be taken to contain and minimize the effects of any spill of*

drilling mud. The Applicant shall comply with all recommendations of the geotechnical investigation.

Plan Requirements and Timing. Geotechnical investigations shall be conducted, and a report of findings submitted to the City for approval. The findings shall be incorporated into the final Utilities Plan prior to issuance of grading permits and recordation of the final VTM.

Monitoring. The City shall review the findings of the geotechnical investigations and final Utilities Plan and confirm compliance through review of grading and improvement plans.

MM BIO-8 *The Applicant shall submit a Froom Creek restoration plan that identifies measures for securing the proposed low-flow channel berm along the stretch of Froom Creek proposed adjacent to the Calle Joaquin wetlands to protect the bank from erosion and prevent migration of the Froom Creek channel into these wetlands. Measures for securing the bank may include a mix of natural and biotechnical measures capable of prevention erosion based on the anticipated erosive velocity of the creek under 100-year storm conditions.*

Plan Requirements and Timing. The Applicant shall submit a Froom Creek restoration plan for review and approval by the City, which incorporates these requirements in addition to all requirements identified by state and federal resource agencies. The proposed bank stabilization measures shall be depicted on final plans prior to issuance of grading permits and recordation of the final VTM.

Monitoring. The City shall review the final plans, and shall inspect the Project site during construction to confirm installation of proposed stabilization measures.

Residual Impacts

Implementation of MM BIO-1 through MM BIO-8 would reduce impacts to sensitive vegetation communities and bring the Project into partial compliance with relevant goals and policies of the City General Plan COSE, including COSE Policy 7.5.4, *Preservation of Grassland Communities and Other Habitat Types*. Implementation of these measures would reduce potential impacts to sensitive riparian and wetland habitats within the Lower

Area (e.g., LOVR ditch and Calle Joaquin wetlands) to *less than significant with mitigation.* However, with respect to wetlands in the Upper Terrace, replacing the unusual seep-fed wetlands present along impacted segments of Drainages 1, 2, and 3 would be challenging. Due to the lack of detailed plans and setbacks for these minor drainages at this stage in the process, these wetlands could be directly impacted through culvert-headwall installation and sedimentation from grading and development, and the ability to reestablish and maintain rare plant species present within these areas is unknown. Because the Project would directly and indirectly affect sensitive wetlands which support rare plant species and for which successful restoration and mitigation is not known to be possible, impacts would be *significant and unavoidable*.

Further, for impacts to sensitive upland habitats, implementation of these mitigation measures would result in only partial compliance with COSE Policies 7.3.1, 7.3.2, 7.5.4, and 8.3.1. ~~because the Project would~~ Wildfire fuel management and defensible space requirements would be balanced with biological resource protection in mandatory buffer zones, as further analyzed in Section 3.7, *Hazards, Hazardous Materials, and Wildfire*. The City retains the ability to adjust wildfire buffer requirements to implement appropriate fuel modification methods as new information is learned, as well as seasonally-timed grazing and mowing in grasslands and selective thinning of tree/shrub habitats to meet fire clearance requirements. ~~not completely avoid disturbance of natural and open space areas designated under the Project due to mandatory fire clearance requirements.~~ Further, MM HAZ-2 would require preparation of a Community Fire Protection Plan and use of a City-qualified biologist to identify and preserve the integrity of vegetation and habitat surrounding proposed development to the maximum extent feasible, also reducing impacts. However, it may not be feasible to completely avoid disturbance of natural and open space areas designated under the Project that contain sensitive biological resources due to mandatory fire clearance requirements. ~~However, t~~The proximity of new development, particularly within the Upper Terrace, may~~would~~ limit the effectiveness of any proposed measures for mitigating impacts to sensitive upland habitats, particularly the *Nassella pulchra* Herbaceous Alliance. It is reasonable to assume that the limited setbacks between proposed development and known sensitive biological resources would not be sufficient to avoid ongoing indirect impacts associated with continued potential for disturbance from human activities and fire management requirements. Therefore, impacts to sensitive upland habitats are conservatively considered *significant and unavoidable.*

The Project would also result in the direct loss of serpentine bunchgrass grasslands corresponding to the *Nassella pulchra* Herbaceous Alliance through Project development

or through removal of vegetation as a result of implementation of defensible space requirements. The difficulty in successfully establishing or even restoring a serpentine bunchgrass grassland community is well documented. As such, successful compensatory replacement and restoration of the *Nassella Pulchra* Herbaceous Alliance of equal or greater quality than that which exists onsite is considered unlikely, resulting in the inability to successfully mitigate associated impacts. Therefore, impacts to these sensitive natural communities from Project implementation would be *significant and unavoidable*.

Impact BIO-2 Project implementation would have substantial direct and indirect adverse impacts on candidate, sensitive, or special-status species that are known to occur or have the potential to occur on the Project site (Significant and Unavoidable).

Potentially suitable habitat exists within the Project site for several designated special-status species, particularly in serpentine outcrops, Froom Creek, and seeps, springs, and drainages within the Upper Terrace, as well as within the adjacent Irish Hills Natural Reserve (Table 3.4-2 and Table 3.4-3). The Upper Terrace supports a rich assemblage of sensitive habitats and 12 documented occurrences of special-status plant species, most in close proximity to or within the planned Villaggio development/disturbance footprint. Disturbance, alteration, or removal of these habitats would result in the loss or damage (take) of sensitive wildlife and plant species. Ground disturbance may result in the direct take of special-status plant and animal species that may reside, forage, or rest within the Project site. Additionally, as more mobile wildlife species (e.g., avian species) would be forced to move into adjacent areas in the vicinity (e.g., Irish Hills), competition would increase for available resources in those areas. This could result in the loss of additional wildlife species outside of the Project site, including sensitive species that may not be able to survive with increased competition.

Further, habitat for sensitive species adjacent to the Project site within the Irish Hills Natural Reserve could be exposed to construction-related noise, which could result in the disruption of foraging, nesting, and reproductive activities. Indirect impacts to sensitive bird and bat species due to construction-related noise, light, and human presence may occur throughout the duration of construction activities (i.e., approximately 5 years), resulting in abandoned nests or breeding colonies. Potential indirect impacts to wildlife utilizing nearby habitats could also result from loss of access to water from the spring seep-fed wetlands, increases in human activity, the increased threat of road-kill by vehicle and machinery traffic both on- and offsite due to emigration of wildlife to nearby habitat, deposition of

trash and debris, potential exposure to pollutants and hazardous materials (refer to Impact HYD-1), and increased soil erosion that may contaminate aquatic environments onsite and downstream. Movement of sensitive wildlife through the site would also be temporarily and permanently impeded by development of the Project (refer to Impact BIO-4).

Special-Status Plants

The Upper Terrace supports 14 special-status plant species that have been observed onsite and has the potential to support several other species by the time the Project is under construction given its location at the base of the Irish Hills. These species occur within the native serpentine bunchgrass grassland habitat, on serpentine rock outcrops, and within coastal sage scrub and wetland habitats, all of which are within or in close proximity to proposed development footprints. Proposed development in the Upper Terrace would directly displace existing and potential habitat for three known species and would further indirectly impact special-status plants over the long-term as discussed below.

Chorro Creek Bog Thistle. The Project design attempts to precisely site roads and structures a minimum of 50 feet from mapped locations of sensitive plants, but proposes development in very close proximity to known occurrences of sensitive plants and habitat areas that contain features that would support them. Development of facilities and infrastructure in the Upper Terrace under the FRSP has been planned in an attempt to avoid known occurrences of Chorro Creek bog thistle located along Drainage 2. However, project grading and construction can have impacts outside of planned building footprints given the specific hydrologic conditions that support this species, and plant communities are mobile, expanding and contracting their distribution in response to changing weather and site conditions. Based on the presence of habitat potentially suitable to support this species, the Project may result in impacts to the Chorro Creek bog thistle due to direct removal or loss of individual specimens during construction of four (4) culvert headwalls across Drainages 1, 2, and 3 or indirectly through site preparation (e.g., grading) and development of new structures, landscaping and paved surfaces in the Upper Terrace. Development within the Upper Terrace would be sited in very close proximity to known mapped populations of Chorro Creek bog thistle, with setbacks of new buildings, roads and driveways as little as 10 feet from seeps, springs, and drainages that are capable of supporting this species, and that provide the habitat conditions (hydrology) that support known occurrences.

Operation of the Project also has potential to result in adverse impacts to the Chorro Creek bog thistle or its habitat through increased human activity such as landscape maintenance, herbicide use, polluted runoff, trampling, or clearing of vegetation and maintenance of

required wildfire buffer in this area. For instance, known populations of Chorro Creek bog thistle along Drainage 2 occur entirely within the potential anticipated 100-foot wildfire vegetation maintenance area. Consequently, establishment and maintenance of this required setback would likely result in the harm to or loss of individual specimens or loss of entire populations over the life of the Project.

As such, it is reasonable to assume that Project implementation would potentially result in take of Chorro Creek bog thistle either through direct loss or through habitat disturbance. Therefore, impacts to this species are considered *potentially significant*.

Blochman's Dudleya. The Blochman's dudleya is known to occur on rocky serpentine outcrops, chaparral, coastal scrub, and grasslands, all of which exist primarily within the Upper Terrace portion of the Project site. Development of the Upper Terrace could potentially eliminate known populations of this plant species or suitable habitat during construction. Further, after occupancy, increased human activity such as landscape maintenance, herbicide use, polluted runoff, trampling, or maintenance of required wildfire buffers would result in removal of additional individuals and suitable habitat. Attempting to site multiple large new buildings and supporting infrastructure within and immediately adjacent to known populations of this species would lead to both direct and indirect impacts over the long term. Therefore, potential impacts to this species would be *potentially significant*.

Congdon's Tarplant. This species was identified within the northeastern portion of the Project site, adjacent to the Irish Hills Plaza during fieldwork conducted to establish the environmental baseline. Construction of the Madonna Froom Ranch development would result in the direct removal of individuals and loss of suitable habitat in this area. Impacts are considered *potentially significant.*

Other Special-Status Plant Species. As noted above, a total of 12 special-status plant species are known to occur within the Project site, primarily within the Upper Terrace within habitats such as rocky serpentine outcrops and native serpentine bunchgrass grassland. Given the rich habitat area and direct connections to the Irish Hills, additional species~~, such as the mouse-gray dudleya~~ have a moderate to high potential to occur (see Table 3.4-2 and Appendix E). The Project would have potential to result in the direct removal of individuals or the loss of suitable habitat for these species. Further loss of individuals and suitable habitat on- and offsite would occur as a result of vegetation clearance and maintenance of the required wildfire buffer areas. Given the quality of

habitat present onsite and the high potential for species to occur within the area of proposed development, impacts are considered *potentially significant.*

Special-Status Animals (Species of Special Concern, Special Animal, Watch List)

American Badger. Direct impacts to this species may occur due to loss or interruption of migratory corridors and loss of potential foraging habitat. Construction within the Project site may also result in harassment or injury if badgers are foraging within the Project area during implementation. Impacts to this species are considered *potentially significant*.

Cooper's Hawk. Direct impacts to this avian species may occur due to direct loss of nesting habitat through loss of coast like oak/California bay woodland and removal or disturbance of trees that may contain active nests. Construction within the Project site may also result in indirect impacts should this species be present in or near areas of disturbance at the time of construction. Operation of the Project may also result in indirect impacts from disturbance of nesting individuals as a result of increased human activity adjacent to suitable nesting and foraging habitat. Impacts to this species are considered *potentially significant*.

White-tailed Kite. Direct impacts to this species may occur due to direct loss of high-quality foraging habitat and removal or disturbance of trees that may contain active nests within riparian areas. Construction within the Project site may also result in indirect impacts should this species be present in or near areas of disturbance at the time of construction. Operation of the Project may also result in indirect impacts from disturbance of nesting individuals as a result of increased human activity adjacent to suitable nesting and foraging habitat. Impacts to this species are considered *potentially significant*.

California Horned Lark. Potential direct impacts to California horned lark within the Project site include loss of nesting habitat and harassment or injury if they are found nesting within the Project area during implementation. Operation of the Project may also result in indirect impacts from disturbance of nesting individuals as a result of increased human activity adjacent to grasslands in the elevated slopes of the Project site. Impacts to this species are considered *potentially significant*.

Hoary Bat. Potential direct impacts to hoary bats within the Project site include removal of roosting habitat in the Upper Terrace and harassment or injury if they are foraging within the Project area during implementation. Increased human activity from operation of the Project in the vicinity of suitable roosting sites may also indirectly affect this species. Impacts to this species are considered *potentially significant*.

Loggerhead Shrike. Direct impacts to this species may occur, primarily in the Upper Terrace, due to removal of high-quality grasslands, trees, and shrubs that may contain active nests. Construction within the Project site may result in indirect impacts should this species be present in the vicinity of areas of disturbance at the time of construction. Operation of the Project may also result in indirect impacts from disturbance of nesting individuals as a result of increased human activity adjacent to suitable nesting and foraging habitat. Impacts to this species are considered *potentially significant*.

Pallid Bat. Potential direct impacts to pallid bats within the Project site include removal of roosting habitat and harassment or injury if they are foraging within the Project area during implementation. Increased human activity from operation of the Project in the vicinity of suitable roosting and foraging sites may also indirectly affect this species. Impacts to this species are considered *potentially significant*.

San Diego Woodrat. The proposed Project would not result in development of areas of suitable habitat or known nesting areas located in the southwestern portions of the site within the Upper Terrace, adjacent to the Irish Hills Natural Reserve. Therefore, the Project would have *no impact* on this species.

Townsend's Big-eared Bat. Potential direct impacts to Townsend's big-eared bats within the Project site include removal of roosting habitat and harassment or injury if they are foraging within the Project area during implementation. Increased human activity from operation of the Project in the vicinity of suitable roosting sites may also indirectly affect this species. Impacts to this species are considered *potentially significant*.

Tri-colored Blackbird. Potential direct impacts to tri-colored blackbirds within the Project site include disturbance or removal of foraging habitat, particularly during realignment of Froom Creek, and harassment or injury if they are foraging within the Project area during implementation. Direct impacts may also occur should suitable nesting habitat expand beyond the extent initially observed by KMA in 2015 by the time of initiating construction activities. Operation of the Project may also result in indirect impacts from disturbance of nesting individuals as a result of increased human activity adjacent to suitable nesting habitat. Impacts to this species are considered *potentially significant*.

Western Mastiff Bat. Potential direct impacts to western mastiff bats within the Project site include removal of roosting habitat and harassment or injury if they are foraging within the Project area during implementation. Increased human activity from operation of the Project

in the vicinity of suitable roosting and foraging sites may also indirectly affect this species. Impacts to this species are considered *potentially significant*.

Western Red Bat. Potential direct impacts to western red bats within the Project site include removal of roosting habitat and harassment or injury if they are foraging within the Project area during implementation. Increased human activity from operation of the Project in the vicinity of suitable roosting and foraging sites may also indirectly affect this species. Impacts to this species are considered *potentially significant*.

Yuma Myotis. Potential direct impacts to Yuma myotis within the Project site include removal of roosting habitat and harassment or injury if they are foraging within the Project area during implementation. Increased human activity from operation of the Project in the vicinity of suitable roosting and foraging sites may also indirectly affect this species. Impacts to this species are considered *potentially significant*.

Special-Status Animals (Protected and Federally/State-Listed Species)

California Red-legged Frog. Project development would entail significant direct and/or indirect changes to the riparian, drainage, and wetland features within the Project site. Froom Creek would be relocated to a lower elevation on the site and the existing channel would be filled and developed. The wetlands on site would also be subject to changes in hydrology with the relocation of Froom Creek, and may receive additional sedimentation and nutrient loading from runoff during construction and operation. While the California red-legged frog is not known to occur on the Project site, potentially suitable habitat is present and would be subject to Project-related impacts. Potential for impacts to California red-legged frog would increase during normal to wet water years when more suitable habitat is likely to be present within the Project site, and frogs would be more likely to be present. Direct impacts to this species would result from the realignment of Froom Creek and loss of associated riparian habitat, as well as impacts to the Calle Joaquin wetlands and the LOVR ditch. Grading and construction – and resulting sedimentation and siltation of onsite creeks and drainages, wetlands, and downstream water bodies – would also adversely affect individuals and habitat for this federally threatened species. While this species has not been observed onsite, the presence of suitable habitat indicates that individuals may exist onsite now and in the future that may be harmed during Project implementation. However, over the long-term, the proposed Froom Creek channel would be designed with pools and connected channels that could support California red-legged frog habitat, potentially resulting in replacement of existing onsite habitat. Nevertheless,

implementation of the Project would continue to have the potential to directly affect individual specimens. Impacts to this species are considered *potentially significant*.

South-central California Coast Steelhead. Due to physical barriers to movement and lack of suitable migration corridors in the existing Froom Creek, steelhead are not anticipated to occur onsite except possibly during years of high rainfall when flowing water is present. Site development would likely result in short-term, temporary erosion, sedimentation, and siltation onsite, having the potential to adversely affect water quality downstream (e.g., in San Luis Obispo). As discussed in Impact HYD-1, compliance with existing regulations (e.g., City's National Pollutant Discharge Elimination System Phase II Program, Storm Water Management Plan, the SWRCB's Construction General Permit Order 2009-0009-DWQ, and the City's Storm Water Quality Ordinance [Municipal Code Chapter 12.08]) would reduce or avoid impacts to downstream water quality during Project construction.

The proposed Froom Creek channel would be designed with pools and connected channels that could support steelhead migration and spawning. An identified goal of the proposed realignment of Froom Creek is to improve migration and access for steelhead between the upper reaches of Froom Creek, where land-locked populations are known to exist, and the lower reaches within the Project site. Construction could create short-term impacts to steelhead if it occurred during the rainy season, where the Froom Creek channel would be disturbed and reconstructed in its proposed alignment. Installing all components of the realigned creek channel prior to grading and removing the current channel would ensure continuous migration access for steelhead. Therefore, impacts from short-term construction activity would remain *less than significant with mitigation.*

In addition, the long-term resiliency of the proposed migration and access features within the realigned Froom Creek is uncertain, as analyzed in Section 3.8, *Hydrology and Water Quality*. During storms, fast-moving waters in upper reaches of the creek within the Specific Plan area may mobilize boulders within the stream channel or cause bank erosion and sedimentation, altering or eliminating the proposed system of pools over time. Pools may fill with sediment or cobble over time, a naturally occurring process, and the long-term success of this proposed habitat modification remains unclear given the location of this reach of Froom Creek, its existing physical characteristics (i.e., dry wash), and the long-term dynamics of flood flows. However, regardless of these potential issues, the overall changes to the stream channel through addition of pools, boulders, and revegetation would improve habitat conditions for steelhead when compared with existing conditions. Even if the realignment of Froom Creek does not successfully improve ~~were to fail in~~

~~improving~~ the Froom Creek corridor as a fishery or migration corridor, the Project would not result in adverse impacts to steelhead habitat when compared to the baseline conditions for Froom Creek. Therefore, with implementation of the proposed Project – and specifically the realignment of Froom Creek within the Project site – existing steelhead habitat would not be eliminated or damaged, and has the potential to be improved. Therefore, long-term impacts would be *less than significant and potentially beneficial*.

Mitigation Measures

MM HAZ-2 shall apply.

MM BIO-1 shall apply.

MM BIO-9 *Construction and grading of the realigned portion of Froom Creek, including planting of riparian vegetation, watering, and bank stabilization, shall be conducted prior to removal of the existing creek segment to ensure a habitat for special-status species within the creek is maintained through the Project site with no interruption during construction. Project phasing shall be adjusted as needed to accommodate this sequence of construction activities.*

Plan Requirements and Timing. The Applicant shall demonstrate phasing and creek restoration within the final VTM, and the Biological Mitigation and Monitoring Plan. The Applicant shall submit the plan to the City for review and approval prior to issuance of grading permits and recordation of the final VTM.

Monitoring. The City shall review the Biological Mitigation and Monitoring Plan, and final VTM for compliance. The Applicant's Environmental Coordinator shall monitor creek realignment activities to ensure compliance with this mitigation measure.

MM BIO-10 *Chorro Creek Bog Thistle and Special-Status Plant Management. Prior to issuance of grading and building permits, the Applicant shall submit or fund a site survey for special-status plants, including Chorro Creek bog thistle, and:*

1. All individual locations of special-status species, including Chorro Creek bog thistle, and suitable habitat areas shall be mapped using GPS coordinates. No construction activities or disturbance shall occur

within 50 feet of mapped special-status species, including Chorro Creek bog thistle, or suitable habitat areas. This setback shall be delineated and maintained with construction fencing and clear signage for the duration of grading and construction.

~~*1. If the site survey results identify Chorro Creek bog thistle that may be disturbed or lost from Project construction, the Project shall be redesigned to ensure a minimum 50 foot buffer from mapped Chorro Creek bog thistle occurrences.*~~

2. Development adjacent to Drainages 1, 2, and 3 shall be set back a minimum of 50 feet from the top of the bank of these drainages and the edge of delineated associated wetlands.

3. Drainages 1, 2, and 3 and associated wetlands shall be fenced a minimum of 50 feet from the top of the bank or edge of delineated wetland during construction. The Applicant shall ensure and demonstrate to the City through frequent reporting requirements approved by the City that these areas are managed and maintained in perpetuity to maintain wetland and Chorro Creek bog thistle habitat values to the extent feasible.

~~*3.*~~*4. If the site survey results identify special-status plant species, including Chorro Creek bog thistle, or suitable habitat that may be disturbed or lost from Project construction, the Project shall be redesigned to ensure a minimum 50-foot buffer from mapped individual occurrences and suitable habitat areas. If buffers cannot be maintained, then consultation with CDFW shall occur to determine appropriate minimization and mitigation measures for impacts to special-status plant species, or in the case of plant species listed pursuant to CESA or the Native Plant Protection Act, to determine if take can be avoided. If take cannot be avoided, take authorization prior to any ground-disturbing activities may be warranted. Take authorization would occur through issuance of an ITP by CDFW, pursuant to Fish and Game Code section 2081(b).*

Plan Requirements and Timing. All requirements shall be included on the Biological Mitigation and Monitoring Plan to be submitted to the City for

review and approval prior to issuance of grading permits and recordation of the final VTM.

Monitoring. The City shall review and approve the Biological Mitigation and Monitoring Plan and HMMP to ensure that all BMPs and appropriate mitigation measures have been included. The City shall ensure compliance with requirements for the Biological Mitigation and Monitoring Plan. The Applicant's Environmental Coordinator shall also ensure compliance during habitat compensation and/or restoration activities.

MM BIO-11 *The Biological Mitigation and Monitoring Plan shall address special-status wildlife species management. Grading and construction activities shall avoid the rainy season (typically October 15 to April 15) to the extent practicable, particularly within 50 feet of the existing and proposed Froom Creek channel, and other existing or proposed drainage features, riparian or wetland habitat, and any suitable nesting sites as determined by the City-approved biologist. Injury, mortality to, or significant disturbance of onsite sensitive species, including the California red-legged frog, south-central California coast steelhead, and white-tailed kite, shall be avoided. The plan shall include the following measures: pre-construction surveys; worker awareness; cessation of work in occupied areas if individuals are identified; relocation (if necessary) of frogs and steelhead from the work area by a professional biologist authorized by the USFWS and/or CDFW; and monitoring of construction activities within the vicinity of sensitive habitats by a qualified biologist during construction, consistent with MM BIO-2. Necessary permits shall be obtained from the state (CDFW) and federal (USACE and USFWS) regulatory agencies with jurisdiction and/or permitting authority over a portion of the Project. Any other sensitive species observed during the pre-construction surveys shall be relocated by the qualified biologist into the nearest suitable habitat outside the disturbance area as determined in consultation with the appropriate jurisdictional resource agency.*

Plan Requirements and Timing. All requirements shall be included on the Biological Mitigation and Monitoring Plan to be submitted to the City for review and approval prior to issuance of grading permits and recordation of the final VTM.

Monitoring. The City shall review and approve the Biological Mitigation and Monitoring Plan and HMMP to ensure that all BMPs and appropriate mitigation measures have been included. The City shall ensure compliance with requirements in the Biological Mitigation and Monitoring Plan. The Applicant's Environmental Coordinator shall also ensure compliance during habitat compensation and/or restoration activities.

MM BIO-12 The Biological Mitigation and Monitoring Plan shall address the habitation and movement of special-status wildlife ~~animal~~ species, as follows:

1. *Migratory and Nesting/Burrowing Bird Management. Grading and construction activities shall avoid the breeding season (typically from February 15 to August 15) to the extent practicable, particularly within 50 feet of riparian or wetland habitat and mature trees and within onsite grasslands. If Project activities must be conducted during this period and within the vicinity of riparian or wetland habitat, grasslands, and/or mature trees, pre-construction nesting/burrowing bird surveys shall take place no more than one week prior to habitat disturbance associated with each phase; if active nests or burrows are located during these surveys, the following measures shall be implemented:*

    a. *Construction activities within 50 feet of active nests shall be restricted until chicks have fledged, unless the nest belongs to a raptor or burrowing owl, in which case a minimum 500-foot activity restriction buffer shall be observed.*

    b. *Construction shall be limited to daylight hours (7:00 AM to 7:00 PM or sunset, whichever is sooner).*

    c. *A pre-construction survey report shall be submitted to the City immediately upon completion of the survey. The report shall detail appropriate fencing or flagging of the buffer zone and make recommendations on additional monitoring requirements. A map of the Project site and nest locations shall be included with the report. If any sensitive or special-status species are observed during pre-construction surveys, the Project biologist shall coordinate with appropriate resource agencies to determine appropriate procedure for handling or avoidance of the specimen.*

d. The Project biologist conducting the nesting survey shall have the authority to reduce or increase the recommended buffer depending upon site conditions and the species involved. A report of findings and recommendations for bird protection shall be submitted to the City prior to vegetation removal. If sensitive species are observed during pre-construction surveys, the Project biologist shall coordinate with appropriate resource agencies to determine appropriate procedures for handling or avoidance of the specimen.

~~d.~~e. If burrowing owls are found onsite and avoidance is not possible, burrow exclusion shall be conducted by City-approved qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. CDFW recommends replacement of occupied burrows with artificial burrows at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) To avoid recolonization, ongoing surveillance shall be provided by the City-approved Project biologists throughout Project construction at a rate that is sufficient to detect burrowing owls if they return.

2. *Bat Colony Management. Prior to removal of any trees over 20 inches diameter-at-breast-height (DBH) or demolition/relocation of existing onsite structures, a survey shall be conducted by a City and CDFW-approved biologist to determine if any tree or structure proposed for removal, trimming, demolition, or relocation harbors sensitive bat species or maternal bat colonies. Maternal bat colonies shall not be disturbed, and grading and construction activities shall avoid the bat breeding season to the extent feasible. If disturbance of structures must occur during the bat breeding season, buildings must be inspected and deemed clear of bat colonies/roosts within 7 days of demolition and an appropriately trained and approved biologist must conduct a daily site-clearance during demolition. If bats are roosting in a structure or tree in the Project site during the daytime but are not part of an active maternity colony, then exclusion measures shall be utilized and must include one-way valves that allow bats to leave but are designed so that the bats may not re-enter the structure. For each occupied roost*

removed, one bat box shall be installed in similar habitat as determined by the Project biologist and shall have similar cavities or crevices to those which are removed, including access, ventilation, dimensions, height above ground, and thermal conditions. If a bat colony would be eliminated from the Project site, appropriate alternate bat habitat shall be installed within the Project site. To the extent practicable, alternate bat house installation shall occur near onsite drainages.

Plan Requirements and Timing. The Biological Mitigation and Monitoring Plan shall include a management plan for migrating and nesting birds and bat colonies and shall be submitted for review and approval by the City prior to issuance of grading and construction permits and recordation of the final VTM. Construction shall be conducted between August 16 and February 14 unless pre-construction surveys are completed. Reports summarizing pre-construction species surveys (i.e., nesting, bat surveys, etc.) shall be submitted to the City within 10 days of survey completion. Construction work shall not commence until after the completion of surveys and City review of corresponding reports. Any required permits shall be obtained from appropriate state and federal agencies prior to issuance of grading and construction permits and recordation of the final VTM.

Monitoring. The City shall review and approve the Biological Mitigation and Monitoring Plan and HMMP to ensure that appropriate requirements have been included to address potential impacts to bird and bat species. The City shall ensure compliance with requirements for the Biological Mitigation and Monitoring Plan. The Applicant's Environmental Coordinator shall also ensure compliance during habitat compensation and/or restoration activities.

Residual Impacts

Implementation of the Project would result in development of land within and adjacent to populations of at least 14 known sensitive plant species. Mitigation requirements, including pre-construction surveys and relocation of animal species, would minimize potential impacts to the maximum extent feasible, but based on the Project's footprint relative to the locations of known occurrences and the extent of biological habitats capable of supporting special status species, reasonable and feasible mitigation measures would not ensure that

all damage to these resources would be avoided or reduced to less than significant during Project construction and long-term operation. MM BIO-1 and MM BIO-9 through MM BIO-12 would reduce impacts to listed, candidate, or special-status wildlife species and partially assure compliance with COSE Policies 7.3.1, *Protect Listed Species*, and 7.3.2, *Species of Local Concern* due to continued loss of protected species and species of local concern which are observed onsite, including, but not limited to: Chorro Creek bog thistle, Blochman's dudleya, Congdon's tarplant, San Luis mariposa lily, and Brewer's spineflower. Implementation of MM HAZ-2 requiring preparation of a Community Fire Protection Plan and use of a City-qualified biologist and Applicant's Environmental Coordinator to identify and preserve the integrity of vegetation and habitat, as well as the maximum feasible avoidance of designated special-status species, would also reduce impacts. Consistency with existing regulations pertaining to water quality would ensure impacts to south-central California coast steelhead and aquatic habitat downstream of the Project site resulting from potential discharge of pollutants or increased erosion and sedimentation would be reduced to *less than significant* (see Impact HYD-1).

While required mitigation would partially reduce impacts to special-status plants, Project development is proposed in such proximity to individual special-status plants and high-quality habitat for special-status species that complete avoidance of impacts to species may not be feasible. For instance, siting of proposed development in the Upper Terrace would not avoid the known extent of individual plant species or assure populations' long-term survival given the proximity of planned development to populations of special-status plant species. In particular, the proximity of Chorro Creek bog thistle within Drainage 2 and species endemic to rocky serpentine outcrops and native serpentine bunchgrass grassland to planned development in the Upper Terrace would expose such populations to adverse impacts. Operation of the Project and ongoing human activity within these areas would also result in long-term degradation, confinement, and isolation of individuals and suitable habitat. Further, mitigation for replacement or relocation of Chorro Creek bog thistle is not well documented, and there little to no scientific literature regarding the successful replacement or restoration of this species. Mitigation of associated impacts on the species is therefore considered infeasible due to inability to complete avoid or replace disturbed individuals. Therefore, impacts to special-status plant species would be *significant and unavoidable.*

Impact BIO-3 Project implementation would have a substantial adverse impact on state and federally protected wetlands (Significant and Unavoidable).

As analyzed in Impact BIO-1, the Project would have potentially significant adverse impacts on the Calle Joaquin wetlands, the LOVR ditch, and the wetlands in Drainages 2 and 3. Project implementation would result in the loss of up to 1.59 acres of CDFW jurisdictional features, 0.3~~2~~8 acre of USACE jurisdictional wetlands, and 0.79 acre of USACE Other Waters (2.7~~6~~ acres total; see Table 3.4-8 and Figure 3.4-2). These losses would occur primarily from construction of LOVR frontage improvements and relocation of the LOVR ditch, which would eliminate ~~up to~~approximately 0.5 acre of wetlands. Based on preliminary site design, much of the wetland area along Calle Joaquin would be preserved; however, ~~an unknown amount of~~ wetland along the outside bank of the realigned creek channel may be directly adversely affected or eliminated during the realignment of Froom Creek due to construction of the realigned creek channel, construction of the low-flow berm, and substantial changes in hydrology and drainage at the site.[11] Based on preliminary design plans, approximately 0.06 acre of the Calle Joaquin wetland would be directly impacted. ~~Removal of the 3.2-acre stormwater detention basin would also eliminate approximately 2.0 acres of wetland. Lastly, a~~As discussed in Impact BIO-1 and Impact TRANS-2, widening of LOVR would also result in secondary impacts to wetlands through disturbance or removal of up to 0.57 acre of wetlands located along LOVR. In total, implementation of the Project has potential to result in the direct loss of up to ~~5.27~~3.33 acres of wetlands (see to Table 3.4-8).

Construction in the Upper Terrace could result in the direct disturbance or temporary fill of Drainages 1, 2, and 3 as a result of movement of construction equipment and material around the site. Construction would involve soil disturbance, equipment, and materials that could cause sedimentation, pollution, or inadvertent fill of adjacent or downstream wetlands. During construction of private roadways in the Upper Terrace, four headwall/culvert road crossings of approximately 30 feet in width would be constructed over Drainages 1, 2, and 3 and would also potentially lead to loss of adjacent and/or downstream wetlands.

[11] Note that this analysis does not account for the potential long-term adverse effects to the quality and extent of the Calle Joaquin wetlands from changes in the hydrologic connectivity of these wetlands with the realigned Froom Creek. Refer to Impact BIO-1 for consideration of associated impacts.

Froom Creek would be realigned to connect hydrologically with the LOVR ditch and the Calle Joaquin wetlands and would result in the construction of a restored and widened creek channel. Based on preliminary designs, it is estimated that the realigned Froom Creek could support up to 2.81 acres of restored wetlands. However, future wetlands within the realigned Froom Creek may ~~would~~ not sufficiently replace the total acreage of wetlands lost during Project implementation. Under CDFW, USFWS, and RWQCB standards, adequate mitigation for direct loss ~~or disturbance~~ of wetland features, ~~either direct permanent loss or the temporary disturbance,~~ commonly requires replacement by a ratio of 3:1, which would mean the Project's loss of ~~5.27~~3.33 acres of jurisdictional wetlands would be mitigated by a minimum of ~~15.81~~9.99 acres of restoration, as determined through the regulatory permitting process. If 2.81 acres of jurisdictional wetland could be restored onsite within the Froom Creek channel and 0.94 acres could be restored within the proposed LOVR ditch (i.e., a total potential of 3.75 acres restored onsite under the Project), the Project would require ~~22.3~~6.24 acres of additional restoration to meet the 3:1 ratio (see Table 3.4-8).

Froom Creek is ~~not currently~~ connected to the Calle Joaquin wetlands during 10- to 25-year storm events. The Project would relocate Froom Creek to flow and flood into the Calle Joaquin wetlands.

Table 3.4-8. Project Impacts to Jurisdictional Features

Feature	Existing Delineated Area Onsite (Acres)	Area Impacted by the Project (Acres)
Wetlands Waters of the U.S.		
Wetland within OHWM	1.43	~~0.32~~ 0.38
Calle Joaquin wetlands[1]	5.81	
Intermittent Streambed within OHWM	2.66	0.79
CDFW Jurisdictional Areas		
Froom Creek and Tributary Channels; LOVR ditch; sensitive riparian habitat	5.41	1.59
Additional Aquatic Resources		
~~Wetland Within 3.2-acre Stormwater detention basin~~	~~2.00~~	~~2.00~~
Secondary Impacts to Wetlands Along LOVR	--[2]	0.57
Total	**9.91[3]**	**~~5.27~~3.33**
Total Necessary Restoration of Direct Impacts (3:1)		~~15.81~~9.99
~~Total Necessary Restoration of Calle Joaquin wetlands (if mandated per long-term monitoring) (~~2~~1:1)~~[4]		~~10.24~~
Maximum Potential Area of Restoration with Realigned Froom Creek		*2.81*
Affected Wetland Area Restored at LOVR ditch ~~(3:1 replacement ratio)~~		*0.94*
Total Potential Restoration Onsite		***3.75***
Necessary Remaining Restoration		*~~22.3~~6.24*

OHWM = ordinary high-water mark

[1] This analysis does not account for the potential long-term adverse effects to the quality and extent of the Calle Joaquin wetlands from changes in the hydrologic connectivity of these wetlands with the realigned Froom Creek. See Impact BIO-1.

[2] Secondary impacts to wetlands as a result of implementation of transportation mitigation consist of waters of the U.S. and CDFW jurisdictional areas. As such, the existing delineated area of these wetlands subject to secondary impacts of the Project are already reflected in the existing delineated area of those federal and state features.

[3] Total acreage of onsite wetland includes some overlap of USACE, RWQCB, and CDFW jurisdictional features.

[4] Refer to Impact BIO-1 for discussion of potential indirect impacts to the Calle Joaquin wetlands.

As discussed above, the Project includes realignment and restoration of Froom Creek which may mitigate some of these losses of wetlands and other jurisdictional features. However, the Specific Plan does not provide replacement, monitoring, performance standards, or policies for restoration of wetlands onsite. Consequently, development under the Project may not provide reliable or adequate mitigation for the direct net loss of at least ~~5.27~~3.33 acres of jurisdictional wetlands. Further, construction and operation of proposed development in the Upper Terrace may result in the direct disturbance, pollution, temporary fill, or loss of an unknown amount of adjacent or downstream wetlands and jurisdictional features located along Drainages 1, 2, and 3. These drainages and associated wetland habitat would also be subject to long-term degradation due to the proximity of new buildings, roads, driveways, and associated disturbance from human activity. Therefore, wetland impacts are considered *potentially significant*.

Further, as discussed under Impact BIO-1 above, the Project would include installation of at least three utility lines beneath the realigned Froom Creek and existing Calle Joaquin

wetlands to connect utilities on site with existing infrastructure along LOVR. Installation of these utilities may result in temporary adverse effects to the quality of waters or habitat under the jurisdiction of CDFW and/or USACE. Installation may also adversely affect waters downstream as a result of introduction of sediment runoff, siltation, and accidental spillage of fuel and lubricants.

In addition to the physical loss and disturbance of existing wetlands, realignment of Froom Creek would substantially alter onsite hydrology and drainage with potential to change the characteristics and dynamics of several wetlands. While it is the intention of the Project to maintain or improve wetland habitat onsite, as discussed in Impact BIO-1, realignment of Froom Creek has potential to affect the 5.81-acre Calle Joaquin wetlands by changing the frequency and quantity of water supporting the wetlands, increasing potential for migration of the Froom Creek corridor through these wetlands, increasing potential for sedimentation of the wetlands, and altering the effects from severe storm and post-fire flood conditions. Impacts of the Project on these jurisdictional wetlands are therefore considered *potentially significant* (refer to Impact BIO-1 for detailed discussion of potential impacts to the Calle Joaquin wetlands).

The Specific Plan includes several goals and policies pertaining to the protection of onsite wetlands and enhancement of Froom Creek and adjacent habitat. These goals, policies and programs, including Program 3.2.2b, Program 3.2.2e, and Policy 3.2.3, are provided to ensure Project development complies with the goals and policies of the City General Plan COSE. Nevertheless, the alteration of Project site hydrology would create potential for permanent impacts to jurisdictional wetland features or other waters, which would be *potentially significant*.

Mitigation Measures

MM BIO-1 shall apply.

MM BIO-2 shall apply.

MM BIO-4 shall apply.

MM BIO-5 shall apply.

MM BIO-6 shall apply.

MM BIO-7 shall apply.

Residual Impact

Implementation of MM BIO-1, MM BIO-2, and MM BIO-4 through MM BIO-6 would reduce impacts to federal- and state-protected wetland areas through avoidance to the maximum extent feasible, long-term monitoring of wetlands onsite, on- or offsite wetland restoration, and full replacement of equivalent wetland values affected by proposed future development of the site. Implementation of MM BIO-7 would ensure that water quality within Froom Creek, adjacent wetlands, and downstream in San Luis Obispo Creek is not adversely impacted by installation of utility lines by requiring HDD techniques. Installation of utility infrastructure by HDD would reduce potential direct impacts to water quality resulting from erosion and accidental equipment-related petroleum releases. While HDD has potential to cause frac-outs or the inadvertent return of drilling fluids to the ground surface and increases in siltation of surface water and groundwater, adherence to the recommendations of the geotechnical investigation would reduce potential for such events to occur.

With respect to wetlands in the Upper Terrace, replacing the unusual seep-fed wetlands present along impacted segments of Drainages 1, 2, and 3 would be challenging. These wetlands would be directly impacted through culvert-headwall installation and sedimentation from grading and development, and the ability to reestablish and maintain rare plant species present within these areas is unknown. Because the Project would directly and indirectly affect jurisdictional wetlands which support rare plant species and for which restoration and mitigation is not considered completely feasible or likely, impacts would be *significant and unavoidable*.

Impact BIO-4 Project construction and operation would have a substantial adverse impact on the movement of resident or migratory fish or wildlife species or resident and migratory wildlife corridors along Froom Creek, Drainages 1, 2, and 3, and across open grasslands on the Upper Terrace of the Project site (Significant and Unavoidable).

The proposed Project would create a new urban community within the wildland-urban interface along more than one mile of the City's existing Irish Hills Natural Reserve, resulting in disruption of wildlife values on the Project site and within boundary areas of the Reserve itself. The Project site is designated in the City General Plan COSE as both a Wildlife Zone and Wildlife Corridor providing the conditions necessary to allow wildlife

to move safety through urban areas, particularly those on the urban-rural interface of the City's boundary.

Implementation of the Project would disrupt wildlife utilization of and movement across the Project site. Development of the Project would largely isolate the restored Froom Creek channel and the Calle Joaquin wetlands from wildlife in the Irish Hills Natural Reserve, replacing the existing broad open grasslands and ecotones that currently link these habitats with intensive development, confining wildlife movement to a relatively narrow restored creek channel extending between the proposed development and LOVR. While the realigned and restored From Creek corridor may provide enhanced riparian habitat, it would be a relatively urbanized creek corridor – compared to its current more natural state – bordered by relatively intensive development.

The Project would disrupt wildlife utilization of and movement across the Upper Terrace and along Drainages 1, 2, and 3, which link the Project site to the Irish Hills. While substantial open areas would remain on the Upper Terrace, construction of local access roads would disrupt wildlife movement through the primary remaining onsite open space corridor linking the Irish Hills Natural Reserve with Froom Creek. Increased wildlife mortality and disturbance can also be expected due to traffic along this road. Extensive site alteration and construction of new homes, roadways, trails, fences, utility and drainage infrastructure, and increased noise, lighting, and glare, particularly within the Upper Terrace, would also disrupt wildlife movement across the Project site over the long-term operation of the Project.

Development in the southwest corner of the Lower Area at the confluence of Drainages 1, 2, and 3 and adjacent to a large serpentine outcrop, would impact sensitive biological resources. Under the Project, a residential cul-de-sac with up to 4 Villas and 2 Garden Terrace apartment buildings would be located immediately adjacent to drainages and wetland areas at the confluence of the three drainages and extending to their ultimate confluence with the realigned Froom Creek channel. The confluence of these drainage plays a vital role in the accessibility to resources and foraging habitat for wildlife within the adjacent Irish Hills Natural Reserve. The location of these Villas would also isolate the restored Froom Creek and sensitive natural communities such as the Calle Joaquin wetlands and LOVR ditch from high-quality grassland and other habitats in the southern portion of the Project area.

Project development would also incrementally impact wildlife values of and movement within adjacent habitats within the Irish Hills Natural Reserve. Fire management activities

and vegetation management within an estimated 100-foot buffer along the Project's boundary with Irish Hills Natural Reserve could directly reduce the value of this area to wildlife through loss of forage value and cover. Noise, light, and glare from new development could inhibit wildlife usage of boundary areas. Predation of pets of future owners and/or passage through new development by large predators such as mountain lions, coyotes, and bobcats may lead to resident requests for predator control and/ or removal. Such increased urban-wildland conflicts would increase demands on City resources to balance management of valued wildlife resources of the Irish Hills Natural Reserve with public safety. These issues are discussed in more detail below.

Permanent Disturbance to Wildlife Corridors

The Project would be densely populated with new residents, employees, and visitors. Long-term impacts to sensitive species would occur due to increased human presence onsite, including lighting located on buildings and in parking areas, increased noise from automobiles, human activity, truck loading, parking lot cleaning and sweeping, trash dumpsters or compactors, and other similar activities. Solid waste and polluted runoff from trash storage areas and approximately 12.58 acres of roads and parking lots could enter Drainages 1, 2, and 3 and Froom Creek through wind or littering from human activities. These long-term impacts could cause sensitive species onsite to be killed, to flee the area, or could cause disruption to breeding/nesting efforts, and could be considered significant impacts to sensitive resident and migratory species.

Outdoor night lighting and noise associated with new development could create glare offsite, light spillage, and increased noise levels degrading the quality of Froom Creek, its tributary drainages, and the associated riparian buffer areas that could be utilized by wildlife to navigate the site. Night lighting and noise would be substantial relative to existing conditions, resulting in potential impacts to wildlife migrating through the site. Development within the Upper Terrace would surround and closely border Drainage 2 and border Drainages 1 and 3, inhibiting wildlife access to key water sources at currently undisturbed springs and seeps. Grading, site alteration, and polluted runoff could also alter these springs and seeps, reducing their value to both onsite wildlife and those resident in the adjacent Irish Hills Natural Reserve.

Further, the interface of the Project site and the realigned Froom Creek would lead to increased human interaction within the proposed riparian area, which could reduce the habitat value of the restored Froom Creek and restrict or inhibit wildlife movement and utilization. A walking path is proposed adjacent to the realigned creek's west side, bringing

pedestrians and bicyclists to the creek corridor. Impacts could occur from increased foot traffic in and around Froom Creek and more post-consumer waste entering the sensitive habitat from use of proposed foot trails within the creek setback areas. Increased runoff from paved surfaces and buildings could lead to increased sedimentation, water turbidity, and water quality degradation in the long-term, directly inhibiting aquatic species. These impacts to wildlands in the Upper Terrace, loss of access to water sources in Drainages 1, 2, and 3, and changes to Froom Creek may cause wildlife to avoid or abandon the site and are considered to have a *potentially significant* impact on wildlife movement through or adjacent to the site.

As discussed under Impact BIO-1, the Draft FRSP contains goals, policies, and programs intended to protect and enhance biological resources at the Project site. Realignment of Froom Creek may maintain and enhance critical instream habitat for south-central California coast steelhead, while also enhancing nesting and foraging habitat for other resident or migratory species. However, because the Project would result in permanent removal of high value native wildlife habitat within the Upper Terrace and disruption of wildlife access to water sources, this impact would be *potentially significant*.

Temporary Disturbance to Wildlife Corridors

During construction phases, the Project would render some areas of the Project site uninhabitable even though the habitat area would be avoided. In the Upper Terrace, Drainages 1, 2, and 3 and the grassland, woodland, and scrub habitats would remain but would be temporarily unavailable (or unattractive) while heavy equipment transformed the site (e.g., during grading and other site preparation activities). Once complete, the proposed open space areas of the Project site would become more available to wildlife with ongoing impacts of the development described above.

Realignment of Froom Creek would result in the temporary loss of a critically important wildlife corridor, lasting until near completion of the realignment of the creek and restoration of riparian habitat. During the anticipated 20-month period it would take to realign Froom Creek, the existing corridor for movement of wildlife across the site would be repeatedly disturbed or inaccessible, including the primary corridor for movement of California red-legged frog and south-central California coast steelhead (see Impact BIO-2 above). This disruption could impact both common and sensitive species that currently rely on Froom Creek for movement. As such, impacts associated with realignment of Froom Creek would be temporarily adverse and *potentially significant*. However, over the long

term, it is anticipated that species would generally return to the migratory corridor after completion of realignment and riparian restoration.

As further discussed under Impact BIO-2, Project development within and adjacent to Froom Creek could impact California red-legged frog, which is considered to have moderate potential to occur onsite. In addition, construction could impact south-central California coast steelhead, which have a low potential to occur onsite. These species could occur in Froom Creek due to the presence of seasonally restricted suitable pool habitat. Removal of instream habitat during realignment of Froom Creek could directly impact suitable downstream habitat for steelhead and could also impact dispersal habitat for the California red-legged frog, if construction occurs during the spring of a year with average or greater rainfall. Froom Creek was also determined to support seasonal movement of transient California red-legged frog intermittently during the rainy season, and construction at that time within the creek could impact movement corridors associated with those species. Impacts are considered *potentially significant.*

Mitigation Measures

MM BIO-1 shall apply.

MM BIO-2 shall apply.

MM BIO-4 shall apply.

MM BIO-5 shall apply.

MM BIO-6 shall apply.

MM BIO-9 shall apply.

MM BIO-11 shall apply.

MM BIO-12 shall apply.

MM BIO-13 The Applicant shall amend the FRSP to establish a 300-foot development buffer on the centerline of the confluence of Drainage 1, 2, and 3 and the realigned Froom Creek to maintain natural vegetation, ecological, hydrologic, and wildlife connectivity between the Irish Hills Natural Reserve and the Froom Creek corridor. The required buffer shall extend from the point at which the proposed realigned Froom Creek exits the Specific Plan area, upstream along the centerlines of Drainages 1, 2, and 3

for 600 linear feet. The Applicant shall relocate residential uses to areas outside of this buffer and should not exacerbate biological resource impacts in other areas of the site.

Plan Requirements and Timing. The above requirements shall be integrated into the Final FRSP and final VTM prior to recordation. City staff shall ensure the above measures are incorporated into building plans prior to issuance.

Monitoring. The City shall ensure the above measure is incorporated into the Final FRSP prior to Project approval.

MM BIO-14 *Proposed roadway/pathway crossings over any drainage shall be designed to ensure adequate passage for wildlife, consistent with the design standards and guidelines of the Federal Highway Administration Wildlife Crossing Structure Handbook.*

Plan Requirements and Timing. The above requirements shall be integrated into the Final FRSP. City staff shall ensure the above measures are incorporated into the improvement plans prior to approval.

Monitoring. The City shall ensure the above measure is incorporated into the Final FRSP prior to Project approval.

Residual Impact

Implementation of MM BIO-1 through -2, BIO-4 through -6, BIO-9, and BIO-11 through -12 would reduce potential impacts to wildlife species, riparian corridors, nesting and foraging habitat adjacent to the site, and other sensitive natural communities. Implementation of MM BIO-13 and MM BIO-14 would ensure some access is maintained for passage of wildlife along Drainage 1 to the realigned Froom Creek corridor and Calle Joaquin wetlands from the Irish Hills Natural Reserve and would help protect the natural ecotones along the drainage confluences. MM BIO-12 and MM BIO-13 would improve Project consistency with City policies for provision and maintenance of continuous habitat corridors and preservation of ecotones, including COSE Policies 7.3.3 and 7.7.7. However, proposed mitigation would not feasibly reduce the level of significance of or mitigate Project impacts, nor would they ensure complete consistency with the City's policies.

The Project site is a designated Wildlife Zone and Wildlife Corridor that provides some of the highest quality and most continuous wildlife corridors and ecotones within the City's

Urban Reserve Line. Because of this, the City has established rigorous policies for the preservation and enhancement of ecotones and wildlife corridors within the City. For instance, City General Plan COSE Policy 7.3.2 aims to preserve continuous wildlife habitat, including corridors free of human disruption. City General Plan COSE Policy 7.7.7 similarly aims to preserve and enhance ecotones and natural transitions between varying habitat types because of their importance to wildlife. Despite proposed mitigation, the Project would continue to alter the value the Project site currently provides with regards to wildlife and habitat connectivity. While realignment of the Froom Creek might improve some habitat for movement of fish or amphibious species, the realigned Froom Creek corridor is proposed as an engineered stream surrounded by urban development. Development within the Upper Terrace would similarly eliminate important foraging habitat for many residents of the Irish Hills and restrict access to lower elevations of the site, including the Calle Joaquin wetlands. Therefore, residual impacts to wildlife corridors and movement of wildlife are therefore *significant and unavoidable.*

Impact BIO-5 Project construction would result in the potential disturbance, trimming, or removal of up to 75 mature trees (Less than Significant with Mitigation).

Up to 75 mature native and non-native trees would be adversely affected by construction of the proposed Project. These trees are generally located in the developed/ disturbed area adjacent to the existing John Madonna Construction operations and in the southwest portion of the Project site adjacent to Drainages 1, 2, and 3 on the Upper Terrace. Construction activities would either result in the direct removal of trees to support development of building pads and structures, trimming of trees, or involve operation of equipment or construction activities within the root zone of a tree. Where work does not require the removal of a tree, trimming or work within the root zone of a mature tree has the potential to result in decline in health or mortality of the affected tree. Further, once operational, clearing of vegetation and maintenance of a 100-foot wildfire buffer area around the Madonna Froom Ranch and Villaggio developments would have potential to result in removal or trimming of additional mature trees, primarily in the Upper Terrace and within the Irish Hills Natural Reserve.

City General Plan COSE Policy 7.5.1 requires that oak woodland communities be protected. An existing oak woodland exists in the southern and western portions of the Project site, within the elevated hillsides near the Project site boundary. Development under the Specific Plan, as well as the 100-foot wildfire buffer area, would avoid

disturbance of this oak woodland community and any mature native oak trees, consistent with COSE Policy 7.5.1. However, the Specific Plan does not include any other goals, policies, or programs, which would reduce or mitigate impacts to mature trees. The potential disturbance of up to 75 mature trees remains a *potentially significant* impact.

Mitigation Measures

MM BIO-15 *Native Tree Protection. To ensure protection of native protected trees with respect to the tree trunk, canopy, and root zone, the Applicant shall hire a City-approved arborist or qualified biologist to conduct a daily, pre-construction survey of all activities occurring within the protected root zones of protected trees, and shall make recommendations for avoidance, and for any necessary remedial work to ensure the health and safety of trees that are encroached, and any measures necessary to reduce and/or remove potential safety hazards posed by any of these trees. Following construction, the health of affected trees shall be monitored by the arborist or qualified biologist for up to 5 years if necessary and as determined at the discretion of the City.*

Should Project activities result in the compromised health of native trees resulting from encroachment, the Applicant shall submit a native tree replacement planting program, prepared by a qualified biologist, arborist, or other resource specialist, which specifies replacement tree locations, tree or seedling size, planting specifications, and a monitoring program to ensure that the replacement planting program is successful, including performance standards for determining whether replacement trees are healthy and growing normally, and procedures for periodic monitoring and implementation of corrective measures in the event that the health of replacement trees declines.

Where the worsened health of a tree results in the loss of protected tree species, mitigation measures in the native tree replacement program shall include the planting of replacement trees on the Project site, if suitable area exists. Riparian trees 4 inches or greater measured at DBH shall be replaced in-kind at a minimum ratio of 3:1 (replaced: removed). Trees 24 inches or greater inches DBH shall be replaced in-kind at a minimum ratio of 10:1. Willows and cottonwoods may be planted from live stakes following

guidelines provided in the California Salmonid Stream Habitat Restoration Manual for planting dormant cuttings and container stock (CDFW 2010).

- *Tree replacement shall be conducted in accordance with a Natural Habitat Restoration and Enhancement Plan to be approved by the City's Natural Resources Manager.*
- *The Natural Habitat Restoration and Enhancement Plan shall prioritize the planting of replacement trees on-site where feasible, but shall allow that replacement trees may be planted off-site with approval of the City's Natural Resources Manager.*
- *Replacement trees may be planted in the fall or winter of the year in which trees were removed. All replacement trees will be planted no more than 1 year following the date upon which the native trees were removed.*

Where onsite mitigation through planting replacement trees is not feasible, mitigation shall be provided by one of the following methods:

- *Off-site mitigation shall be provided by planting no less than 10:1, at a suitable site that is restricted from development or is public parkland. The Applicant shall plant seedlings – less than 1-year old – in an area providing suitable habitat. In the case of oak trees, the seedlings shall be grown from acorns collected in the area; or*
- *An in-lieu fee shall be provided for the unavoidable impacts of the loss of native tree habitat. The fee shall be based on the type, size and age of the tree(s) removed.*

Plan Requirements and Timing. All requirements shall be included on final grading plans. The qualified biologist shall monitor for the health of trees during and following construction activities, for a period of up to 5 years if determined necessary by the City.

Monitoring. The qualified biologist shall monitor all construction activities, and if necessary, periodically monitor the placement and planting program. City staff shall monitor for the health of affected individuals to determine compliance and potential need for further mitigation.

Residual Impacts

With implementation of MM BIO-15, requiring a Native Tree Protection Plan which addresses avoidance of trees and requirement for replacement of affected trees, impacts would be avoided and/or reduced. Further, MM BIO-15 would ensure proposed development occurs consistent with the intent and requirements of COSE Policy 7.5.1. Residual impacts to native trees are *less than significant with mitigation.*

3.4.3.4 Cumulative Impacts

The proposed Project is one of several planned and/or proposed residential developments in undeveloped open or agricultural lands along edges of the City, such as the San Luis Ranch Specific Plan and Avila Ranch Development Project. Construction of the Project would incrementally contribute to the conversion of undeveloped agricultural land and open lands to developed urban uses, with resultant losses of open space and habitats, increases in impervious surfaces, night light, noise, and traffic that accompany such development. These changes would both directly and indirectly affect sensitive habitats and wildlife species.

Project development resulting in impacts to onsite wetlands and riparian habitat would contribute to cumulative losses of foraging/nesting habitat for several sensitive wildlife species in the region. Cumulative removal of habitat in the vicinity of the Project site reduces the amount of foraging and breeding habitat for other non-sensitive mammals, birds, and reptiles, particularly to wildlife corridors along Froom Creek, its tributaries, and the Irish Hills. Project impacts, when combined with other projects in the vicinity as represented in Table 3.0-1, such as the San Luis Ranch Specific Plan and Avila Ranch Development Project, would add to impervious surfaces and resultant pollutant loading in the Froom Creek and San Luis Creek watersheds. No cumulative development projects are located within the immediate vicinity of the Project that would contribute to adverse effects to biological resources onsite, along Froom Creek, adjacent to the site, or in the greater Irish Hills. Given no additional cumulative development has been identified near existing or ongoing projects near the Irish Hills development, the Project is not considered to have a localized cumulative impact on habitat adjacent to proposed development or the movement of wildlife through the site or surrounding area.

The Project would directly affect the Froom Creek corridor through realignment of the creek and would not contribute runoff and increased potential for pollutants to Froom Creek and downstream water bodies, assuming the project is implemented in compliance

with applicable regulations (refer to Impact HYD-1). Despite the proposed riparian buffer and dedication of open space within the Project site, Project contributions to increased levels of runoff (pollution and siltation) and waste material to downstream water bodies (San Luis Creek) would potentially impact the species that use and reside in and around Froom Creek and San Luis Creek. In the long-term, potential cumulative degradation of water quality and habitat in Froom Creek and downstream in San Luis Creek are of concern.

Project development would contribute to citywide and regional impacts to biological resources. Pending development projects in other cities within the County, and within unincorporated areas, could impact a range of biological resources, including riparian and wetland habitats, as well as special-status species. Construction of the Project, as well as reasonably foreseeable projects in the County, would result in further loss to natural land and other habitat that supports sensitive and listed species, and would contribute to the fragmentation of habitat by interrupting wildlife corridors. Within the City and its immediate planning area, full development permitted under the LUE would increase overall developed area in the City and further reduce natural habitat acreages within the City limits. Development under the LUCE would contribute to the removal or modification of natural habitats, decrease in native plant and animal species occurrences, increase in urban/wildland interface, and increase in ruderal/disturbed habitat areas. However, the LUCE EIR ultimately found that cumulative impacts to biological resources would be less than significant after implementation of both the existing General Plan policies and those proposed by the LUCE Update, as well as compliance with state and federal regulations.

Despite incorporation of all the Project-specific mitigation measures described above, the Project's contribution to regional cumulative impacts to biological resources would be cumulatively considerable due to inability for the Project to avoid or successfully mitigate all impacts associated with loss or disturbance of sensitive and regionally significant biological resources; therefore, cumulative impacts would be *significant and unavoidable*.