

4.4 Biological Resources

This section describes biological resources in the plan area based on a review of recent information on special-status species occurrences and habitat mapping, coupled with a reconnaissance-level site visit. The Watsonville 2005 General Plan Update prepared by H. T. Harvey & Associates, which documented biological resources and impacts within the current contiguous City limits (hereafter referred to simply as City limits), was updated with new information from a variety of sources. A site visit was conducted by H. T. Harvey & Associates ecologists on July 24, 2025 to document conditions within the City limits and potential annexation areas within the Urban Limit Line. New growth areas that were inspected in the field include Area A (Buena Vista), Area B (Atkinson Lane), Area C, and Highway 1 Gateway. This report incorporates relevant discussion from the 2005 General Plan analysis and new analysis from the 2025 site visit and review of recent mapping and occurrence data.

During the public scoping process, several commenters raised concerns about potential biological resources impacts. Specifically, commenters requested that the EIR consider the following issues:

- Impacts to special-status species
- Impacts to bed, channel, bank, and riparian habitat, and the direct and indirect effects to fish, wildlife, and their habitat
- Tree removal in the Buena Vista new growth area
- Land use changes resulting from rezoning
- Changes in hydrological conditions
- Expansion of urban limit line and impacts to wetlands
- Operational features of the Project, including level of anticipated human presence, artificial lighting/light reflection, noise, traffic generation, and other features

Each of these topics is covered in **Section 4.4.3.2, Project Impacts**.

4.4.1 Environmental Setting

4.4.1.0 Regulatory Framework

Federal

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects federally listed wildlife species from harm or take, which is broadly defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap,

capture, collect, or attempt to engage in any such conduct.” Take can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as take even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA only if they occur on federal lands.

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

Plan Area Applicability: The federally threatened Santa Cruz tarplant (*Holocarpha macradenia*) is known to occur in the plan area in non-native annual grassland. The federally endangered Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) and federally threatened California tiger salamander (*Ambystoma californiense*) are known to breed near the plan area within ephemeral pools and human-made ponds, and could possibly occur within the plan area during dispersal and in upland habitats during winter. The federally threatened California red-legged frog (*Rana draytonii*) and federally proposed as threatened northwestern pond turtle (*Actinemys marmorata*) may occur within the plan area in freshwater marsh, seasonal wetlands, and riparian woodland.

The federally threatened South Central California Coast steelhead (*Oncorhynchus mykiss*) occurs in the Pajaro River and its tributaries within the plan area.

Projects within the plan area will implement appropriate avoidance and minimization measures (AMMs) and best management practices (BMPs) to minimize take of federally listed species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), 16 U.S.C. Section 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests, and it prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the USFWS in its June 14, 2018 memorandum “Destruction and Relocation of Migratory Bird Nest Contents”. Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction.

Plan Area Applicability: All native bird species that occur in the Watsonville General Plan 2050 area are protected under the MBTA except for California quail, which is among the groups explicitly exempted from MBTA protection.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act is the primary federal law protecting eagles, including individuals and their nests and eggs. The USFWS implements the Migratory Bird Treaty Act (16 USC Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). Under the Bald and Golden Eagle Protection Act's Eagle Permit Rule (50 CFR 22.26), USFWS may issue permits to authorize limited, non-purposeful take of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*).

Plan Area Applicability: Bald and golden eagles occur in the plan area as foragers. Projects within the plan area would follow appropriate AMMs and BMPs to prevent take of these species, and therefore permits from USFWS to authorize take of these species would not be necessary.

Clean Water Act

Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under provisions of Section 404 of the 1972 Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (1899). Waters of the U.S. include other waters, such as intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, territorial seas, and wetlands (33 Code of Federal Regulations, Part 328). Wetlands are generally identified by examining the vegetation, soils, and hydrology of an area use the "Routine Determination Method, On-Site Inspection Necessary (Section D)" outlined in the Corps Manual (Environmental Laboratory 1987). The May 25, 2023 U.S. Supreme Court decision in *Sackett v. Environmental Protection Agency* limited the definition of waters of the U.S. by including only wetlands that have a continuous surface connection with traditional navigable waters. On August 29, 2023, the U.S. Environmental Protection Agency and USACE issued a final implementing rule to amend the definition of waters of the U.S. to conform with the *Sackett* decision.

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

activities that directly impact waters of the U.S., such as grading and fill placement, require a Section 404 permit from the USACE. Under the existing Conforming Rule defining waters of the U.S. (adopted September 2023), ephemeral streams, which only flow during and shortly following rain events and previously were considered waters of the U.S. when connected to intermittent and perennial tributaries to traditional navigable waters, are no longer considered jurisdictional federal waters.

Plan Area Applicability: Watsonville Slough, Harkins Slough, Struve Slough, Pajaro River, Salsipuedes Creek and Corralitos Creek are considered waters of the U.S. in the plan area. In the new growth area, the diked freshwater marsh in the Atkinson Lane area is considered waters of the U.S. A Section 404 permit from the USACE would be necessary to authorize any impacts to the freshwater marsh. Other areas that may meet wetland and stream characteristics that develop or occur within the plan area may be considered to be waters of the U.S. if these are at least intermittent in nature (with a connection to groundwater) and are connected to other jurisdictional waters of the U.S.

River and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 prohibits the creation of any obstruction to the navigable capacity of waters of the U.S., including discharge of fill and the building of any wharfs, piers, jetties, and other structures without Congressional approval or authorization by the Chief of Engineers and Secretary of the Army (33 U.S.C. 403).

Navigable waters of the U.S., which are defined in 33 CFR, Part 329.4, include all waters subject to the ebb and flow of the tide, and/or those which are presently or have historically been used to transport commerce. The shoreward jurisdictional limit of tidal waters is further defined in 33 CFR, Part 329.12 as “the line on the shore reached by the plane of the mean (average) high water.” It is important to understand that the USACE does not regulate wetlands under Section 10, only the aquatic or open waters component of Bay habitat, and that there is overlap between Section 10 jurisdiction and Section 404 jurisdiction. According to 33 CFR, Part 329.9, a waterbody that was once navigable in its natural or improved state retains its character as “navigable in law” even though it is not presently used for commerce as a result of changed conditions and/or the presence of obstructions. Historical Section 10 waters may occur behind levees in areas that are not currently exposed to tidal or muted-tidal influence, and meet the following criteria: (1) the area is presently at or below the mean high water line; (2) the area was historically at or below mean high water in its “unobstructed, natural state”; and (3) there is no evidence that the area was ever above mean high water.

As mentioned above, Section 404 of the CWA authorizes the USACE to issue permits to regulate the discharge of dredged or fill material into waters of the U.S. If a project also proposes

to discharge dredged or fill material and/or introduce other potential obstructions in navigable waters of the U.S., a Letter of Permission authorizing these impacts must be obtained from the USACE under Section 10 of the Rivers and Harbors Act.

Plan Area Applicability: Although tidal waters occur within the City limits, their lowest elevation is approximately 5 feet, which is above the mean high water elevation of 4.86 feet (NAVD88) recorded at the nearest tidal station (NOAA 2025). Therefore, Section 10 waters are not present within the City limits or new growth areas, and a Letter of Permission from USACE will not be required.

State

California Endangered Species Act

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

Plan Area Applicability: The state endangered Santa Cruz tarplant (*Holocarpha macradenia*) is known to occur in the plan area in non-native annual grassland. The state endangered Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) and state threatened California tiger salamander (*Ambystoma californiense*) are known to breed near the plan area within ephemeral pools and human-made ponds, and could possibly occur within the plan area during dispersal and in upland habitats during winter. The state threatened tricolored blackbird (*Agelaius tricolor*) may occur in freshwater marsh within the plan area. The state candidate western burrowing owl (*Athene cunicularia*) may occur in grassland and agricultural fields in the plan area.

With implementation of appropriate AMMs and BMPs, projects within the plan area would minimize the potential to take any state listed species.

California Environmental Quality Act

CEQA is a state law that requires state and local agencies to document and consider the environmental implications of their actions and to refrain from approving projects with

significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources, and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA known as the State CEQA Guidelines.

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

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

Plan Area Applicability: All potential impacts on biological resources will be considered during CEQA review of the general plan in the context of this EIR. Project impacts are discussed in Section 4.4.3 below.

California Fish and Game Code

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A *stream* is defined in Title 14, California Code of Regulations Section 1.72, as “a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.” Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California

Fish and Game Code Section 2786 defines *riparian habitat* as “lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source.” The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, CDFW would claim jurisdiction over a stream’s bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

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

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

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

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

California Fish and Game Code Sections 3511, 4700, 5050, and 5515 afford fully protected status to numerous specifically identified birds, mammals, reptiles, and amphibians. These species cannot be taken, even with an incidental take permit, unless authorized by a Natural Communities Conservation Plan. The Fish and Game Commission may authorize the collecting of fully protected birds and mammals for necessary scientific research. The commission may also authorize the live capture and relocation of fully protected bird species pursuant to a permit for the protection of livestock. Legally imported fully protected birds and mammals, or parts thereof, may be possessed under a permit by CDFW.

Plan Area Applicability: CDFW jurisdiction under Section 1602 of the California Fish and Game Code extends up to the canopy dripline along Pajaro River, Corralitos Creek and Salsipuedes Creek. In the new growth area, CDFW jurisdiction extends up to the canopy dripline of riparian woodland along Corralitos Creek in the Atkinson Lane area, as well as to the canopy dripline of riparian woodland associated with ephemeral drainages in the Buena Vista area. Any impacts to riparian habitats would necessitate obtaining an LSAA from CDFW.

Most native bird, mammal, and other wildlife species that occur in the new growth area and in the immediate vicinity are protected under the California Fish and Game Code. Impacts on these species are discussed in Section 4.4.3.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Porter-Cologne), the State Water Resources Control Board (SWRCB) has the ultimate authority over state water rights and water quality policy. Porter-Cologne broadly defines waters of the state as “any surface water or groundwater, including saline waters, within the boundaries of the state.” Porter-Cologne also establishes nine Regional Water Quality Control Boards (RWQCBs) to oversee water quality on a day-to-day basis. Pursuant to Section 401 of the federal CWA, projects that are regulated by the USACE must obtain water quality certification from the appropriate RWQCB. This certification ensures that the Project would uphold state water quality standards. The RWQCB also claims jurisdiction over areas not claimed by the USACE that directly affect water quality, such as areas below top of bank in streams, and may require a joint Section 401 Water Quality Certification/Waste Discharge Requirement for impacts to areas within the bank but outside federal CWA jurisdiction.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State and subsequently revised these guidelines on April 6, 2021. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures for Discharges of Dredged or Fill

Material to Waters of the State describe riparian habitat buffers as important resources that may be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs for impacts. The RWQCBs may impose mitigation requirements even if the USACE does not, and it should be noted that the State of California's jurisdiction to regulate its water resources is much broader than that of the federal government. The SWRCB works in coordination with the RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its jurisdiction, and has the authority to approve, with or without conditions, or deny projects that could affect waters of the state under CWA Section 401 and Porter-Cologne.

Project Applicability: All areas considered waters of the U.S. are also waters of the State. In addition, the RWQCB would also claim wetlands considered non-jurisdictional by the USACE due to isolation from other waters features. Along Corralitos Creek in the Atkinson Lane new growth area, waters of the State extend landward to the tops of the banks and to the outer edge of any contiguous riparian canopy, as the RWQCB considers riparian woodland a "buffer" of waters of the State. Any impacts in these areas would require a Section 401 Water Quality Certification or Waste Discharge Requirements.

Local

The Santa Cruz County Water Quality Control Ordinance (Chapter 16.24) restricts any activity that would significantly degrade water quality by increasing turbidity or settleable solids in surface waters beyond natural background levels. Specific thresholds are outlined based on existing turbidity levels, and the discharge of settleable solids is limited to no more than 0.5 mL/L/hour above natural conditions. Activities that may impact water quality require prior approval from the County Administrator, who may impose conditions or deny the request. Certain projects may be exempt if they have valid environmental documentation (e.g., EIR or Negative Declaration) and comply with permit requirements.

Project Applicability: Riparian woodland adjacent to Corralitos Creek occurs in the Atkinson Lane new growth area. Project activities must comply with County restrictions on turbidity and settleable solids in surface waters. If project work has the potential to increase turbidity or discharge settleable solids above allowable thresholds, authorization from the County Administrator will be obtained, and any required conditions will be incorporated into the project.

The Santa Cruz County Riparian Corridor Protection Ordinance (Chapter 16.30) establishes standards to restrict development in riparian and wetland areas. It sets administrative procedures for exceptions and outlines required setbacks, permitting, and protection of sensitive habitats.

- A riparian exception is required for actions such as grading, land clearing, construction of buildings, and removal of trees or shrubs in protected riparian corridors.
- Deposition of debris and the use of pesticides within these corridors are prohibited.
- Certain activities are exempt, including:
 - Continued use of pre-existing agricultural and non-agricultural uses.
 - Work performed under a valid State Timber Harvesting Permit.
 - Pest control activities authorized under the California Food and Agricultural Code.
 - Drainage, erosion control, or habitat restoration measures required as a condition of County project approval.

Project Applicability: Riparian and wetland areas occur in the Atkinson Lane and Buena Vista new growth areas. Project activities within riparian corridors are subject to restrictions on grading, vegetation removal, construction, and other disturbances. If project work cannot avoid riparian areas, a Riparian Exception will be sought from the County, and all permit conditions will be followed.

The Santa Cruz County Sensitive Habitats Protection Ordinance (Chapter 16.32) was designed to minimize disturbance in sensitive habitats and to protect these areas for their genetic, scientific, and educational value. The ordinance defines sensitive habitat as any area supporting rare, endangered, or unique plant or animal communities—including wetlands, riparian corridors, coastal strand or dune, native grassland, and habitats identified in federal or state listings or County inventories. The ordinance states that:

- No toxic substance that will have adverse effects on the biotic community can be used in a sensitive habitat. In some instances, such substances can be used for agricultural purposes but only if mitigation measures can ensure protection.
- No development activities or land disturbance can occur in a sensitive habitat until a biotic review has been completed. This review determines what kinds of development activities can be conducted and what mitigation measures may be necessary to ensure protection of the habitat.

- Development activity includes any action that results in disturbance to rare, endangered, or locally unique plants and animals or to their habitats. Development includes, but is not limited to:
 - building, reconstruction, or alteration of structures on land, in or near natural bodies of water
 - grading, land clearing
 - change in density (including land divisions) or intensity of land use
- These activities may be restricted depending on the specific sensitive habitat under consideration. Development may be permitted as long as the habitat remains undisturbed; permitted as long as mitigation measures can correct any resulting adverse effects; or prohibited.

Additionally, a formal biotic approval process is required—ranging from site visit through full biotic report review—culminating in written approval that outlines conditions to protect sensitive species and habitats. Mitigation may include deed restrictions, restoration plans, or conservation easements. Existing agricultural operations, projects with sufficient prior biotic review, and CEQA-reviewed projects may be exempt.

Project Applicability: Wetlands and riparian corridors occur in the Atkinson Lane and Buena Vista new growth areas. Project activities that may occur within or near sensitive habitats will be subject to biotic review and approval. If impacts are unavoidable, the project will obtain written biotic approval and implement required measures, such as restoration, conservation easements, or deed restrictions, as directed by the County.

The Santa Cruz County Significant Trees Protection Ordinance (Chapter 16.34) aims to preserve scenic and ecological value within the Coastal Zone by regulating the removal, trimming, or destruction of large trees. The ordinance states that:

- A permit is required to remove, trim more than one-third of foliage, poison, or otherwise destroy any significant tree within the Coastal Zone unless exempt. Violating these requirements is unlawful without a valid permit or emergency justification.
- The ordinance defines a "significant tree" as any tree, sprout clump, or group of trees meeting size and location thresholds:

- Inside urban or rural service lines: individual trees ≥ 20 inches diameter at breast height (DBH); sprout clumps of five or more stems each > 12 inches DBH; or groups of five or more trees on a parcel all > 12 inches DBH.
 - Outside service lines, visible from scenic roads, beaches, or within scenic resource areas: individual trees ≥ 40 inches DBH.; sprout clumps of five or more stems each > 20 inches DBH; or groups of ten or more trees on a parcel each > 20 inches DBH.
 - Any tree located within a sensitive habitat as defined in Chapter 16.32.
- Exemptions include timber operations under valid timber harvesting permits, tree removals addressed under discretionary permits (e.g. grading, sensitive habitats, riparian protection), and standard agricultural tree crops.

Applications for removal must include arborist reports and details; replacement trees or in-lieu fees may be required as mitigation. Emergency removals are allowed only for hazards with prompt reporting required. Violations are subject to enforcement per County land use enforcement rules.

Project Applicability: If significant trees must be affected, a tree removal permit will be obtained from the County, including submission of required reports and measures such as replacement plantings or in-lieu fees.

4.4.1.1 Existing Conditions

Land Cover Types

The City of Watsonville is located in the Pajaro Valley of southern Santa Cruz County (Figure 4.4-1), a productive agricultural region with a distinctly rural character. The planning boundary encompasses significant, though disturbed, natural areas, including wetland habitat within Watsonville, Struve, and Harkins Sloughs, important remnants of riparian habitat along the sloughs, the Pajaro River, Salsipuedes Creek, and Corralitos Creek, and small areas of intact oak woodland and grasslands. These areas provide important habitat for wildlife, including migratory birds and several species listed under the federal and state Endangered Species Acts. However, the planning area is dominated by the urbanized core of Watsonville and residential areas predominantly to the north and west and industrial areas to the south. Bordering the City limits within the new growth areas are agricultural, residential, rural and undeveloped land. The biological communities that occur within the planning area and their approximate acreages are

summarized in Table 4.4-1 and shown in Figure 4.4-1 (Contiguous and Non-Contiguous Plan Area) and Figure 4.4-2 (Contiguous Plan Area).

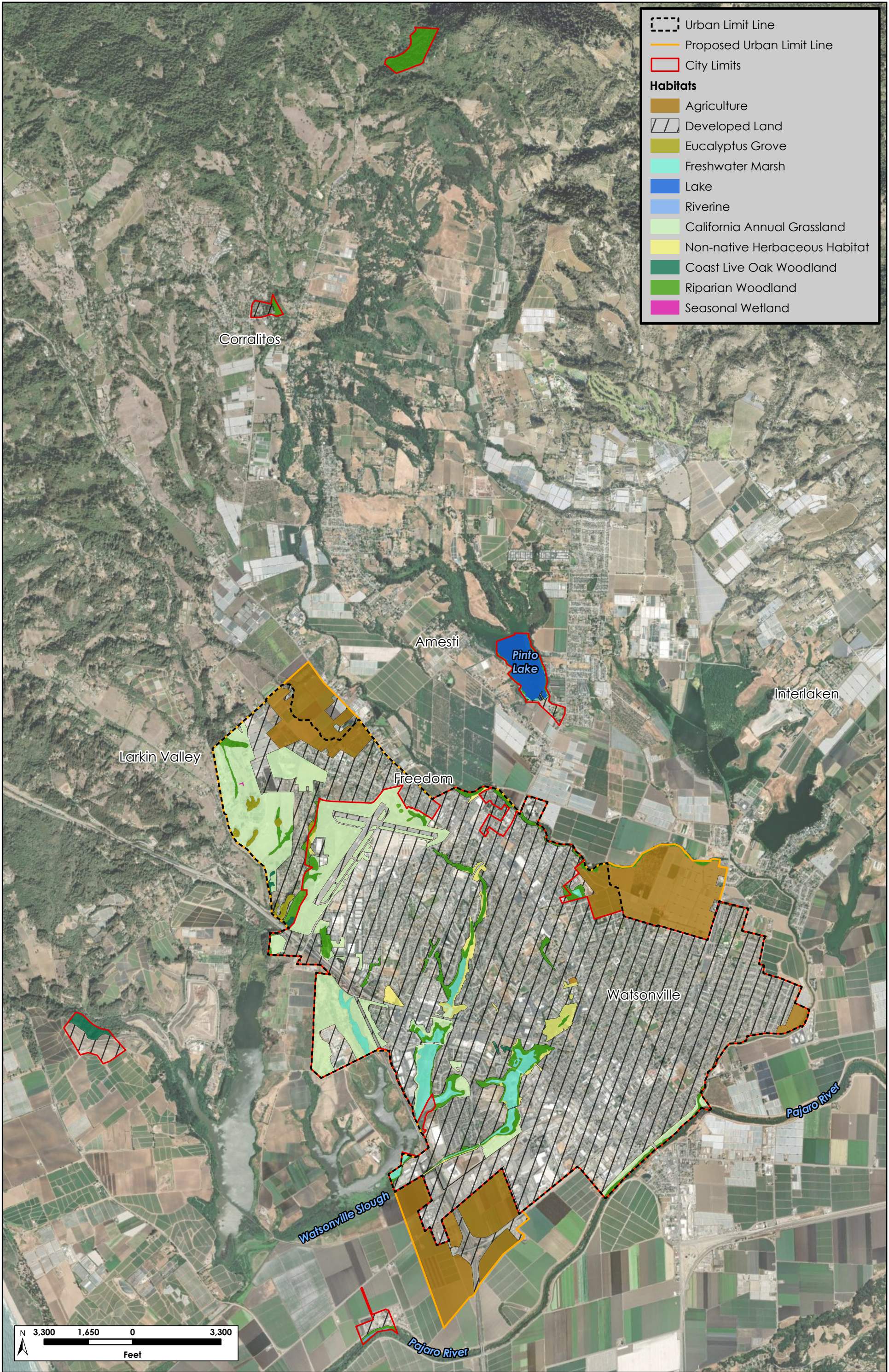
Table 4.4-1. Biotic Habitats within the Planning Area

Biotic Habitat	Area within the City Limit (acres)	Area within New Growth Areas (acres)	Area within the total Planning Area (acres)
California annual grassland	363.9	233.7	597.6
Coast live oak woodland	16.6	4.3	20.9
Riparian woodland	182.1	46.5	228.6
Freshwater marsh	100.2	1.5	101.7
Non-native herbaceous	59.1	0.8	59.9
Eucalyptus grove	1.9	16.9	18.8
Agriculture	17	685.8	702.8
Developed land	3584.5	419.5	4004
Seasonal wetland	0	0.2	0.2
Lake	60.4	0	60.4
Riverine	1.6	0	1.6
Total	4387.3	1409.3	5796.6

Soils underlying the planning area are predominantly alluvial clays near the mouth of the Pajaro River and deep, fertile loams and sandy loams on its alluvial plains and fans (NRCS 2025). These areas provide some of the most productive agricultural land in the county and are used for irrigated crops such as strawberries, lettuce, broccoli, and cauliflower, and also underlie the City urban center. Areas of this soil type which are frequently or permanently flooded form the slough channels draining the Pajaro Valley, which are highly altered by adjacent land uses. North and west of the City limits, the Buena Vista and Atkinson Lane new growth areas are underlain

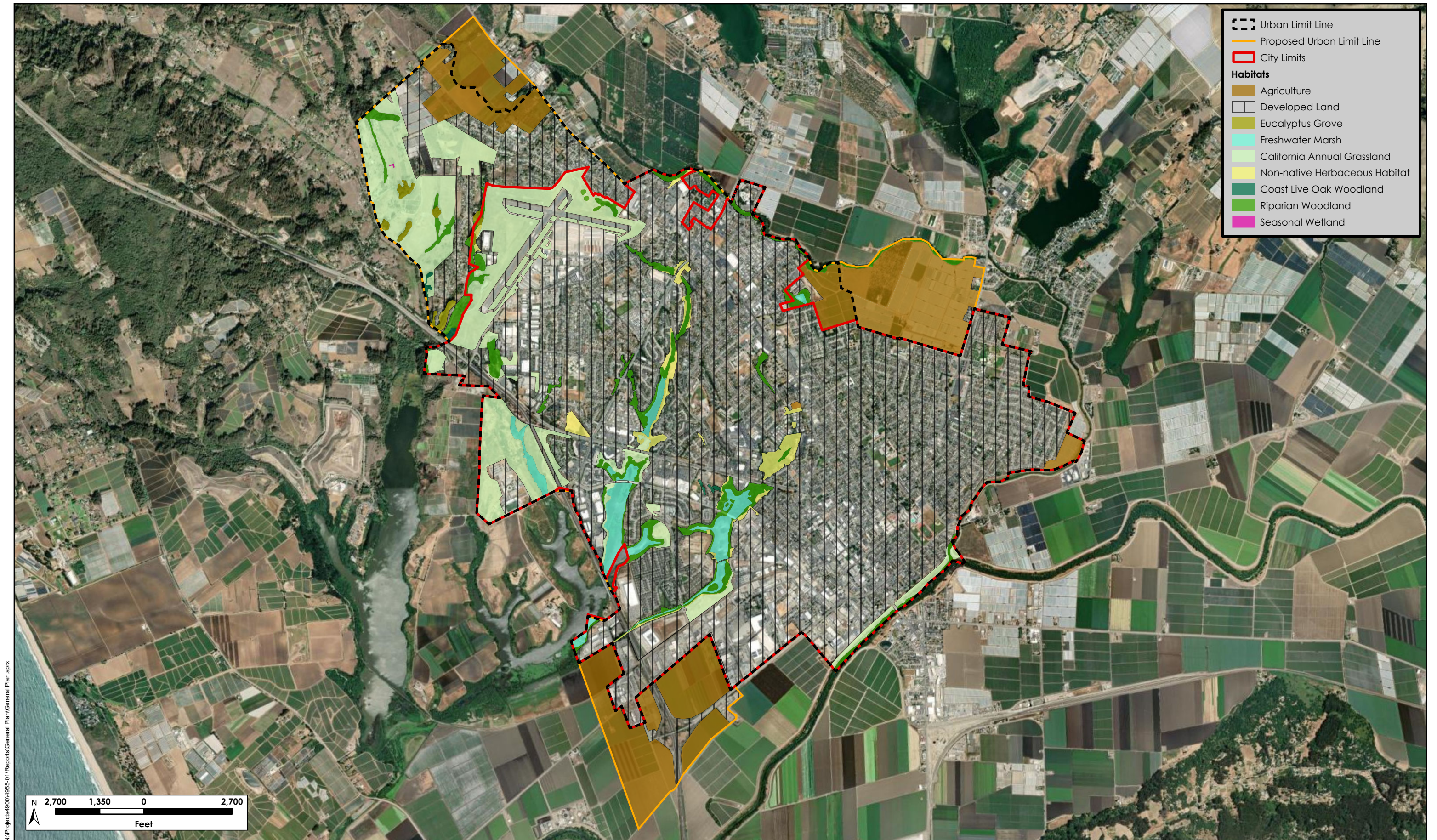
by sandy or sandy loam soils derived from mixed alluvium or old marine sand deposits. These areas once supported species-rich coastal terrace prairie and coastal scrub habitat; remnant species associated with these communities can still be found in some areas.

The planning area is mapped on the Watsonville East and Watsonville West USGS Quadrangles; elevations range from approximately 5 feet within the deepest slough channels to approximately 100 feet north of the airport. Topography is generally level, with low hills northwest of the City limits in Buena Vista (Figure 4.4-1). According to 30-year monthly normals between the years 1991 and 2020, average annual rainfall is approximately 21.83 inches, and mean annual temperature for the area is approximately 56.4 degrees Fahrenheit (PRISM 2025).



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Figure 4.4-2. Biotic Habitats in Contiguous Plan Area

Watsonville General Plan Biological Resources Report (4955-01)

August 2026

4.4.1.2 Sensitive Natural Communities and Wildlife Habitats

Freshwater Marsh

The most significant biological resource in the planning area is the system of sloughs and marshes that drain the Pajaro Basin and flow into Monterey Bay. Seasonal and perennial freshwater marsh occurs within the channels of Watsonville, Struve, and Harkins Sloughs in the southern portion of the planning area. Within and adjacent to the low flow channels of the sloughs, permanently moist soils support rhizomatous perennial hydrophytes (water-loving plants) including cattail (*Typha* spp.), bur-reed (*Sparganium eurycarpum*), and bulrush (*Scirpus* spp.). During the winter months, open aquatic habitat is available in the deepest areas of the sloughs. In contrast, higher zones within the marsh dry out in summer and are colonized by perennial herbs such as bur marigold (*Bidens laevis*), dock (*Rumex* spp.), and rush (*Juncus* spp.). In general, sloughs within the planning area are highly degraded by agricultural runoff, urban fill for roadway crossings, and invasion by non-native species. Himalayan knotweed (*Persicaria wallichii*), a noxious weed of seasonally-moist soils, and feathered mosquito-fern (*Azolla filliculoides*), introduced for mosquito control, are particularly pervasive. Upland areas surrounding the sloughs are also highly degraded by invasive fennel (*Foeniculum vulgare*) and Harding grass (*Phalaris aquatica*), which greatly reduce habitat quality.

Restoration and protection of the sloughs is a high priority; efforts are underway to restore native plants to degraded wetland areas. Wetland enhancements plans are outlined in the *Watsonville Sloughs Resource Conservation and Enhancement Plan* (Swanson Hydrology & Geomorphology et al. 2003). The entire Watsonville Slough system is designated an Area of Special Biological Importance by RWQCB, designated as an Ecological Reserve by CDFW, identified as a Significant Biological Resource in the City of Watsonville Coastal Zone Implementation Plan, Santa Cruz County's Growth Management Plan and the County's Local Coastal Program Land Use Plan, and in 2006, the Watsonville Slough system was formally designated a Critical Coastal Area by the California Coastal Commission.

In 2007, the Watsonville Slough Restoration Project (Phase 1a/1b), led by the Santa Cruz County Regional Transportation Commission (RTC), California Department of Transportation (Caltrans), Resource Conservation District of Santa Cruz County (RCD), and the City of Watsonville, rebuilt the Watsonville Slough channel, located in the southwestern portion of Watsonville, converting a straight agricultural ditch into a functioning wetland with sediment basins, erosion controls, and native revegetation. In 2012, Phase 2 of the Watsonville Slough Restoration Project was completed, widening the channel from roughly 30 feet to over 100 feet along the stretch between Ohlone Parkway and Highway 1.

As indicated in Table 4.4-1, approximately 100.2 acres of freshwater marsh (including open aquatic habitat) occur within the City limits, including Struve Slough and Watsonville Slough. Approximately 1.5 acres of marsh occur within an isolated basin at the southeastern boundary of the Atkinson Lane new growth area, a diked pond. The relative size of these habitats varies seasonally and with annual rainfall patterns. No freshwater marsh occurs within City limits planned for infill development or in the Buena Vista, Area C, or Highway 1 Gateway new growth areas.

Freshwater marsh provides habitat for a wide variety of animal species. Wetlands in southern Santa Cruz County support northwestern pond turtles (*Emys marmorata*) and various amphibians, including Pacific treefrogs (*Pseudacris regilla*) and California red-legged frogs. Several species of birds forage in aquatic habitats, including snowy egrets (*Egretta thula*) and other waders, American white pelicans (*Pelecanus erythrorhynchos*), double-crested cormorants (*Nannopterum auritum*), and many species of waterfowl. Red-winged blackbirds (*Agelaius phoeniceus*), marsh wrens (*Cistothorus palustris*), and common yellowthroats (*Geothlypis trichas*) are among bird species that nest in vegetation surrounding wetlands. Breeding waterbirds and waterfowl in southern Santa Cruz County include pied-billed grebe (*Podilymbus podiceps*), American coot (*Fulica americana*), mallard (*Anas platyrhynchos*), and cinnamon teal (*Anas cyanoptera*). Small mammals, such as raccoons (*Procyon lotor*) and striped skunks (*Mephitis mephitis*), are likely to be found near wetlands, as well as several reptile species, especially garter snakes (*Thamnophis* spp.).

Special-status wildlife species that could occur in freshwater marsh in the planning area include the California tiger salamander, Santa Cruz long-toed salamander, California red-legged frog, northwestern pond turtle, bald eagle, and tricolored blackbird.

Riparian Woodland

The Pajaro River, Watsonville Slough system, Corralitos Creek, Salsipuedes Creek, Browns Creek, and various drainage swales throughout the planning area provide important remnants of riparian habitat. In most of the riparian woodland habitat, arroyo willow (*Salix lasiolepis*) and red willow (*Salix laevigata*) dominate the canopy, often to the point of shading out understory species. Fremont cottonwood (*Populus fremontii*) and California sycamore (*Platanus racemosa*) are common associates especially along Pajaro River near Watsonville Wastewater Treatment Plant or along Browns Creek near Browns Valley Intake area. Browns Valley Intake area is unique from other riparian woodland habitats in the plan area, dominated by coast redwood (*Sequoia sempervirens*) canopy.

Understory vegetation, when present, is typically a dense thicket of California blackberry (*Rubus ursinus*) or Himalayan blackberry (*Rubus armeniacus*) and non-native species such as Harding grass, fennel, pampas grass (*Cortaderia* spp.), and poison hemlock (*Conium maculatum*). The upper

reaches of riparian corridors in the planning area, particularly within the Buena Vista new growth area, are degraded by stands of planted blue-gum eucalyptus (*Eucalyptus globulus*). Riparian areas are protected by CDFW through regulations in Sections 1601-1603 of the Fish and Game Code, and are recognized as sensitive by the City of Watsonville and Santa Cruz County (see Regulatory Setting, above).

Approximately 135 acres of riparian habitat occur within City limits. Approximately 46.5 acres of riparian habitat occur within the new growth areas including the northwest corner of the Buena Vista new growth area, Atkinson Lane new growth area, and Area C new growth area along Corralitos Creek.

Riparian habitats are of very high value to wildlife in southern Santa Cruz County. The presence of year-round water and abundant invertebrate fauna provide foraging opportunities, and the diverse habitat structure provides cover and nesting opportunities. Riparian vegetation provides habitat for a high diversity of wintering and migrating birds, such as ruby-crowned kinglets (*Regulus calendula*) and yellow-rumped warblers (*Setophaga coronata*), and breeding habitat for Neotropical migrants that breed in the region, including western warbling vireos (*Vireo swainsoni*), orange-crowned warblers (*Leiothlypis celata*), Wilson's warblers (*Cardellina pusilla*), Swainson's thrushes (*Catharus ustulatus*), and black-headed grosbeaks (*Phenicus melanocephalus*). Downy woodpecker (*Picoides pubescens*), black phoebe (*Sayornis nigricans*), and spotted towhee (*Pipilo maculatus*) are other bird species typically found in mature riparian habitats. The mixed understory in riparian habitats usually supports a variety of mammals, reptiles, and amphibians, including raccoons (*Procyon lotor*), brush rabbits (*Sylvilagus bachmani*), dusky-footed woodrats (*Neotoma fuscipes*), deer mice (*Peromyscus maniculatus*), garter snakes (*Thamnophis* spp.), and Pacific treefrogs.

Special-status wildlife species that could occur in riparian habitats in the planning area include the Santa Cruz long-toed salamander, California red-legged frog, northwestern pond turtle, yellow warbler (*Dendroica petechia*), and white-tailed kite (*Elanus leucurus*).

Coast Live Oak Woodland

Small areas of oak woodland dominated by coast live oak (*Quercus agrifolia*) occur as narrow remnant corridors just upslope of riparian areas. This habitat is best represented at Ramsey Park, on the west side of Hanson Slough, and on the east side of Harkins Slough, although isolated oak trees occur elsewhere. Coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), and herbaceous species typical of California annual grassland communities form the understory.

Approximately 1.9 acres of coast live oak woodland habitat occur within City limits. Approximately 4.4 acres of coast live oak woodland habitat occur within the new growth areas in patches, such as the south part of the Buena Vista new growth area.

Oak woodlands in southern Santa Cruz County support a considerable diversity of wildlife species. Mammals likely to be found here include western gray squirrels (*Sciurus griseus*) and dusky-footed woodrats, as well as other small rodents. Mule deer (*Odocoileus hemionus*) also occur in oak woodlands. Several avian species rely heavily on acorns for food, including acorn woodpeckers (*Melanerpes formicivorus*), California scrub jay (*Aphelocoma californica*), and California quail (*Callipepla californica*). Chestnut-backed chickadees (*Poecile rufescens*), oak titmice (*Baeolophus inornatus*), Hutton's vireos (*Vireo huttoni*), dark-eyed juncos (*Junco hyemalis*), and Nuttall's woodpeckers (*Dryobates nuttalli*) are among other birds that nest in this habitat, often taking advantage of numerous nesting cavities in mature oak trees. Several species of amphibians, such as the arboreal salamander (*Aneides lugubris*), can be found in oak woodlands, in which moisture is retained under fallen wood and in crevices in oaks. Reptiles may include the ring-necked snake (*Diadophis punctatus*) and western skink (*Plestiodon skiltonianus*).

Special-status wildlife species that could occur in oak woodlands within the planning area include the white-tailed kite.

Stream Channels and Open Aquatic Habitat

Seasonal aquatic habitat occurs within Watsonville, Struve, and Harkins sloughs, Corralitos Creek, Salsipuedes Creek, and the freshwater marsh in the Atkinson Lane new growth area. Slow-moving or stagnant areas of open water may be colonized by non-native species such as Himalayan knotweed and feathered mosquito-fern, with native aquatic emergents appearing as water levels decrease in the spring. Because the relative amount of open aquatic and wetland habitat varies seasonally within the planning area, aquatic habitat was included with wetland habitat in acreage calculations and habitat mapping.

Wildlife species likely to occur in open aquatic habitat locally include many of the species listed under freshwater marsh (above). Belted kingfishers (*Megasceryle alcyon*) and green herons (*Butorides virescens*) are also likely to forage for fish in local streams. Streams may support a variety of fishes, including native South Central California Coast steelhead and Pacific lamprey (*Entospehnus tridentatus*), and non-native mosquitofish (*Gambusia affinis*) and carp (*Cyprinus carpio*). Special-status wildlife species that could occur in aquatic habitats within the planning area include steelhead, California red-legged frogs, and western pond turtles.

Seasonal Wetlands

Seasonal wetlands occur in depressions and swales scattered across the planning area where shallow soils or underlying clay layers restrict drainage. These wetlands typically pond water during the rainy season and dry out by late spring or early summer, supporting a mix of hydrophytic vegetation such as dock (*Rumex* spp.), perennial ryegrass (*Festuca perennis*), bristly ox-tongue (*Helminthotheca echioides*), and annual rabbitsfoot grass (*Polypogon monspeliensis*). Obligate wetland species are generally less abundant, though species such as cattail may occur. In less disturbed areas, native species including tall cyperus (*Cyperus eragrostis*) and California blackberry may be present.

No seasonal wetland is mapped in the City limits. Approximately 0.2 acres of seasonal wetland is mapped within the Buena Vista new growth area. There may be additional unmapped seasonal wetland throughout grasslands in the planning area.

Seasonal wetlands provide important foraging habitat for migrating shorebirds, such as Wilson's snipes (*Gallinago delicata*), waterfowl such as mallard, gadwall (*Mareca americana*), and northern shoveler (*Spatula chipeata*), and residents species such as killdeer (*Charadrius vociferus*), snowy egret, and great egret. Mammals such raccoon, striped skunk, and mule deer are attracted to forage and drink. Seasonal wetlands provide habitat for native northwestern pond turtle, California red-legged frog, and Santa Cruz long-toed salamander, and if they retain water long enough, may support breeding amphibians.

Lake

Lake habitat occurs at Pinto Lake in the planning area. Pinto Lake is a shallow, eutrophic lacustrine habitat characterized by warm, slow-moving waters, high nutrient loading, and extensive emergent and floating vegetation. Pinto Lake receives water from Pinto Lake Creek, stormwater runoff, and groundwater seepage. Vegetation includes floating macrophytes such as pondweeds (*Potamogeton* spp.) and coontail (*Ceratophyllum demersum*). In the plan area, approximately 60.4 acres of lake is mapped within the Pinto Lake area. Pinto Lake is not within any new growth areas.

Lake habitat provides important foraging habitat for many of the same waterbird species that are found in freshwater marsh habitat, including the snowy egret, American white pelican, double-crested cormorant, pied-billed grebe, ring-billed gull (*Larus delawarensis*), California gull (*Larus californicus*), eared grebe (*Podiceps nigricollis*), western grebe (*Aechmophorus occidentalis*), American coot, mallard, gadwall (*Mareca strepera*), northern shoveler (*Spatula chipeata*), and green-winged teal (*Anas crecca*). Raptors such as osprey (*Pandion haliaetus*) are frequently observed hunting Pinto Lake for fish, and in the case of the bald eagle, waterbirds as well. Northwestern

pond turtles are also known to occur in the lake, where they both forage and utilize open areas for basking.

Riverine

Riverine habitat in the planning area is comprised of a segment of the Pajaro River about 3 miles away from the coast. Pajaro River is a low-gradient, tidally influenced alluvial river system shaped by highly variable seasonal flows and, in lower reaches, a brackish water regime created by tidal backwater from Monterey Bay. Substrates range from coarse gravels and cobbles in higher-velocity zones to sands and silts deposited along slower margins and backwaters. Riverine habitat supports sparse emergent species such as water primrose (*Ludwigia* spp.), cocklebur (*Xanthium strumarium*), watergrass (*Echinochloa* spp.), tules (*Schoenoplectus* spp.), and patches of algae, while brackish-tolerant species such as cattails and bulrush occur where tidal influence persists.

Riverine habitat supports many of the same avian species found in freshwater marsh and lake habitat. In addition, the riverine habitat supports a mix of native fish species such as the prickly sculpin (*Cottus asper*), riffle sculpin (*Cottus gulosus*), and three-spined stickleback (*Gasterosteus aculeatus*), as well as non-native species such as the largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), and bluegill (*Lepomis macrochirus*). Steelhead utilize riverine habitat while migrating up and down the Pajaro River, and depending upon salinity conditions in the Pajaro River, may also support the tidewater goby (*Encyclogobius newberryi*).

Mapping of biological resources within the plan area indicates that 1.6 acres of riverine habitat occur within the Watsonville Wastewater Treatment Plant area, while no riverine habitat is mapped elsewhere in the City limits or new growth areas.

4.4.1.3 Common Natural Communities or Artificial Communities and Wildlife Habitats

California Annual Grassland

California annual grassland, a ubiquitous community of European pasture grasses, native wildflowers, and introduced weedy forbs, occurs on well-developed, finely-textured soils that are moist or waterlogged during the winter and very dry in the summer and fall. Common dominants of non-native grassland in the planning area include ripgut brome (*Bromus diandrus*), brome fescue (*Festuca bromoides*), and wild oat (*Avena fatua*); associated forbs include filaree (*Erodium botrys*), plantain (*Plantago lanceolata*), and wild radish (*Raphanus sativus*). The diversity of plant species within this habitat varies greatly with levels of disturbance; on relatively undisturbed sites, remnant inclusions of coastal prairie may occur. Coastal prairie is one of the most endangered ecosystems in the United States (Noss et al., 1995) and is given a high priority

for conservation by CDFW. Coastal prairie contains a significant proportion of native perennial grasses, primarily purple needlegrass (*Stipa pulchra*) and California oatgrass (*Danthonia californica*), annual grass species, and a high diversity of native forbs, including several special-status species. Limited areas of coastal prairie remain at the Watsonville Airport. Populations of Santa Cruz tarplant, a federally-threatened plant species associated with this habitat, persist here as well as in degraded grassland areas.

Approximately 363.9 acres of California annual grassland habitat occur within City limits. Approximately 233.7 acres of California annual grassland habitat occur throughout the proposed new growth areas, largely in Buena Vista.

Annual grasslands provide little cover for wildlife, yet numerous species forage, and several species breed, in this habitat. Small mammals such as deer mice, California ground squirrels (*Otospermophilus beecheyi*), and Botta's pocket gophers (*Thomomys bottae*) are common residents in annual grasslands in Santa Cruz County. Larger mammals such as coyotes (*Canis latrans*) and bobcats (*Lynx rufus*) occasionally forage in this habitat as well adjacent to larger tracts of undeveloped land. A variety of birds use annual grasslands as foraging habitat, including savannah sparrows (*Passerculus sandwichensis*), horned larks (*Eremophila alpestris*), western meadowlarks (*Sturnella neglecta*), lesser goldfinches (*Spinus psaltria*), and barn swallows (*Hirundo rustica*). Western meadowlarks and mourning doves (*Zenaida macroura*) may nest in grasslands in the planning area. Raptors, such as red-tailed hawks (*Buteo jamaicensis*) and white-tailed kites commonly forage over grasslands as well. Western fence lizards (*Sceloporus occidentalis*), gopher snakes (*Pituophis catenifer*), and other snakes are also likely to occur in this habitat in the planning area.

Special-status wildlife species that could occur in grasslands in the planning area include the loggerhead shrike (*Lanius ludovicianus*) and burrowing owl. California tiger salamanders (*Ambystoma californiense*) may occur if temporary freshwater is present for breeding.

Non-native Herbaceous Habitat

Non-native herbaceous vegetation colonizes disturbed soils throughout the planning area, and is targeted for eradication along area sloughs. Common plant species include pasture grasses, fennel, poison hemlock, wild radish, black mustard (*Brassica nigra*), as well as landscape or introduced trees such as blue-gum eucalyptus and Monterey pine (*Pinus radiata*). The distinction between non-native herbaceous habitat and California grassland is not always clear, as these habitats may intergrade into one another based on level of disturbance and non-native species colonization. Both habitats tend to be dominated by annual grasses and may support Santa Cruz tarplant.

Approximately 59.1 acres of non-native herbaceous habitat occur within City limits, mainly along and above slopes of Struve and Watsonville sloughs. Approximately 0.8 acres of non-native herbaceous habitat occur throughout the new growth areas, in patches adjacent to California annual grassland habitat.

The wildlife community present in non-native herbaceous habitats depends on the type of vegetation present and on the proximity to native habitats. In general, wildlife use of non-native herbaceous habitats is likely to be similar to that of California annual grassland (above). Near wetland areas, song sparrows (*Melospiza melodia*), red-winged blackbirds, and Pacific treefrogs are likely to use this habitat. Brewer's blackbirds (*Euphagus cyanocephalus*) and house finches (*Haemorhous mexicanus*) are also species that regularly use habitats altered by humans, such as those with non-native vegetation. Reptiles likely to be found here include western fence lizards and garter snakes. Mammals that may occur here include the California vole, brush rabbit, and non-native rats (*Rattus* spp.).

The only special-status wildlife species that is likely to occur in this habitat in the planning area is the white-tailed kite, which may nest in Monterey pines or other trees.

Eucalyptus Grove

Blue-gum eucalyptus is the sole canopy species in distinct areas in the northern portion of the planning area. The large amount and chemical composition of eucalyptus litter prevents the growth of herbaceous plants, and poison oak is typically the sole species found in the understory.

Approximately 1.9 acres of eucalyptus grove habitat occur within City limits. Approximately 16.9 acres of eucalyptus grove habitat occur throughout the proposed new growth areas, in patches in Buena Vista.

Eucalyptus groves generally provide poor habitat for reptiles, amphibians, and mammals, but provide foraging and nesting habitat for a number of bird species, and roosting habitat for wintering monarch butterflies (*Danaus plexippus*). Raptors such as red-tailed hawks, red-shouldered hawks (*Buteo lineatus*), and great-horned owls (*Bubo virginianus*) often nest in eucalyptus groves. Yellow-rumped warblers, hooded orioles (*Icterus cucullatus*), Anna's hummingbirds (*Calypte anna*), and a variety of other birds forage on eucalyptus flowers, or on insects in these trees.

Special-status species that may occur in eucalyptus groves include white-tailed kites and monarch butterflies.

Agricultural

Irrigated fields of strawberry, raspberry, and lettuce, as well as extensive apple orchards, occur in the planning area. The Highway 1 Gateway new growth area, Area C new growth area, much of the Atkinson Lane new growth area, and the northwestern portion of the Buena Vista new growth area are cultivated (Figure 4.4-1). Native vegetation has long since been eradicated from these areas through tillage practices and herbicide treatment.

Agricultural lands generally support few wildlife species, because of the lack of diversity in vegetation and foraging opportunities. California ground squirrels often occur along margins of cropland, and raptors such as red-tailed hawks often forage for ground squirrels over this habitat. Fallow fields can attract other foraging birds, including brewer's blackbirds (*Euphagus cyanocephalus*), red-winged blackbirds (*Agelaius phoeniceus*), and killdeer. A pair of osprey is known to nest on a power pole within agricultural fields in the Highway 1 Gateway new growth area.

The only special-status wildlife species that may occur in agricultural fields in the planning area is the burrowing owl.

Developed Land

The majority of the planning area consists of low- to high-density residential development, commercial and industrial infrastructure, and landscaped parks and hardscape. Vegetation in these areas is maintained for aesthetic purposes and consists of many exotic or horticultural species, as well as planted native trees. Common species include blue-gum eucalyptus, cheesewood (*Pittosporum* spp.), plane tree (*Platanus* sp.), Monterey and other California-native pines, and fruit trees. Native herbaceous vegetation is absent from developed areas.

Developed habitats can support certain wildlife species adapted to the unique nesting and foraging opportunities found there, but wildlife abundance and diversity is generally low. Striped skunks, raccoons, non-native rats, and Virginia opossums (*Didelphis virginiana*) occur regularly in urban habitats. Bird species adapted to the urban landscape include house finch, northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), and non-native European starling (*Sterna vulgaris*), house sparrow (*Passer domesticus*), and rock pigeon (*Columba livia*).

The only special-status wildlife species with the potential to occur in developed habitats in the planning area is the pallid bat (*Antrozous pallidus*).

Special-Status Species

Special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS or NMFS under the Federal Endangered

Species Act; those listed or candidates for listing as rare, threatened, or endangered by CDFW under the California Endangered Species Act; animals designated as “Species of Special Concern” by CDFW; animals fully protected in California under the California Fish and Game Code, and CDFW Special Plants, specifically those with a California Rare Plant Rank of 1A, 1B and 2 as assigned by the California Native Plant Society (CNPS) online Inventory of Rare and Endangered Plants of California (2025). A number of special-status wildlife species are also considered to be of “local concern” by the County of Santa Cruz. Animals in this category are of concern because they have limited distributions, are experiencing local or regional population declines, are vulnerable to current or future threats to their preferred habitat, and/or are of unusual scientific, recreational, or educational value.

Data used to characterize the biological resources on and adjacent to the plan area included aerial photographs, topographic maps, and accepted scientific texts to identify species. Other data on biological resources were collected from numerous sources, including relevant literature, maps of natural resources, and queries of the Information for Planning and Consultation system (IPaC; USFWS 2025a), California Natural Diversity Database (CNDDDB; CNDDDB 2025), and online Inventory of Rare and Endangered Plants of California (Inventory; CNPS 2025). The query of these data sources was conducted in August 2025 for a 5-mile radius for IPaC, and for the USGS Watsonville West and 7 surrounding 7.5-minute series quadrangles for CNDDDB and Inventory.¹ Standard queries of the CNDDDB and Inventory include eight surrounding quadrangles; however, one of the quadrangles surrounding Watsonville West quadrangle is entirely within the Pacific Ocean and was not included in this analysis. The Critical Habitat Mapper (USFWS 2025b), National Wetlands Inventory (USFWS 2025c), and eBird (The Cornell Lab of Ornithology 2025) were also queried.

A target list of special-status plant and animal species that could potentially occur in the plan area was developed based on the outcome of the database queries and resultant lists of special-status species that were reviewed by H. T. Harvey’s regional biological experts for accuracy and completeness. The final list of special-status species and sensitive natural communities was evaluated based on documented occurrences in the eleven-quadrangle search area and biologists’ expert opinions on species known to occur in the region.

Table 5.3-2 identifies special-status species known to occur in the vicinity of Watsonville and with potential to occur within the planning area. This table also summarizes the legal status, distribution, and habitat for each special-status species.

Special-Status Plant Species

In the previous biological study for the Watsonville General Plan (HTH 2005), a query of the California Natural Diversity Database (CNDDDB) was performed prior to field surveys to

identify species potentially occurring in the Watsonville area. Specific habitats specified in the query included valley and foothill grasslands, marshes and swamps, valley and foothill riparian, and cismontane woodland. These California Native Plant Society (CNPS) designated habitats were chosen for the similarity of their constituent species to those in the planning area. In addition, the CNPS's *Inventory of Rare and Endangered Plants of California* (2000) was used to identify and assess additional species occurring in similar habitats throughout Santa Cruz County. Additional sources of information included *An Illustrated Field Key to the Flowering Plants of Monterey County* (Matthews 1997) and the *Flora of the Santa Cruz Mountains* (Thomas 1961), and existing environmental documents. Three species, Santa Cruz tarplant (*Holocarpha macradenia*), Gaidner's yampah (*Perideridia gaidneri* ssp. *gaidneri*), and saline clover (*Trifolium depauperatum* var. *hydrophilum*), were determined to have potential to occur within the planning area.

In this current biological study, we considered additional plant species by querying fourteen quadrangles surrounding the plan area, including *Loma Prieta*, *Watsonville West* and *Watsonville East*, in the CNDDDB database (2025). Ninety-six special-status plant species occur in the fourteen-quadrangle area including and surrounding the plan area. One species did not appear in the fourteen-quadrangle search, but a record exists within the plan area. Eighty-eight of these species were determined to be absent from the within the plan area due to a combination of factors including absence of suitable habitat, lack of specific microhabitat or soil requirements, such as serpentine, alkaline, or sandy soils, and/or the elevation range of the species outside the range of the plan area (Appendix A).

Reconnaissance-level surveys were conducted on July 24, 2025 and December 3, 2025 for habitats capable of supporting special-status plant species. A query of the California Natural Diversity Database (CNDDDB) was performed prior to field surveys to identify species potentially occurring in the Watsonville area, as shown in Figure 4.4-3. Specific habitats specified in the query included valley and foothill grasslands, marshes and swamps, valley and foothill riparian, and cismontane woodland. These California Native Plant Society (CNPS) designated habitats were chosen for the similarity of their constituent species to those in the planning area. In addition, the CNPS's *Inventory of Rare and Endangered Plants of California* (2000) was used to identify and assess additional species occurring in similar habitats throughout Santa Cruz County. Additional sources of information included *An Illustrated Field Key to the Flowering Plants of Monterey County* (Matthews 1997) and the *Flora of the Santa Cruz Mountains* (Thomas 1961), and existing environmental documents.

Those special-status species for which suitable habitat occurs in the plan area are listed in Table 4.4-3. Eight CNPS-ranked species, including California bottle-brush grass (*Elymus californicus*), Gaidner's yampah (*Perideridia gaidneri* ssp. *gaidneri*), harlequin lotus (*Hosackia gracilis*),

Hickman's popcorn flower (*Plagiobothrys chorisianus* var. *hickmanii*), Mexican mosquito fern (*Azolla microphylla*), saline clover (*Trifolium depauperatum* var. *hydrophilum*), Santa Cruz tarplant, and western leatherwood (*Dirca occidentalis*), are known or have potential to occur within the planning area. Expanded descriptions for these species are presented below.

California bottle-brush grass (*Elymus californicus*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.3. California bottle-brush grass is a perennial bunchgrass in the Poaceae family native to broadleaved upland forest, cismontane woodland, North Coast coniferous forest and riparian woodland habitats. The species is characterized by its loosely tufted growth form, slender stems, and inflorescences resembling bottle brushes. Dense spikelets with awns that give the flowering head a bristled appearance. Flowering generally occurs from May to August. California bottle-brush grass is distributed primarily in the Coast Ranges from Marin County south to Santa Clara County, with one older record further south in Monterey (Calflora 2025).

In the plan area, potential habitat occurs in the Browns Valley Intake area along Browns Creek in riparian woodland habitat. The riparian woodland habitat in the Browns Valley Intake area is described in Section 4.4.1.2, Existing Conditions.

Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*). Federal Listing Status: None; State Listing Status: None; CNPS List 4. Gairdner's yampah is a tuberous perennial plant in the carrot family (Apiaceae) associated with moist soils along the coast. Plants have pinnately dissected leaves and erect flowering stems. Flowers are produced during June and July in a compound umbel, a type of radiate floral cluster characteristic of the family. Gairdner's yampah can be distinguished from common species of yampah occurring in Santa Cruz County by the type of leaf divisions and the shape of its fruit.

Gairdner's yampah occurs in coastal counties from Mendocino south to San Luis Obispo; it is considered a "plant of limited distribution" by CNPS, and can be locally abundant in the northern portion of its range. Little published data are available on the distribution of this species in Watsonville area. Like Santa Cruz tarplant, Gairdner's yampah favors heavy soils that retain water longer into the dry season. Suitable habitat for this species occurs in the mesic grasslands adjacent to sloughs and creeks, which includes at the edge of the freshwater marsh in the Atkinson Lane new growth area, or edge of Corralitos Creek in the Atkinson Lane and Area C new growth areas. Suitable habitat may also occur in riparian woodland in the Buena Vista new growth area.

Harlequin lotus (*Hosackia gracilis*). Federal Listing Status: None; State Listing Status: None; CNPS List 4. Harlequin lotus is a perennial plant in the legume family (Fabaceae) found in coastal habitats, particularly in areas with sandy or gravelly soils. This species is characterized by its trifoliate leaves and showy clusters of bright yellow to orange pea-like flowers, which bloom from March to July. The flowers are arranged in an umbel, a type of inflorescence where flowers arise from one central point. Harlequin lotus can be differentiated from other similar species in the region by its petal claw exerted from the calyx tube and 3-parted bracts.

Harlequin lotus is primarily found along the central and southern coast of California, from Monterey County to Santa Barbara County. It is considered a species of special concern due to its restricted range and the loss of suitable habitat. The plant thrives in coastal scrub and grassland communities, particularly in areas with well-drained, low-nutrient soils. Like many coastal plants, Harlequin lotus is adapted to the harsh, dry conditions of the area, and its ability to withstand salt and drought makes it a resilient presence in these ecosystems. In the new growth areas, suitable habitat is present in disturbed habitats near the edge of Corralitos Creek in the Atkinson Lane and Area C new growth areas.

Hickman's popcornflower (*Plagiobothrys chorisianus* var. *hickmanii*). Federal Listing Status: None; State Listing Status: None; CNPS List 4. Hickman's popcornflower is a rare, perennial herb in the borage family (Boraginaceae) endemic to the coastal regions of central California. This plant is typically low-growing with small, white flowers, which resemble popcorn kernels, and are arranged in coiled clusters called cymes. These delicate flowers bloom between April and June. Hickman's popcornflower can be distinguished from other members of its genus by the shape and scarring of its nutlets.

Hickman's popcornflower is found primarily in the coastal areas of Santa Cruz and Monterey Counties, often in moist, disturbed habitats such as vernal pools, salt marshes, and floodplains. It is considered a species of conservation concern due to its limited distribution and vulnerability to habitat destruction. Suitable habitats are typically located in low-lying areas with heavy clay or alkaline soils that retain moisture during the wet season, allowing the plant to flourish during springtime before the hot, dry summer months. Suitable habitat for this species occurs in the ephemeral habitats along riparian woodland or freshwater marsh habitat, which includes at the edge of the freshwater marsh in the Atkinson Lane new growth area, or along the periphery of Corralitos Creek in the Atkinson Lane and Area C new growth areas.

Mexican mosquito fern (*Azolla microphylla*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.2. Mexican mosquito fern is a small, free-floating aquatic fern in the Azollaceae family that forms dense mats on the surface of still or slow-moving freshwater systems. It is identifiable by its minute, overlapping, scale-like leaves that give the

plant a velvety texture, and its ability to fix atmospheric nitrogen through symbiosis with the cyanobacterium *Anabaena azollae*. The species typically appears reddish to dark green depending on environmental conditions. This species occurs in ponds, sluggish streams, ditches, and marshes throughout California, though it is considered rare or uncommon in many regions due to habitat alteration, eutrophication, and competition from non-native aquatic plants.

Although it does not appear in the fourteen-quadrangle search, a record of Mexican mosquito fern exists at Pinto Lake, observed by C.J. Rothfels in 2021 at the north end of the lake (Calflora 2025). The lake's calm, nutrient-influenced waters provide suitable conditions for the species, particularly along sheltered coves and margins where water movement is minimal. In the plan area, suitable habitat for Mexican mosquito fern occurs in the Pinto Lake area.

Saline clover (*Trifolium depauperatum* var. *hydrophyllum*). **Federal Listing Status: None; State Listing Status: None; CNPS List 1B.** Saline clover is a small, somewhat fleshy plant in the pea family (Fabaceae) with pink to purple flowers appearing from April through June. Populations are found along the coast from Sonoma County south to San Luis Obispo, as well as in the inland counties of Solano and Colusa. Saline clover requires moist soils, occurring on the edges of salt marshes and within alkali meadow. Populations of saline clover occur along Elkhorn and Moro Cojo Sloughs and associated wet meadows south of Watsonville, and at Soda Lake, a rare alkaline habitat north of Highway 129 near where it crosses the Pajaro River. This species has never been observed in the Watsonville Slough System or elsewhere in City limits, but has a low potential for occurrence in seasonal wetlands or freshwater marsh within the Atkinson Lane and Buena Vista new growth areas.

Santa Cruz tarplant (*Holocarpha macradenia*). **Federal Listing Status: Threatened; State Listing Status: Endangered; CNPS List 1B.** Santa Cruz tarplant is an aromatic, resinous annual herb in the aster family (Asteraceae) associated with coastal prairie and grassland habitats along the central California coast. Historically a member of the coastal prairie community, Santa Cruz tarplant is now most frequently found within non-native annual grassland. Common associates include wild oat, foxtail barley (*Hordeum murinum*), rattlesnake grass (*Briza maxima*), and other introduced grasses. Native associates include California oatgrass, rushes, and other tarplants in the genus *Hemizonia*. Populations occur on sandy or sandy-loam soils on marine terrace platforms that are separated by steep gulches, including the Watsonville, Tierra, Elkhorn, Santa Inez, and Pinto series (USFWS 2014). These soils typically have a subsurface clay component, whose moisture-retentive properties may reduce competition from plants favored by well-drained soils (67 Federal Register 36968-64007). Once known from as far north as Marin County (CNPS 2001), native populations of Santa Cruz tarplant are currently restricted to Santa Cruz and northern Monterey counties within the San Lorenzo-Soquel, Pajaro, and Alisal-

Elkhorn Slough watersheds. Approximately 21 populations are considered extant (CNDDB 2025).

Within the new growth areas, important populations of Santa Cruz tarplant occur at on the east side of Larkin Valley Road within Buena Vista. Within City limits, though outside the new growth areas, Santa Cruz tarplant occurs at several locations including the Watsonville Municipal Airport, near Harkins Slough, and within the Apple Hill and Bay Breeze development areas, where portions of habitat were set aside as part of the development projects. Furthermore, 309 acres of federally designated Critical Habitat for Santa Cruz tarplant occur in City limits at the airport and Pajaro Valley High School.

Western leatherwood (*Dirca occidentalis*). **Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2.** Western leatherwood is a rare deciduous shrub in the Thymelaeaceae family, endemic to the San Francisco Bay Area. It is recognized by its smooth, yellow-green branches; pliable, leathery bark; and broadly elliptic leaves. Early spring blooms consist of clusters of small, fragrant, yellow tubular flowers that emerge before leaf-out. The species can be distinguished from other shrubs by its unique flexible stems and early flowering phenology. Flowering occurs from January to March. *Dirca occidentalis* is highly range-restricted, occurring in scattered populations along the inner Coast Ranges surrounding the Bay Area, typically on shaded slopes, riparian margins, and mixed hardwood forests with well-drained but moisture-retentive soils. Suitable habitat for western leatherwood occurs in the Browns Valley Intake area.

Table 4.4-2. Special-Status Plant and Animal Species, Their Status, and Potential Occurrence in the Plan Area

Name	*Status	Habitat	Potential for Occurrence in or Adjacent to the Plan Area
Federal or State Endangered, Threatened, or Candidate, or CNPS-Ranked Plant Species			
Santa Cruz Tarplant (<i>Holocarpha macradenia</i>)	FT, SE, CNPS 1B.1	Coastal prairie, Coastal scrub, Valley and foothill grassland	Present. Numerous documented occurrences within the planning area.
Harlequin lotus (<i>Hosackia gracilis</i>)	CNPS 4.2	Broadleafed upland forest, Cismontane woodland, Closed- cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland	May be Present. Not documented to occur in the planning area, but suitable habitat present within seasonal wetlands throughout grasslands in new growth areas: edge of freshwater marsh in the Atkinson Lane new growth area, or edge of riparian woodland habitats along Corralitos Creek.
Gairdner's yampah (<i>Perideridia gairdneri</i> ssp. <i>Gairdneri</i>)	CNPS 4.2	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools	May be Present. Potentially occurs in mesic grassland in the planning area, in California annual grassland near riparian woodland, or in riparian woodland along Corralitos Creek.
Hickman's popcorn- flower (<i>Plagiobothrys</i> <i>chorisianus</i> var. <i>hickmanii</i>)	CNPS 4.2	Chaparral, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps, Vernal pools	May be Present. Not documented to occur in the planning area, but suitable habitat present within riparian woodland openings along Corralitos Creek, or at the edge of freshwater marsh in Atkinson Lane new growth area.

Name	*Status	Habitat	Potential for Occurrence in or Adjacent to the Plan Area
Saline clover (<i>Trifolium depauperatum</i> var. <i>hydrophilum</i>)	CNPS 1B.2	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools	May be Present. Not documented to occur in the planning area, but suitable habitat present within seasonal wetlands of the Watsonville Slough system, or freshwater marsh in Atkinson Lane new growth area.
Federal or State Endangered, Threatened, Proposed, or Candidate Animal Species, and California Species of Special Concern			
Monarch butterfly (<i>Danaus plexippus</i>)	FC	Adults forage on a wide variety of flowers for nectar and occur in a variety of habitats, but egg-laying and larval development occurs on milkweeds, which are more limited in distribution. Typically roosts on the branches and leaves of trees which receive appropriate sun exposure and thermal buffering.	Present. Milkweed has been observed in the plan area, therefore this species could breed here. The closest documented overwintering sites are located at Seascape Golf Course and New Brighton/Potbelly in Aptos, approximately 4.6 miles northwest and 7.3 miles northwest of the plan area, respectively. No overwintering sites are known from the plan area (Xerces Society for Invertebrate Conservation 2025). Individuals occur throughout the plan area as migrants, but this species is not known or expected to form large roosts, and would likely only breed in the plan area where milkweeds naturally occur or have been ornamentally planted.
South-Central California coast ESU steelhead (<i>Oncorhynchus mykiss</i>)	FT, SSC	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	Present. Occurs in Pajaro River and its tributaries in the plan area, including Corralitos Creek and Salsipuedes Creek.
Santa Cruz long-toed salamander (<i>Ambystoma macrodactylum croceum</i>)	FE, SE	Wet meadows near sea level in a few restricted locales in Santa Cruz and Monterey counties.	May be Present. This species is known to occur near the plan area at three subpopulation complexes, including the Larkin Valley Complex, Ellicott-Buena Vista Complex, and Freedom Complex. Known breeding ponds in the Larkin Valley Complex include Calabasas Pond near the intersection of White Road and Larkin Valley Road, as well as Suess Pond, Olives Pond, and Winterwind Way on private property (USFWS 2019). Within the Ellicott-Buena Vista Complex, breeding ponds include the Ellicott Pond and Buena Vista Pond in the Santa

Name	*Status	Habitat	Potential for Occurrence in or Adjacent to the Plan Area
			Cruz Long-Toed Salamander Ecological Reserve and Prospect Pond in the Ellicott Slough National Wildlife Refuge, all located approximately 0.6-0.8 miles northwest from the Buena Vista Landfill (CNDDDB 2025). Additional breeding in this pond may also occur at several ponds on private property. At the Freedom Complex, breeding is known to occur at the Millsap Pond (managed by CDFW) and Merk Pond, and may also occur at several ponds on private property. Due to the presence of suitable breeding habitat on private property in all three complexes, including the Larkin Valley complex that has not been adequately surveyed for Santa Cruz long-toed salamanders, additional breeding sites may occur in these complexes. If located within 3,199 feet, the maximum distance at which this species has been recorded dispersing from a known breeding pond (Stemle et al. 2024), dispersing individuals could occur in upland habitats within the Buena Vista new growth area.
California tiger salamander (<i>Ambystoma californiense</i>)	FT	Breeds in seasonal and perennial pools/ponds in grasslands or open woodlands; spends most time in subterranean refugia such as small mammal burrows or deep rock crevices.	May be Present. This species is known to occur in Ellicott Pond and Buena Vista Pond in the Santa Cruz Long-Toed Salamander Ecological Reserve and Prospect Pond in the Ellicott Slough National Wildlife Refuge located approximately 0.6-0.8 miles northwest from the Buena Vista Landfill (CNDDDB 2025). There are no other recent records from the rest of the planning area; could potentially occur in wetlands and adjacent grasslands in the Buena Vista new growth area.
California red-legged frog (<i>Rana draytonii</i>)	FT, SSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation	Present. This species is known to occur in Ellicott Pond and Buena Vista Pond in the Santa Cruz Long-Toed Salamander Ecological Reserve and Galligan Slough, located approximately 0.6-0.8 miles northwest from the Buena Vista Landfill (CNDDDB 2025). Few records from within the rest of the planning area, but known to occur in Struve Slough and Watsonville Slough. One adult found dead on the road in

Name	*Status	Habitat	Potential for Occurrence in or Adjacent to the Plan Area
			the Buena Vista new growth area away from wetlands following rain (CNDDDB 2025). May occur in other wetlands.
Foothill yellow-legged frog (<i>Rana boylei</i>)	FT, SE	Shallow rocky streams, freshwater pools, and ponds with emergent or overhanging vegetation	Absent. There are historic collection records of this species from 1920 in upper Corralitos Creek and from 1970 in Harkins Slough, and extant populations are known to occur in a tributary of the Pajaro River on the east side of the Santa Cruz Mountains and in Soquel Creek 10 miles west of the plan area (CNDDDB 2025). Creeks in the plan area have been heavily modified and do not currently provide suitable habitat. Furthermore, due to the intervening distance between current populations of this species and the plan area, it is unlikely that this species would disperse to nearby waters. Therefore, this species is considered absent.
Northwestern pond turtle (<i>Emys marmorata</i>)	FPT, CSSC	Permanent or nearly permanent water in a variety of habitats	Present. This species is known to occur in Struve Slough, at Pinto Lake, freshwater marsh in the Atkinson Lane new growth area, and along the Pajaro River up and downstream of the Watsonville Wastewater Treatment Plant. Additional suitable aquatic habitat is present in freshwater marsh in Watsonville Slough and seasonal wetland in the Buena Vista new growth area. Adults and nests may be found in California annual grassland habitat within approximately 328 feet of aquatic habitats.
Central California Coast coho salmon (<i>Oncorhynchus kisutch</i>)	FT, ST	Open ocean, estuaries, and rivers	Absent. Central California Coast coho salmon occurred historically in the nearby San Lorenzo watershed, but the San Lorenzo River and its tributaries no longer support natural occurrences of coho (CNDDDB 2025). It is unclear if the Pajaro River watershed ever supported coho salmon, but it is considered unsuitable for this species due to the lack of cool, low-gradient rearing habitat and regular access to the watershed. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence in or Adjacent to the Plan Area
Western bumble bee (<i>Bombus occidentalis</i>)	SC	Meadows and grasslands with abundant floral resources.	Absent. Although the species was historically found throughout much of central and northern California (CDFW 2019), including the plan area, it is not expected to occur there due to recent range contractions. Further, this species has not been observed in the plan area since the 1960s (CNDDDB 2025).
Crotch's bumble bee (<i>Bombus crotchii</i>)	SC	Grasslands and shrublands with abundant floral resources, undisturbed nesting and overwintering sites.	Absent. Although the species was historically found throughout much of central California and portions of northern California (CDFW 2019), including the plan area, it is not known to occur in the plan area due to recent range contractions and lack of suitable habitat. The closest recent observation of this species was in 2025 at Pleasure Point Park, approximately 9.2 miles west from the plan area (iNaturalist 2025).
Bald eagle (<i>Haliaeetus leucocephalus</i>)	SE, SP	Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or in cliffs, occasionally on electrical towers; feeds mostly on fish and waterfowl	Present. Bald eagles attempted to nest unsuccessfully near the plan area at Pinto Lake in 2012 (CNDDDB 2025). Since 2014, they have nested in most years in a eucalyptus grove along Gallighan Slough, located approximately 0.5 miles east of the Buena Vista Landfill (Santa Cruz Bird Club 2014, Cornell Lab of Ornithology 2025). This species is occasionally observed hunting in Struve Slough and Watsonville Slough (Cornell Lab of Ornithology 2025).
Burrowing owl (<i>Athene cunicularia</i>)	SC, CSSC	Prefers grasslands and ruderal habitats, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels; owls use the abandoned burrows of ground squirrels for shelter and nesting.	May be Present as a Non-Breeder. May occur in agricultural and grassland habitats in the planning area during the non-breeding season, especially in the Highway 1 Gateway new growth area. The probability of occurrence as a breeder is very low.

Name	*Status	Habitat	Potential for Occurrence in or Adjacent to the Plan Area
Pacific lamprey (<i>Entosphenus tridentatus</i>)	CSSC	Medium- and large-sized, low-gradient cold rivers and streams, with a wide range of habitats (e.g., gravel, low-gradient riffles).	Present. This species is known to occur in the lower Pajaro River and Corralitos Creek adjacent to the planning area (Boyce et al. 2022, iNaturalist 2025).
Monterey hitch (<i>Lavinia exilicauda harengus</i>)	CSSC	Warm, lowland, waters including clear streams, turbid sloughs, lakes, and reservoirs.	Present. This species is known to occur widely in the Pajaro River watershed, including in Salsipuedes Creek and Pajaro River adjacent to the plan area.
Southern coastal roach (<i>Hesperoleucus venustus subditus</i>)	CSSC	Generally found in small streams, they are well-adapted to intermittent watercourses (e.g., tolerant of high temperatures and low oxygen levels).	Present. This species is found in Corralitos Creek and Salsipuedes Creek, but no longer occurs in the mainstem of the Pajaro River (Baumsteiger and Moyle 2019).
Northern harrier (<i>Circus hudsonius</i>)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas	Present. Occurs in planning area as a forager in freshwater marsh and California annual grassland habitats, and may possibly breed in more remote freshwater marsh in the planning area.
Yellow warbler (<i>Setophaga petechia</i>)	CSSC (nesting)	Nests in riparian woodland	Present. This species breeds in riparian woodland habitat throughout the planning area.
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	CSSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats	Present. This species may occasionally nest in large expanses of California annual grassland in the planning area, such as adjacent to the West Branch Struve Slough. It may also occur as a forager in California annual grassland and the edge of freshwater marsh throughout the planning area.
Tricolored blackbird (<i>Agelaius tricolor</i>)	ST	Highly colonial nester that establishes dense breeding colonies in emergent vegetation, grain fields, fallow fields,	Present. This species is not currently known to nest within the planning area, but suitable habitat is present in freshwater marsh. This

Name	*Status	Habitat	Potential for Occurrence in or Adjacent to the Plan Area
		extensive thickets of blackberry, ruderal vegetation such as mustard or thistle, and occasionally in early-successional riparian habitat. Nesting colonies usually are located near fresh water.	species occurs as a forager in freshwater marsh, California annual grassland, and agricultural fields.
American badger (<i>Taxidea taxus</i>)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas	Absent. Primarily occurs in extensive grasslands and scrub habitats. This species is known to occur in the Santa Cruz Mountains (CNDDDB 2025, iNaturalist 2025). There is one record of this species from 1909 in Larkin Valley, approximately 0.8 mile west of the planning area, and a recent record further to the west in Aptos, but no records in the planning area. Badgers are not expected to occur in the planning area or establish a den there due to habitat fragmentation and disturbance. Determined to be absent.
Pallid bat (<i>Antrozous pallidus</i>)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees	May be Present. This species is known to occur around Elkhorn Slough (Caffrey et al. 2001), approximately three miles south of the plan area. Although it has not been confirmed in the plan area, it could forage over a variety of habitats in the planning area and roost in larger trees or in buildings in the planning area.
Western red bat (<i>Lasiurus frantzii</i>)	CSSC	Roosts in foliage in forest or woodland habitat, especially in or near riparian habitat.	May be Present as a Non-Breeder. This species may occur as a migrant and winter resident but does not breed in the plan area. Individual red bats may roost within foliage of trees in riparian woodland habitat in the planning area, especially along Corralitos Creek and in the Buena Vista new growth area.
Townsend's big-eared bat	CSSC	Roosts in caves, mine tunnels, and occasionally in deep crevices in trees such as redwoods or in	May be Present as a Non-Breeder. This species may occur as a migrant and winter resident in abandoned or unused buildings and large coast redwood (<i>Sequoia sempervirens</i>) trees, but is not known to

Name	*Status	Habitat	Potential for Occurrence in or Adjacent to the Plan Area
<i>(Corynorhinus townsendii)</i>		abandoned buildings, in a variety of habitats.	breed in the planning area due to lack of suitable habitat and high levels of disturbance.
Golden eagle <i>(Aquila chrysaetos)</i>	SP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas	Present as Non-Breeder. Golden eagles are not known to nest in the planning area, but they occur as foragers over California annual grassland and agricultural lands in the planning area.
White-tailed Kite <i>(Elanus leucurus)</i>	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats	Present. This species likely nests at the edge of riparian woodlands, live oak woodlands, and California annual grassland habitats with suitable nesting trees and large shrubs adjacent to open foraging habitat.

SPECIAL-STATUS SPECIES CODE DESIGNATIONS

CNPS 1B.1 =	Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California and elsewhere.
CNPS 1B.2 =	Plants rare, threatened, or endangered in California and elsewhere; moderately threatened in California and elsewhere.
CNPS 4.2 =	Plants of limited distribution; moderately threatened in California.
FE =	Federally listed Endangered
FT =	Federally listed Threatened
FE =	Federally listed Endangered
FT =	Federally listed Threatened
FPT =	Federal proposed Threatened
SE =	State listed Endangered
ST =	State listed Threatened
SC =	State Candidate for listing
CSSC =	California Species of Special Concern
SP =	State Fully Protected Species

Special-Status Wildlife Species

Based on the database and literature review, 35 special-status wildlife species occur in the eleven-quadrangle area including and surrounding *Watsonville West* and *Watsonville East*. Given the urbanized condition of the plan area, it does not contain adequate habitat to support the 35 special-status wildlife species. A number of these species, primarily birds, have a low potential to occur within the plan area for brief periods of time as they disperse from more suitable habitat surrounding the plan area. For the purposes of CEQA analysis, non-listed special-status species with low potential to occur on site will not be addressed further.

Reconnaissance-level surveys were conducted in July 2025 for habitats capable of supporting special-status wildlife species. A query of the California Natural Diversity Database (CNDDB) was performed prior to field surveys to identify species potentially occurring in the Watsonville area, as shown in Figure 4.4-4. Special-status wildlife species that are likely to occur in the planning area are listed in Table 4.4-3. This list includes federally and state listed species, species of special concern, and state-protected species. These species are described below, but expanded accounts are provided only for species that are of highest concern.

Several bird species that have special-status only at breeding sites could pass through the planning area during migration or occur as winter visitors. However, breeding habitat for these bird species is not present in the planning area. These include the American white pelican (*Pelecanus erythrorhynchos*), Vaux's swift (*Chaetura vauxi*), and black swift (*Cypseloides niger*). Other bird species that do not breed locally, but have special-status even away from breeding areas, could occur in the General Plan area. Several of these species are relatively uncommon locally, and are unlikely to be affected by plan implementation, including the California condor (*Gymnogyps californianus*), mountain plover (*Charadrius montanus*), willow flycatcher (*Empidonax traillii*), least Bell's vireo (*Vireo bellii pusillus*), and bank swallow (*Riparia riparia*).

Animal species that are likely to breed within the planning area, are likely to be affected by General Plan implementation, or may be of particular concern to state and federal agencies, are described below.

4.4.1.4 Federal or State Endangered or Threatened Species

Steelhead (*Oncorhynchus mykiss*), South-Central California Coast ESU. Federal Listing Status: Threatened; State Listing Status: Species of Special Concern. The steelhead is an anadromous form of rainbow trout that migrates upstream from the ocean to spawn. Steelhead usually migrate upstream to spawning areas in late fall or early winter, when flows are sufficient to allow them to reach suitable habitat in far upstream areas. Spawning occurs between December and June. Steelhead eggs remain in gravel depressions, known as redds, for one and one-half to four months before hatching. After hatching, young steelhead use the deeper reaches of streams as rearing areas, and will remain in freshwater for one to four years before migrating to the ocean. After migration, steelhead typically grow rapidly for two to three years before returning to freshwater streams to spawn. Unlike other salmonids, steelhead do not necessarily die after spawning. Many adults survive and return to the ocean after spawning, coming back to spawn for one or more additional seasons.

Steelhead usually spawn in clear, cool, perennial sections of relatively undisturbed streams. Preferred streams typically support dense canopy cover that provides shade, woody debris, and organic matter. Streams in which

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spawning occurs are usually free of rooted or aquatic vegetation. Gravel substrates are the optimum spawning habitat. Steelhead usually cannot survive long in pools or streams with water temperatures above 70°F. Despite their general requirement for cool water, steelhead can use warmer habitats if food is available, such as at fast water riffles where fish can feed on drifting insects.

Steelhead populations have declined due to degradation of spawning habitat, introduction of barriers to upstream migration, over-harvesting by recreational fisheries, and reduction in winter flows due to damming and spring flows due to water diversion. Steelhead and other salmonids have been categorized into subpopulations, or Evolutionarily Significant Units (ESUs). In 1997, the National Marine Fisheries Service published a final rule to list the South-Central California Coast ESU of the steelhead as threatened under the FESA. This ESU includes all steelhead spawning from the Pajaro River south to (but not including) the Santa Maria River. In 2005, NMFS designated critical habitat for this and other ESUs as areas documented as occupied at the time of listing within the range of each listed ESU (NOAA Fisheries 2005). Ecology of southern steelhead (including the South/Central California Coast ESU) differs slightly from northern steelhead. Southern steelhead can cope with higher water temperatures, but because southern coastal streams may become very warm, Southern steelhead probably spend more time at-sea than their northern counterparts.

The Pajaro River supports a substantial population of steelhead (Busby et al. 1996, Boughton et al. 2006). Steelhead use accessible tributaries of the Pajaro River as well, including Corralitos Creek and Salsipuedes Creek. All three of these waterways are designated as critical habitat. Migrating steelhead are likely to occur in the Pajaro River and its tributaries during periods of high flow, and suitable habitat for juvenile steelhead also occurs in the shaded portions of these waterways that retain water year-round.

California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern. The California red-legged frog is a medium-sized frog that is generally restricted to riparian and lacustrine habitats in California and northern Baja California. Red-legged frogs prefer deep, calm pools (usually more than 2.3 feet deep) in creeks, rivers, or lakes below 4921 feet in elevation (Jennings and Hayes 1994). Habitat requirements include fresh emergent, or dense, riparian vegetation, especially willows adjacent to shorelines. Predators such as non-native fishes and bullfrogs (*Rana catesbeiana*) can extirpate local populations of red-legged frogs. Red-legged frogs can survive in seasonal bodies of water that are dry for short periods if a permanent water body or dense vegetation stands are nearby.

Adult red-legged frogs are normally active at night and breed in still water during the late winter or early spring after waters recede. Females attach eggs in a single cluster to a vegetation brace just under the surface of the water. The eggs hatch in just over a week and the resulting larvae feed on plant and animal material on the bottom of the pond. It takes at least four months for the larvae to metamorphose into juvenile frogs. On rare occasions, larvae overwinter before metamorphosing.

The USFWS listed the California red-legged frog as threatened in 1996, due to continued habitat degradation throughout the species' range, and population declines. Critical habitat for this species was designated in 2001 and revised in 2010 (USFWS 2010). Within the planning area, red-legged frogs have been found at Struve Slough (near Ohlone Parkway) and at Watsonville Slough at Harkins Slough Road and Lee Road (CNDDB 2025). The portions of Struve Slough and Watsonville Slough located west of Highway 1 (except a narrow reach of

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Watsonville Slough located between developed and agricultural land in the Highway 1 Gateway new growth area) are designated as critical habitat (USFWS 20210). Potentially suitable habitat exists at several other sites, including the pond near the Atkinson Lane new growth area, Buena Vista new growth area, and in riparian habitat along Corralitos Creek and Salsipuedes Creek. One dead individual was observed on Buena Vista Drive approximately 0.4 miles west of Watsonville Airport (CNDDDB 2025). This individual was found run over in the road after rain and was likely dispersing, providing confirmation that this species may occur in the Buena Vista new growth area.

Santa Cruz Long-toed Salamander (*Ambystoma macrodactylum croceum*). Federal Listing Status: Endangered; State Listing Status: Endangered. The Santa Cruz long-toed Salamander (hereafter long-toed salamander) is a medium-sized salamander endemic to southern Santa Cruz County and northern Monterey County. Long-toed salamanders typically breed in shallow, ephemeral, freshwater ponds, but spend most of their lives underground in small mammal burrows, or in other moist, protected areas, such as dense willow thickets. Known breeding populations occur in areas of sandy loam soils.

After the onset of winter rains, long-toed salamanders migrate from retreat sites to breeding ponds at night. Females attach eggs to submerged vegetation; eggs hatch after 15 to 30 days. Larvae can metamorphose quickly if the breeding pond begins to dry up. The disjunct distribution and the very restricted range of the species make it susceptible to population declines. As a result, the USFWS listed the long-toed salamander as Endangered in 1967, and the state of California listed the long-toed salamander as Endangered in 1971.

Currently, the long-toed salamander is known from a total of 23 locations, including 18 locations near Watsonville (USFWS 2019, CNDDDB 2025). The species is thought to breed in three metapopulations: Southern or Moro Cojo (South of Elkhorn Slough in Monterey County), Central or McClusky (north of Moss Landing), and the Northern or Santa Cruz metapopulation. Within the northern metapopulation, Santa Cruz long-toed salamanders occur in four primary regions, or “complexes:” Valencia-Seascape, Larkin Valley, Ellicott-Buena Vista, and Freedom (USFWS 2019). The only breeding complex that is nearby to the planning area is the Larkin Valley complex. This complex includes upland habitat north of Buena Vista Drive, between Freedom Boulevard and Highway 1. The species breeds at Calabasas Pond (near the intersection of White Road and Larkin Valley Road), which is managed by the Ellicott Slough National Wildlife Refuge; three additional breeding locations are known from the complex, including Suess Pond, Olives Pond, and Winterwind Way (USFWS 2019). Breeding is also known to occur near the plan area at Merk Pond (on Merk Road in the adjacent Pleasant Valley complex). Most of the Larkin Valley complex is private property, and has not been adequately surveyed for Santa Cruz long-toed salamanders. Additional breeding sites may occur in this complex, and if located within 3,199 feet, the maximum distance at which this species has been recorded dispersing from a known breeding pond (Stemle et al. 2024), dispersing individuals could occur in upland habitats or wetlands associated with upper Harkins Slough, within the Buena Vista new growth area.

California Tiger Salamander (*Ambystoma californiense*). Federal Listing Status: Threatened; State Listing Status: Threatened. The California tiger salamander’s preferred breeding habitat is temporary pond environments (e.g., vernal pool, ephemeral pool, or human-made ponds lasting for at least three months) surrounded by uplands that support small mammal burrows. The species will utilize permanent ponds provided

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that aquatic vertebrate predators are not present. Such ponds provide breeding and larval rearing habitat, while small mammal burrows (e.g., ground squirrel and pocket gopher) in the upland habitats support juvenile and adult salamanders during the dry season. They may migrate up to 6,863 feet during dispersal in search of suitable burrows, however the average distance of dispersal is 1,676 feet or less (Search and Shaffer 2011). The USFWS listed this species as threatened in August 2004. The species is separated into three distinct population segments (DPS), including the Central California, Sonoma County, and Santa Barbara County DPS's.

The range of the Central California DPS is restricted to the Central Valley and Inner Coast Range from Sacramento and Yolo counties to Tulare and San Luis Obispo counties in the south. This species has disappeared from a significant portion of its range due to habitat loss from agriculture and urbanization and the introduction of non-native aquatic predators.

The only records of California tiger salamanders in the Pajaro Valley area are from west of Highway 1, north of Buena Vista Road, outside the planning area. These locations are within one mile of the planning area however, and there is the possibility that this species could occur in the vicinity of upper Harkins Slough or other wetland habitats in the Buena Vista new growth area.

Tricolored Blackbird (*Agelaius tricolor*). Federal listing status: None; State Listing Status: Threatened.

Tricolored Blackbirds are found almost exclusively in the Central Valley and central and southern coastal areas of California. This species was first proposed for federal listing in 1991 after the population was estimated at approximately 35,000 adults in the late 1980's (CDFW 2015). However, surveys conducted in 1992 by CDFW determined that the population of this species may have numbered over 300,000 adults, resulting in the withdrawal of the petition. The species subsequently experienced a large decline in population to approximately 50,000 adults by 2015 (Audubon 2024). As a result, the species was listed as threatened under CESA in 2018. The tricolored blackbird is highly colonial and forms dense breeding colonies of up to tens of thousands of pairs. This species typically nests in tall, dense stands of cattails or tules, but also nests in blackberry, wild rose bushes, and tall herbaceous vegetation near water. There are no recent records of tricolored blackbirds nesting in the planning area (CNDDDB 2025). They nested in the vicinity of Hanson Slough and through 1988, but are currently extirpated from the lower Pajaro Valley (CNDDDB 2025). The most recent record of tricolored blackbirds nesting near the plan area is in 2003 at Soda Lake, near the Santa Clara and San Benito County borders. Suitable habitat occurs for this species in the planning area, especially at Struve and Watsonville Sloughs, and tricolored blackbirds could colonize such areas.

Bald Eagle (*Haliaeetus leucocephalus*). Federal listing status: None; State Listing Status: Endangered, Fully Protected.

In California, the state endangered and fully protected bald eagle is an uncommon permanent resident and migrant throughout the state. The species' breeding range in California has notably expanded in recent years (Airola 2025). The bald eagle nests in forests within mountains and foothills, as well as woodlands adjacent to large bodies of water and free flowing rivers with abundant fish and perches from which to hunt. Bald eagles often nest in the upper canopy of the tallest tree within the stand, although below the crown, and prefer stands with less than 40% canopy cover (Polite and Pratt 1999). The nesting season begins in January and continues through August. Following nesting, adult eagles usually remain in or near their breeding territory as long as winter conditions are not too severe (CDFW 2025). Conversely, young birds in California tend to

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disperse hundreds of miles to the north within several weeks after fledging before returning to California in late winter. Bald eagles unsuccessfully attempted to nest at Pinto Lake near the plan area in 2012 (CNDDDB 2025). In 2014 they successfully nested west of the plan area in a eucalyptus grove along Gallighan Slough, a small tributary of Harkins Slough located approximately 1.0 mile west of the plan area (Santa Cruz Bird Club 2014). They have continued to nest there in most years, and occasionally occur as foragers in Struve Slough and Watsonville Slough within the plan area (Cornell Lab of Ornithology 2025).

Northwestern Pond Turtle (*Emys marmorata*). Federal Listing Status: Proposed as Threatened; State Listing Status: Species of Special Concern. The western pond turtle is an aquatic turtle that usually leaves the aquatic site to reproduce, to aestivate, and to overwinter. This turtle requires some slack or slow water, although it will occur where sufficient food resources occur in faster moving water. Nesting areas usually occur in upland areas from March to July, in hard-packed clay soil. Northwestern pond turtles may establish nests up to 1377 feet from aquatic habitat, although typically they are established within 256 feet (Alvarez and Del Vecchio 2024). Hatchlings disperse from the nest with winter rains. Within the planning area, pond turtles have been reported in freshwater marsh habitat in Struve Slough and the Atkinson Lane growth area (CNDDDB 2025). as well. Pond turtles also occur in Pinto Lake (CNDDDB2025), outside the planning area.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: State Candidate, Species of Special Concern. The Burrowing Owl is a small, terrestrial owl of open country. Burrowing Owls favor flat, open grassland or gentle slopes and sparse shrubland ecosystems. In California, Burrowing Owls are found in close association with California ground squirrels. Ground squirrels provide nesting and refuge burrows, and maintain areas of short vegetation height, providing foraging habitat and allowing for visual detection of avian predators by Burrowing Owls. Burrowing Owls are semi-colonial nesters, and group size is one of the most significant factors contributing to site constancy by breeding Burrowing Owls. The nesting season, as recognized by CDFW, runs from February 1 through August 31. Burrowing owls occasionally occur in the plan area as wintering migrants, especially within the Highway 1 Gateway new growth area along the railroad tracks (Cornell Lab of Ornithology 2025). Burrowing Owls are apparently extirpated from the Pajaro Valley as breeders, as there have been no recent records of this species nesting anywhere in Santa Cruz County. Nevertheless, suitable habitat occurs within the planning area, and there is the possibility that Burrowing Owls could recolonize the Pajaro Valley.

4.4.1.5 State Species of Special Concern

Northern Harrier (*Circus cyaneus*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The Northern Harrier is commonly found in open grasslands, agricultural areas, and marshes. Nests are built on the ground in areas where long grasses or marsh plants provide cover and protection. Harriers hunt for a variety of prey, including rodents, birds, frogs, reptiles, and insects by flying low and slow in a traversing manner utilizing both sight and sound to detect prey items. Northern Harriers are common during winter in the Pajaro Valley, and nest in spring and summer. This species is not currently known to nest within the planning area, although nests of these species are secretive and difficult to locate. Potentially suitable nesting habitat occurs in marshy undeveloped portions of the planning area, including Struve Slough, Watsonville Slough, and potentially, portions of the Buena Vista new growth area where relatively undisturbed grasslands present.

Yellow Warbler (*Setophaga petechia*); Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). Yellow Warblers breed in well-developed riparian vegetation, and feed on insects. The Yellow Warbler is a migratory species that is common during migration, but migratory birds in California are mostly of one of the northern subspecies. Most California Yellow Warblers migrate to Mexico and South America in the fall and return to California to breed from May through August. This species is expected to nest in largely native riparian habitat along portions of Corralitos Creek, the Pajaro River, and in the vicinity of Struve and Watsonville Sloughs.

Loggerhead Shrike (*Lanius ludovicianus*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). Loggerhead Shrikes are year-round residents in grassland and scrub habitats in California, where they forage primarily on large insects, lizards, and small mammals. Shrikes generally build their nests in shrubs in fairly open areas. Populations of this species have been declining throughout portions of their range, particularly east of the Rocky Mountains. Loggerhead Shrikes are uncommon in the Pajaro Valley, but are expected to nest in suitable habitat, for example scrubby areas near open grasslands, within the planning area.

Pallid Bat (*Antrozous pallidus*). Federal Listing Status: None; State Listing Status: Species of Special Concern. Pallid bats are pale to light brown in color, and, at about 24 grams, the Pacific race is one of the state's largest bats. Coastal colonies commonly roost in deep crevices in rocky outcroppings, in buildings, under bridges, and in hollow trees. Colonies can range from a few individuals to over a hundred and are non-migratory. Some female/young colonies (typical of the coastal subspecies) may or may not use their day roost for their nursery as well as for winter roosting. Pallid bats can breed from March 15 through August 15. Although crevices are important for day roosts, night roosts often include porches, garages, barns, and highway bridges. Pallid bats may travel up to several miles for water or foraging sites if roosting sites are limited. Pallid bats prefer foraging on terrestrial arthropods in dry open grasslands, vineyards, orchards, or oaks near water and rocky outcroppings or old structures. Occurrence in this area of Santa Cruz County is poorly known, but the species could forage over a variety of habitats, and could potentially roost in trees or in human-made structures such as old barns.

Western Red Bat (*Lasiurus blossevillei*). Federal Listing Status: None; State Listing Status: Species of Special Concern. Western red bats are amber colored with white patches on their shoulders. At approximately 7-15 grams, they are considered a medium-sized bat. They are locally common within their range in California, which extends from Shasta County to the Mexican border west of the Sierra Nevada and Cascade crest (Harris 2000b). This species undertakes north-south migrations between summer and winter ranges (Harris 2000b), although several winter records in California indicate that where the winter climate is mild, such as in the plan area, they may instead hibernate when foraging conditions are not suitable (Pierson et al. 2006). Mating occurs during August and September, however due to a combination of delayed fertilization and an approximately 3 month gestation period, births typically occur in late May through early July. This species roosts primarily in trees in edge habitats along riparian areas, fields, and urban areas, and on occasion may utilize larger shrubs. They select for roost sites with closed canopies, and although adults are usually solitary, nursery colonies may sometimes form. Western red bats are insectivorous, using echolocation to forage for prey between the tree tops and ground. This western red bat does not breed in Santa Cruz County, and although its occurrence in Santa

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Cruz County is poorly understood, it could forage over a variety of habitats and roost in trees, especially at the edge of the plan area along riparian areas.

Townsend's big-eared bat (*Corynorhinus townsendii*). Federal Listing Status: None; State Listing Status: Species of Special Concern. Townsend's big-eared bats are a species of vesper bat found throughout nearly all of California except Alpine and Subalpine zones (Harris 2000a). They are a medium-sized bat at approximately 7-12 grams. This species is not known to be migratory, with the longest recorded movement of this species being 20 miles. This species requires caves, tunnels, mines, buildings, and in some cases, large hollow trees such as coast redwood for day and night roosts, maternity roosts, and hibernacula, which act as a limiting factor for this species (Harris 2000a). This species typically hibernates from October to April. Mating occurs November through February prior to hibernation, with sperm storage and delayed ovulation resulting in births occurring in May through June. Townsend's big-eared bats forage primarily on moths, either in the air using echolocation or by gleaning vegetation. The Townsend's big-eared bat is not known to breed in Santa Cruz County, although it is documented to occur in caves near the UC Santa Cruz campus located approximately 15 miles from the plan area (iNaturalist 2025). As such, although it is not expected to breed in the plan area, migrants could roost in large redwood trees and abandoned buildings in or near the plan area and forage over a variety of habitats within the plan area.

4.4.1.6 State Fully Protected Species

White-tailed Kite (*Elanus leucurus*). Federal Listing Status: None; State Listing Status: Fully Protected. White-tailed Kites are raptors that forage for small rodents and other prey primarily in open grassy or scrubby areas. They nest in large shrubs or trees adjacent to this habitat. Kites are likely to be found foraging in a variety of habitats throughout the planning area. CNDDB (2025) reports no local nesting records, but the species is a common forager in the vicinity of Struve Slough, and likely nests locally. White-tailed Kites could potentially nest in suitable trees throughout the planning area.

Wildlife Corridors

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

Movement corridors are segments of habitat that provide linkage for wildlife through the mosaic of suitable and unsuitable habitat types found within a landscape while also providing cover. On a broader level, corridors also function as paths along which wide-ranging animals can travel, populations can move in response to

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environmental changes and natural disasters, and genetic interchange can occur. In California, environmental corridors often consist of riparian areas along streams, rivers, or other natural features.

Within the plan area, the creeks, rivers, and sloughs and adjacent uplands found within the plan area provide good quality terrestrial and aquatic wildlife corridors for a number of species, including for California red-legged frogs, northwestern pond turtles, common mammals such as raccoons and skunks, in addition to providing high quality habitat for a wide variety of shorebirds, waterbirds, and songbirds. The Pajaro River, which drains an approximately 13,000 square mile watershed area with headwaters in Pinnacles National Park (Watsonville Wetlands Watch 2012), is an especially important corridor for wildlife because it connects terrestrial wildlife on the Pacific Coast and Santa Cruz Mountains to the Diablo Range. The Pajaro River, Corralitos Creek, and Salsipuedes Creek also support special-status migratory fish such as the steelhead and lamprey. The rest of the plan area is thoroughly urbanized and more suitable habitat is nearby but outside of the plan area, and thus these areas do not provide value as a wildlife corridor.

4.4.2 Relevant General Plan Policies

Through a series of environmental policies and actions, the City seeks to be a good steward of natural resources in the planning area. Policies and actions relevant to biotic resources are listed below. Through the implementation of specific measures, significant impacts to biotic resources are avoided and/or minimized.

Policy C-1.1 Protection of Ecologically Sensitive Areas. The City shall seek to protect ecologically sensitive areas, including the Pajaro River, Salsipuedes Creek, Corralitos Creek, and the Wetlands of Watsonville. The Wetlands of Watsonville include Watsonville Slough, Struve Slough, and the West Branch of Struve Slough. Ecologically sensitive areas include not only the listed waterways, but also the upland and riparian habitat adjacent to these waterways. Protections will also be extended to other environmentally sensitive areas defined to meet the Army Corps definitions of wetland, or are found to contain federally or state listed sensitive species through project specific environmental review process.

Actions

- **Action C-1.1.1 Resource Zoning.**

The City shall make every effort to remove invasive plants from City property that threaten to disrupt natural habitat areas. Any vegetation along waterways that is removed should be replaced with native species. This not only prevents erosion and stabilizes banks, but it also improves wildlife habitat. Projects adjacent to environmentally sensitive areas shall be conditioned to install native plants adjacent to the sensitive area. The City shall require private developers to install low-water native planting whenever feasible.

- **Action C-1.1.2 Rewilding of Slough, Riparian Corridors and other environmentally sensitive areas.**

The City shall support the rewilding of sensitive environmental areas as appropriate and recommended by resource agencies.

- **Action C-1.1.3 Identifying Riparian Corridors.**

For each proposed project site within or adjacent to riparian habitat, the City will require detailed mapping of the riparian corridor and required buffer zone. The riparian corridor shall be defined as the topographic top-of bank or the limit of riparian vegetation, whichever is greater. Surveys will be conducted by qualified biologists and will include recommendations for avoiding impacts to riparian habitat to the extent feasible, demarcation of the riparian corridor on site, identify wildlife corridors, and protection of vegetation using Environmentally Sensitive Area fencing. This requirement shall apply prior to City consideration of any project proposal for the site.

- **Action C-1.1.4 Use of Native Plants.**

The City shall, for the maintenance and operation of its property within ecologically sensitive areas (e.g., wetlands), use native plants and avoid the planting of non-native plants.

- **Action C-1.1.4 Invasive Plants.**

The City shall make every effort to remove invasive plants from City property that threaten to disrupt natural habitat areas. Any vegetation along waterways that is removed should be replaced with native species. This not only prevents erosion and stabilizes banks, but it also improves wildlife habitat. Projects adjacent to environmentally sensitive areas shall be conditioned to install native plants adjacent to the sensitive area. The City shall require private developers to install low-water native planting whenever feasible.

- **Action C-1.1.6 Rewilding.**

The City shall support the rewilding of riparian and wetland habitat by requiring it as a condition of development where it abuts private projects, and by seeking grants and other resources, as reasonable for restoration in other areas. Rewilding efforts shall be planned comprehensively and use native plants from regional seed stocks.

- **Action C-1.1.7 Chemical Usage and Integrated Pest Management.**

The City shall use integrated pest management techniques when appropriate. Chemical usage for the control of pests and invasive species will consist of the least toxic products feasible.

Policy C-1.2 Setbacks and Detrimental Activity Limitations. The City shall protect ecologically sensitive areas and provide for their continued health through the use of appropriate setbacks and limitations on potentially detrimental activities.

Actions

- **Action C-1.2.1 Buffering Riparian Areas.**

The City shall prepare an Ordinance that clarifies the process for determining appropriate buffers from development. The Ordinance shall clarify how to determine when a wetland/riparian area meets the Army Corps criteria for wetlands and how to clearly delineate the boundaries of the wetland/riparian area with a to-scale map as part of the process.

Additionally, the map shall establish an appropriate size and configuration of areas required to buffer the wetland/riparian area, allowing for wildlife corridors and/or the natural flow of water through the area. For each proposed project with a wetland/riparian area, the City will require an analysis of the site to be prepared by a qualified biologist. The wetland/riparian buffer should be no less than 100 feet from the edge of the riparian area and shall be of sufficient size to protect wetland/riparian area species and their habitat from the impacts of human and urban activity (noise, lights, and human traffic). No development is to occur within the buffer area. The buffer may be reduced to below 100 feet under certain circumstances, following resource analysis by a qualified biologist and subject to criteria defined in the buffer ordinance. In considering the reduction of the buffer requirement, the ordinance shall consider:

- Biological condition of the environmentally sensitive resource;
- Existence of structures or other improvements currently within the resource setback;
- Average setback to housing, commercial buildings and other development on adjacent properties;
- Occurrence of project site within an urban location where most properties are already developed and parcels are generally small;
- Potential of the project construction or operations to disrupt the continuity of riparian habitat or preclude restoration of vegetation along a creek channel where upstream and downstream habitat are of good quality;
- The potential for occurrence of special-status species within the riparian corridor; and
- Potential for a project to significantly reduce the moisture that stream side vegetation receives from natural drainage of upland areas.

Projects adjacent to or containing riparian or wetland habitats that cannot provide a protective buffer shall undergo environmental review under CEQA to protect these resources and avoid potential impacts.

Policy C-2.1 Promotion of Water Conservation. The City shall promote the conservation of water and provide for the protection of water quality to assure its use for domestic, agricultural, industrial, recreational, and ecological needs.

Actions

- **Action C-2.1.3 Point and Non-Point Pollutants.**

The City shall continue to control pollutants from point and non-point sources through a comprehensive NPDES Storm water program.

- **Action C-3.1.1 All projects shall incorporate Stormwater Best Management Practices that achieve the most effective control of pollutants and flow control practicable.**

Wherever possible, natural BMPs (such as grassy swales, ponds and biofilters) shall be used. These BMPs should be incorporated into site landscaping design, for recreational and aesthetic enhancement. Engineered BMPs (such as vaults and interceptors) shall only be used when no natural BMP can be incorporated into the site design, or when a critical natural resource requires protection beyond that attainable by natural BMPs alone.

- **Action-3.1.2 Construction Site Best Management Practices (BMPs).**

The City shall require all construction sites to implement erosion and sediment control BMPs to the maximum extent practicable. Construction sites shall comply with City Erosion Control Standards, and an Erosion Control Plan shall be required for project approval.

- **Action C-3.1.3 Evaluate Grading Ordinance**

The City shall regularly evaluate its grading ordinance and determine if revisions should be made to further enhance environmental protection.

- **Action C-3.1.4 Municipal and Industrial Stormwater Compliance.**

The City shall implement all applicable State and Federal regulations governing stormwater discharges, including requirements under the National Pollutant Discharge Elimination System (NPDES) permit as a regulated small Phase II Municipal Separate Storm Sewer System (MS4) to reduce pollutants in runoff to the maximum extent practicable, thereby helping protect local sloughs, creeks, rivers, and other natural resources.

Goal CM5 Trees. Encourage protection and planting of trees for aesthetic and environmental value.

Policy C-5.1 Tree Protection. The City shall protect certain trees from being removed since trees provide a variety of aesthetic and environmental values.

Actions

- **Action C-5.1.1 Tree Protection Ordinance.**

The City shall adopt a tree preservation ordinance and tree planting guidelines. The ordinance and guidelines shall set forth the types of trees to be protected and the conditions under which trees may be removed.

- **Action C-5.1.2 Tree Planting Guidelines.**

The City shall adopt street tree planting requirements and guidelines that identify a citywide tree planting program, including a list of appropriate street trees suitable for various areas of the community. New projects will be required to follow the established tree planting guidelines.

- **Action C-5.1.3 Preserve the Tree Canopy.**

Conduct necessary actions to preserve and expand the tree canopy. Carry out actions related to promoting tree planting and expanding the City's tree canopy, as noted in the Urban Greening Plan and Urban Forest Management Plan.

Policy C-6.1 Public Education for Resource Conservation and Waste Reduction. The City shall continue to expand its education efforts to promote water conservation and efficiency, reduce water pollution, and reduce solid waste disposal.

Actions

- **RCM-6.1.1 Water Conservation.**

The City shall continue the water conservation program which encourages existing rebates and provision of water conserving devices. Public education methods include the use of local print and electronic English and Spanish language media, including social media, as well as articles in the City's own newsletter and inserts in the City utility bills. The City shall expand its educational efforts to promote low or no-water use plantings as well as a more efficient use of landscape water on lawns, and to promote reuse, recycling, and composting of discarded materials. The City shall use multiple methods of communication in English, Spanish, and any other significant language group identified.

- **Action C-6.1.2 Storm Water Pollution Prevention.**

The City shall continue to expand its residential storm water pollution prevention program that includes placement of storm drain warning markers on all drainage inlets, provision of educational materials and tools door-to-door, continued collection of used motor oil at the curb and at convenient drop-off locations, continued regularly scheduled street sweeping, and continued general education and enforcement in the residential, commercial and industrial sectors regarding storm water pollution prevention. The City shall continue public education programs on water quality issues, including Best Management Practices, for residents, businesses, contractors and City employees.

- **Action C-6.1.3 Wetlands Protection.**

The City shall increase awareness among residents of the delicate nature of the local wetlands and how individuals can protect them. The City shall continue to expand its education programs based at the Wetlands Nature Center, the Wetland Educational Resource Center located at Pajaro Valley High School, in the local schools, and in the community.

Action C-3.1.1 All projects shall incorporate Stormwater Best Management Practices that achieve the most effective control of pollutants and flow control practicable.

Action

- **All projects shall incorporate Stormwater Best Management Practices that achieve the most effective control of pollutants and flow control practicable.**

Wherever possible, natural BMPs (such as grassy swales, ponds and biofilters) shall be used. These BMPs should be incorporated into site landscaping design, for recreational and aesthetic enhancement. Engineered BMPs (such as vaults and interceptors) shall only be used when no natural BMP can be incorporated into the site design, or when a critical natural resource requires protection beyond that attainable by natural BMPs alone.

Action-3.1.2 Construction Site Best Management Practices (BMPs). The City shall require all construction sites to implement erosion and sediment control BMPs to the maximum extent practicable. Construction sites shall comply with City Erosion Control Standards, and an Erosion Control Plan shall be required for project approval.

Actions

- **Action C-3.1.2 Construction Site Best Management Practices (BMPs).**

The City shall require all construction sites to implement erosion and sediment control BMPs to the maximum extent practicable. Construction sites shall comply with City Erosion Control Standards, and an Erosion Control Plan shall be required for project approval.

- **Action C-3.1.3 Evaluate Grading Ordinance.**

The City shall evaluate its grading ordinance and determine if revisions should be made to further enhance environmental protection.

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Policy C-5.1 Tree Protection. The City shall protect certain trees from being removed since trees provide a variety of aesthetic and environmental values.

Actions

- **Action C-5.1.1 Tree Protection Ordinance.**

The City shall adopt a tree preservation ordinance and tree planting guidelines. The ordinance and guidelines shall set forth the types of trees to be protected and the conditions under which trees may be removed.

- **Action C-5.1.2 Tree Planting Guidelines.**

The City shall adopt street tree planting requirements and guidelines that identify a citywide tree planting program, including a list of appropriate street trees suitable for various areas of the community. New projects will be required to follow the established tree planting guidelines.

- **Action C-5.1.3 Preserve the Tree Canopy.**

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Conduct necessary actions to preserve and expand the tree canopy. Carry out actions related to promoting tree planting and expanding the City's tree canopy, as noted in the Urban Greening Plan and Urban Forest Management Plan.

Policy C-6.1 Public Education for Resource Conservation and Waste Reduction.. The City shall continue and expand its education efforts to promote water conservation and efficiency and reduce water waste.

Actions

- **Action C-6.1.2 Storm Water Pollution Prevention.**

The City shall continue to expand its residential stormwater pollution prevention program that includes placement of storm drain warning markers on all drainage inlets, provision of educational materials and tools door-to-door, continued collection of used motor oil at the curb and at convenient drop-off locations, continued regular scheduled street sweepings, and continued general education and enforcement in the residential, commercial and industrial sectors regarding stormwater pollution prevention. The City shall continue public education programs on water quality issues, including Best Management Practices, for residents, businesses, contractors and City employees.

- **Action C-6.1.3 Wetlands Protection.**

The City shall increase awareness among residents of the delicate nature of the local wetlands and how individuals can protect them. The City shall continue and expand its education programs based at the Wetlands Nature Center, the Wetland Educational Resource Center located at Pajaro Valley High School, in the local schools, and in the community.

4.4.3 Impacts and Mitigation

4.4.3.1 *Thresholds of Significance*

The Watsonville General Plan 2050 is a planning document to guide development; it does not propose specific development projects. Therefore, the following discussions provide program-level review of the potential biological impacts that could result from implementation of the Watsonville General Plan 2050. This analysis is based on biologists' assessment of how development envisioned in the Watsonville General Plan 2050 could or would impact existing biological resources, based on the results of data collected during the literature review and evaluation of database query results described in Section 4.4.1, Environmental Setting.

In accordance with Appendix G of the State *CEQA Guidelines*, the proposed project would result in potentially significant environmental effects on biological resources if it would:

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

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2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
3. Have a substantial adverse effect on state or federally protected wetlands (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.4.3.2 Project Impacts

The potential impacts of the General Plan 2050 on biological resources are described below. Impacts resulting from Citywide plans and policies were analyzed separately from impacts resulting from development of both new growth areas and urban infill areas. Impacts due to ongoing activities in areas where no new growth is proposed by the General Plan were not assessed. Within each section, the analysis is organized by habitat type and affected species, with references to specific planning units. Individual components of the General Plan were analyzed within this general context.

The mitigation measures established in this document fulfill the City's obligations under CEQA with respect to biological resources. However, the City recognizes that development activity within the plan area may require one or more permits from a variety of state and federal resources agencies. Development project proponents within the plan area will be responsible for obtaining all such necessary permits. Those permits may impose mitigation requirements which are different from and/or greater than the mitigation measures established in this EIR.

4.4.3.3 Impact Bio-1a: Direct Mortality and/or Disturbance of Special-Status Plant Populations (Less than significant with mitigation)

Future citywide activities (e.g., infrastructure repair and development) resulting from the proposed General Plan could cause the loss of special-status plant populations or indirect impacts that could degrade the habitat of special-status plant populations. Known populations of Santa Cruz tarplant occur on the east side of Larkin Valley Road within the Buena Vista parcel within the new growth area, and Watsonville Municipal Airport, near Harkins Slough, Apple Hill and Bay Breeze developments in the plan area.

Approximately 233.7 acres of California annual grassland and 685.8 acres of agricultural land suitable for development occurs within the proposed urban limit line. Although some of the California annual grassland is expected to be highly disturbed due to proximity to residential and commercial land uses, special-status plants could potentially occur. Santa Cruz tarplant is most often associated with non-native annual grasses and may be present on weedy sites, especially those with appropriate soil types. In the new growth area, suitable habitat for

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new occurrences of Santa Cruz tarplant occurs in California annual grassland in the Buena Vista new growth area.

As for the other potential special-status plant species, suitable habitat for Hickman's popcorn flower and harlequin lotus occurs within the freshwater marsh near Atkinson Lane and in the riparian woodland along Corralitos Creek. Saline clover may also be found within the freshwater marsh near Atkinson Lane. Gairdner's yampah may occur in mesic grasslands bordering freshwater marsh and riparian woodland, as well as within riparian woodland along Corralitos Creek adjacent to agricultural areas.

Direct impacts to special-status plants could occur through grading, which could remove, crush, and/or bury individual plants or the seed bank for a population. Additionally temporary direct impacts could occur resulting from construction impacts, such as trampling or dust deposition onto leaves. Indirect impacts could include erosion or sedimentation associated with grading of adjacent areas, shading, and alteration of hydrologic conditions.

Critical habitat for Santa Cruz tarplant comprised of California annual grassland, eucalyptus grove and riparian woodland is mapped for Santa Cruz tarplant on the east side of Larkin Valley Road (Figure 4.4-3). Impacts to critical habitat for Santa Cruz tarplant may occur; such impacts would be considered significant if individuals of this species are also impacted.

Impacts to CNPS-ranked species (i.e., species having a CRPR of 1-4 but that are not also listed under the California or federal Endangered Species Acts) may be considered significant, depending on several factors such as the size and geographic uniqueness of the population and the magnitude of the impact to that population. Conservation of CRPR-ranked species is important because their populations contribute to preserving genetic resources and help ensure persistence of these rare species in the county and state. Due to the regional rarity of these species, impacts that could lead to the extirpation of a population could reduce that species' range or lead to the loss of important genetic diversity, which would be considered a substantial adverse effect. Impacts to a very small proportion of a population is not expected to cause the extirpation of that population, as the remaining plants would allow a viable population to persist. Guidelines to minimize impacts of seed collection on wild plant populations suggest that no more than 10 percent of the seeds from a plant population should be collected (Menges et al. 2004, Center for Plant Conservation 2024). Occurrences of annual plant species are assumed to retain long-term viability if the decline in population size and percent cover, relative to pre-activity conditions, is less than 25 percent five years after the activity is conducted, and perennial plant occurrences are assumed to retain long-term viability if the decline is less than 25 percent three years after the activity (ICF International 2012). Impacts to 10 percent or less of a population of CRPR 1-4 species would not be expected to cause the extirpation of such a population as long as the remaining plants are avoided and protected. However, because impacts to more than 10 percent of a population of CRPR 1-4 species could contribute to a reduction in these species' genetic resources or could reduce numbers such that the population may no longer have enough individuals to be self-sustaining, impacts of General Plan activities on more than 10 percent of a population (by individuals or occupied area) would constitute a significant impact. Plant species that are listed under the California or federal Endangered Species Acts tend to be rarer than CRPR 1-4 species that are not formally

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listed, and the populations of listed plant species may be more sensitive to impacts. As a result, impacts of General Plan activities on any Santa Cruz tarplant would constitute a significant impact.

General Plan 2050 Policies and Actions that are expected to reduce impacts to special-status plants include::

- **Action C-1.1.1 Resource Zoning.** The City shall continue to limit urban development and to preserve natural open spaces and wildlife corridors, in identified environmentally sensitive areas that are zoned EM-OS (Environmental Management Open Space).
- **Action C-1.1.3 Identifying Riparian Corridors.** For each proposed project site within or adjacent to riparian habitat, the City will require detailed mapping of the riparian corridor and required buffer zone. The riparian corridor shall be defined as the topographic top-of bank or the limit of riparian vegetation, whichever is greater. Surveys will be conducted by qualified biologists and will include recommendations for avoiding impacts to riparian habitat to the extent feasible, demarcation of the riparian corridor on site, identify wildlife corridors, and protection of vegetation using Environmentally Sensitive Area fencing. This requirement shall apply prior to City consideration of any project proposal for the site.
- **c Use of Native Plants.** The City shall, for the maintenance and operation of its property within ecologically sensitive areas (e.g., wetlands), use native plants and shall avoid the planting of non-native plants.
- **Action C-1.1.5 Invasive Plants.** The City shall make every effort to remove invasive plants from City property that threaten to disrupt natural habitat areas. Any vegetation along waterways that is removed should be replaced with native species. This not only prevents erosion and stabilizes banks, but it also improves wildlife habitat. Projects adjacent to environmentally sensitive areas shall be conditioned to install native plants adjacent to the sensitive area. The City shall require private developers to install low-water native planting whenever feasible.
- **Action C-1.1.7 Chemical Usage and Integrated Pest Management.** The City shall use integrated pest management techniques when appropriate. Chemical usage for the control of pests and invasive species will use the least toxic products available.
- **Policy C-1.2 Setbacks and Detrimental Activity Limitations.** The City shall protect ecologically sensitive areas and provide for their continued health through the use of appropriate setbacks and limitations on potentially detrimental activities.

In addition, the following Mitigation Measures would be implemented to reduce impacts to a **less-than-significant** level:

Mitigation Measure BIO-1: Conduct Floristic Surveys for Proposed Development and Infrastructure Projects.

Prior to the City deeming any development or infrastructure project application complete, the project applicant or applicable City department shall retain a qualified biologist to conduct protocol-level floristic surveys for special-status plant species within all suitable habitat, including riparian woodland, freshwater marsh, and California annual grassland.

Floristic surveys shall be conducted during the appropriate blooming periods for all potentially occurring special-status plant species and must follow the most current CDFW and CNPS survey protocols.

A Floristic Survey Report, including maps that depict all survey areas, identified populations, and recommended avoidance or protection zones, shall be submitted by the applicant for review, oversight, and approval by City staff prior to issuance of any project-specific CEQA clearance or discretionary approval.

All approved maps and avoidance areas shall be incorporated into final project design and included on all project plan sets prior to the issuance of grading or building permits.

Mitigation Measure BIO-2: Establish Sensitive Habitat Setback Requirements to Avoid Impacts to Special-Status Plants

The project applicant or applicable City departments shall design development footprints during the project-specific CEQA process to be sited to avoid potential impacts to special-status plants plus an avoidance buffer determined by a qualified plant ecologist for the population and project. For Santa Cruz tarplant, this avoidance should also include critical habitat. If avoidance of listed plant species is not feasible, then formal consultation with USFWS and CDFW and the issuance of an incidental take permit would be required. Impacts to non-listed species would likely involve informal discussions with CDFW.

Special-status plant occurrences located within temporary construction areas should be fenced or flagged for avoidance prior to construction, and a biological monitor should be present to ensure compliance with off-limits areas. Seasonal avoidance measures (i.e., limited operating periods based on timing of annual plant dormancy), combined with topsoil salvage and site restoration, may be acceptable in some cases. Compensation for permanent loss of special-status plant occurrences, in the form of land purchase or restoration, must be provided to the level acceptable to the resource agencies.

Mitigation Measure BIO-3: Compensate for Loss of Special-Status Plants

Compensatory measures will be determined by the project applicant or applicable City departments during the project-specific CEQA process on a case-by-case basis for project losses that exceed the significance criteria for CNPS-ranked species (i.e., impacts to more than 10% of the population), or for any impacts to the federally listed Santa Cruz tarplant. Compensation for loss of special-status plants typically involves the purchase and permanent stewardship of known occupied habitat at a 1:1 (mitigation:impact) ratio or the restoration and reintroduction of populations in degraded, unoccupied habitat at a minimum 1.5:1 ratio. Restoration/reintroduction may be located on- or off-site. In the latter case, a Site Restoration Plan would be required which includes the following information:

- Location of areas to restore lost plant populations;
- A description of propagation and planting techniques to be employed in the restoration effort. Plants to be impacted should have their seeds collected so that the seeds can be planted within the restoration areas;
- A time table for implementation of the restoration plan, including pilot-phase studies;

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- A five-year monitoring plan and performance criteria;
- A description of remedial measures to be performed in the event initial restoration measures are unsuccessful in meeting the performance criteria; and,
- A description of the site maintenance activities to follow restoration activities. These may include weed control, irrigation and control of herbivory by livestock and wildlife.

4.4.3.4 1b: Impacts to Special-Status Amphibians and Turtles (Less than significant with mitigation)

Impacts to water quality, construction impacts, or other impacts to aquatic habitat within the Highway 1 Gateway, Atkinson Lane, Area C, and Buena Vista new growth areas could affect three federally listed amphibians: the California red-legged frog, California tiger salamander, and Santa Cruz long-toed salamander. Designated critical habitat for the California red-legged frog occurs adjacent to the plan area, including directly adjacent to the Highway 1 new growth area (Figure 4.4-4). In addition, the northwestern pond turtle (federally proposed as threatened and a California species of special concern) could be present in aquatic habitats.

These special-status species could also occur in upland habitats adjacent to aquatic habitat. California tiger salamanders may aestivate in burrows up to 6,863 feet from breeding habitat, and can disperse and aestivate in grassland and oak woodland habitats near aquatic habitat in the planning area. Santa Cruz long-toed salamanders are expected to occur closer to their aquatic habitat, while California red-legged frogs may disperse long distances overland (especially during the wet season) among aquatic breeding areas. Northwestern pond turtles may establish nests in upland habitat up to 1377 feet from aquatic habitat.

Construction activities and land-use changes in upland habitats near or between aquatic breeding sites could impact these species by resulting in direct impacts to individuals and the loss of upland refugial habitat. These impacts would be reduced to less-than-significant levels with the policies, actions, and mitigation measures described below.

In addition, if development in upland areas restricts or eliminates dispersal among breeding populations of these species, the extirpation of local populations may result. Such impacts to upland dispersal habitat would be considered significant and unavoidable, and would remain significant even with the implementation of policies, actions, and mitigation measures described below.

Special-status amphibians may also be impacted by artificial light at night (ALAN) in new growth areas. Amphibians are largely nocturnal, and due to their mode of transportation and need for moisture, may be unable to avoid ALAN. Amphibians rely upon seasonal photoperiod cues for both development and to adapt to changing conditions throughout the year (Wise 2007). These cues trigger hormonal changes that aid in adaptation, but constant exposure to ALAN disrupts the timing of hormonal changes, affecting amphibian's ability to survive throughout the year (Buchanan 2006; Wise 2007). As such, increased exposure to ALAN could impact the survival of special-status amphibians in the plan area.

Impacts to aquatic habitat from Citywide, new growth areas, and infill areas General Plan policies are addressed under Impact BIO-3. Activities associated with City-wide policies and infill areas are not expected to affect

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upland habitat for these species, although impacts to upland habitat for these species could occur as a result of construction in new growth areas.

General Plan 2050 Policies and Actions that are expected to reduce impacts to special-status amphibians and turtles include:

- **Action C-1.1.1 Resource Zoning.** The City shall continue to limit urban development and to preserve natural open spaces and wildlife corridors, in identified environmentally sensitive areas that are zoned EM-OS (Environmental Management Open Space).
- **Action C-1.1.3 Identifying Riparian Corridors.** For each proposed project site within or adjacent to riparian habitat, the City will require detailed mapping of the riparian corridor and required buffer zone. The riparian corridor shall be defined as the topographic top-of bank or the limit of riparian vegetation, whichever is greater. Surveys will be conducted by qualified biologists and will include recommendations for avoiding impacts to riparian habitat to the extent feasible, demarcation of the riparian corridor on site, identify wildlife corridors, and protection of vegetation using Environmentally Sensitive Area fencing. This requirement shall apply prior to City consideration of any project proposal for the site.
- **Action C-1.1.5 Invasive Plants.** The City shall make every effort to remove invasive plants from City property that threaten to disrupt natural habitat areas. Any vegetation along waterways that is removed should be replaced with native species. This not only prevents erosion and stabilizes banks, but it also improves wildlife habitat. Projects adjacent to environmentally sensitive areas shall be conditioned to install native plants adjacent to the sensitive area. The City shall require private developers to install low-water native planting whenever feasible.
- **Action C-1.1.6 Rewilding.** The City shall support the rewilding of riparian and wetland habitat by requiring it as a condition of development where it abuts private projects, and by seeking grants and other resources for restoration in other areas. Rewilding efforts shall be planned comprehensively and use native plants from regional seed stocks.
- **Action C-1.1.7 Chemical Usage and Integrated Pest Management.** The City shall use integrated pest management techniques when appropriate. Chemical usage for the control of pests and invasive species will use the least toxic products available.
- **Action C-1.2.1 Buffering Riparian Areas.** The City shall prepare an Ordinance that clarifies the process for determining appropriate buffers from development. The Ordinance shall clarify how to determine when a wetland/riparian area meets the Army Corps criteria for wetlands and how to clearly delineate the boundaries of the wetland/riparian area with a to-scale map as part of the process. Additionally, the map shall establish an appropriate size and configuration of areas required to buffer the wetland/riparian area, allowing for wildlife corridors and/or the natural flow of water through the area. For each proposed project with a wetland/riparian area, the City will require an analysis of the site to be prepared by a qualified biologist. The wetland/riparian buffer should be no less than 100 feet from the edge of the riparian area and shall be of sufficient size to protect wetland/riparian area species and their habitat from the impacts of human and

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urban activity (noise, lights, and human traffic). No development is to occur within the buffer area. The buffer may be reduced to below 100 feet under certain circumstances, following resource analysis by a qualified biologist and subject to criteria defined in the buffer ordinance. In considering the reduction of the buffer requirement, the ordinance shall consider:

- Biological condition of the environmentally sensitive resource;
- Existence of structures or other improvements currently within the resource setback;
- Average setback to housing, commercial buildings and other development on adjacent properties;
- Occurrence of project site within an urban location where most properties are already developed and parcels are generally small;
- Potential of the project construction or operations to disrupt the continuity of riparian habitat or preclude restoration of vegetation along a creek channel where upstream and downstream habitat are of good quality;
- The potential for occurrence of special-status species within the riparian corridor; and
- Potential for a project to significantly reduce the moisture that stream side vegetation receives from natural drainage of upland areas.

Projects adjacent to or containing riparian or wetland habitats that cannot provide a protective buffer shall undergo environmental review under CEQA to protect these resources and avoid potential impacts.

- **Action C-2.1.3 Point and Non-Point Pollutants.** The City shall continue to control pollutants from point and non-point sources through a comprehensive NPDES Storm water program.

In addition, Mitigation Measures BIO 4-8 would be implemented to reduce impacts to a **less-than-significant** level:

Mitigation Measure BIO-4: Conduct Surveys for Special-Status Amphibians and Turtles

To determine if any special-status amphibian and turtle species would be affected by any given project element, the project applicant or applicable City department shall conduct surveys at the specific project site prior to construction, following standard USFWS or CDFW protocol for each species, if potential habitat could be affected by project implementation. Potential habitat for the California red-legged frog is defined as streams, freshwater pools, and ponds in riparian woodlands, seasonal wetlands, freshwater marsh, and California annual grassland with emergent or overhanging vegetation, which may occur in or directly adjacent to the Buena Vista, Atkinson Lane, Area C; and Highway 1 Gateway new growth areas. Potential habitat for the California tiger salamander and Santa Cruz long-toed salamander is defined as freshwater pools and ponds in riparian woodlands, seasonal wetlands, freshwater marsh, and California annual grassland, and these two species could occur in the Buena Vista new growth area. Potential habitat for the northwestern pond turtle includes permanent or nearly permanent water and adjacent uplands in riparian woodlands, seasonal wetlands, freshwater marsh, and California annual grassland in the Buena Vista, Atkinson Lane, Area C; and Highway 1 Gateway new growth

areas. If it is determined that any of these federally and/or state-listed species are present, consultation with the USFWS and/or CDFW will be necessary if impacts are possible.

Mitigation Measure BIO-5: Avoid Impacts to Special-Status Amphibians and Turtles

If feasible, construction of project elements shall be designed by the applicant or applicable City departments during the project-specific CEQA process to avoid aquatic and associated upland habitat for these special-status species. If construction will occur adjacent to riparian woodlands, seasonal wetlands, freshwater marsh, or California annual grassland, impacts to individuals can be avoided or minimized through the following measures to be implemented by the project applicant or applicable City departments:

1. Prior to any construction activities, the boundaries of construction areas will be clearly delineated with orange plastic construction fencing to prevent workers or equipment from inadvertently straying from the construction area. All construction personnel, equipment, and vehicle movement shall be confined to designated construction areas and connecting roadways. Movement of construction and personal vehicles shall be prohibited outside designated construction areas or off established roadways.
2. Prior to the onset of any ground disturbing activities, exclusion fencing will be established around areas of potentially occupied habitat, as determined by a qualified biologist. Exclusion fencing will consist of silt-fencing or similar material at least 36 inches in height that is buried six inches in the ground to prevent incursion under the fence. Exclusion fencing may be installed at the base of the construction fencing described in A above. This fence will be surveyed each morning before construction, to verify that no individuals of these species have entered the construction site.
3. Before any construction activities begin, a qualified biologist will conduct a training session with construction personnel to describe the California red-legged frog, California tiger salamander, Santa Cruz long-toed salamander, and northwestern pond turtle, as well as these species' habitat, the specific measures being implemented to minimize effects to these species, and the boundaries of the construction area.
4. All food-related trash items will be enclosed in sealed containers and removed daily from Project site to discourage the concentration of potential predators in habitat potentially occupied by these species.

Mitigation Measure BIO-6: Protect Water Quality

Water quality will be protected under the City's BMPs, per the City's Stormwater Control and Prevention Ordinance (6-3.525) and General Plan Policies C-2.1 and 3.1 and Actions C-2.1.3, 3.1.4, and 6.1.2. Applicants or applicable City departments will implement the following BMPs, as applicable, during construction:

- No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material should be allowed to enter into, or be placed where, it may be washed by rainfall or runoff into aquatic habitats.
- Silt fencing should be constructed where work will occur near aquatic habitats to protect water quality.
- A hazardous materials spill prevention plan will be developed and implemented. Hazardous material will be stored in secured structures with secondary spill containment features. Refueling of construction equipment and vehicles will not occur within 256 feet of any water body or anywhere

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that spilled fuel could drain to a water body. The contractors will check and maintain equipment and vehicles daily to prevent leaks of fuels, lubricants, or other fluids.

These mitigation measures will be sufficient to reduce most impacts to less-than-significant levels. If construction must occur directly in habitat of a species listed under the FESA, or could otherwise result in take of individuals, additional mitigation (and consultation with the USFWS) will be required.

Mitigation Measure BIO-7: Compensate for Lost Aquatic and Upland Habitat of Special-Status Amphibians and Turtles

If aquatic habitats such as freshwater marsh or seasonal wetland that supports special-status amphibians (and the northwestern pond turtle if it is listed under FESA at the time of project implementation) will be impacted, compensatory mitigation will be required to be identified by project applicants or applicable City departments during the project-specific CEQA process and implemented by the applicants prior to or concurrent with the impact. Mitigation for impacts to wetlands is addressed under Impact Bio-3 (below). For impacts to habitat for federally-listed amphibians, mitigation areas providing similar or better habitat shall be preserved and protected in perpetuity. Essential aquatic habitat (including verified aquatic breeding habitat) and associated upland habitat within 256 feet of essential aquatic habitat for the California red-legged frog (and northwestern pond turtle, if the species is listed), and aquatic breeding habitat for the two listed salamanders, should be replaced at a 3:1 ratio.

All three federally listed amphibians can potentially estivate (remain dormant) in upland habitat in coast live oak woodland, riparian woodland, or California annual grassland, such as ground squirrel burrows near wetland breeding areas. In addition, some upland areas may provide important dispersal habitat between breeding sites and northwestern pond turtles may lay nests in these areas. The location of potential aestivation, refugial, dispersal, and nesting habitat will be identified by surveys (Mitigation Bio-4a). The extent of lost upland aestivation habitat should be determined on a case by case basis based on proximity to aquatic habitat, availability of aestivation sites such as small mammal burrows, land disturbance, and barriers to dispersal (such as fences, extensive developed areas, or wide, busy roads).

If avoidance of upland habitat for federally listed amphibians and the northwestern pond turtle (if listed at the time of project implementation) is infeasible, then mitigation lands providing similar or better habitat adjacent to occupied or suitable aquatic habitat shall be preserved and protected in perpetuity. Upland aestivation and nesting habitat should be replaced at a 1:1 replacement ratio on an acreage basis. Alternately, this ratio may be reduced at the discretion of the City (subject to approval by the USFWS), if additional aquatic breeding habitat is provided. The amount of reduction shall be proportional to the amount of additional essential habitat provided, up to a maximum reduction of fifty percent. In selecting off-site mitigation lands, preference shall be given to preserving large blocks of habitat rather than many small parcels, linking preserved areas to existing open space and other high-quality habitat, and excluding or limiting public use within preserved areas.

Mitigation Measure BIO-8. Implement Lighting Impact Reduction Measures.

The following measures shall be implemented by project applicants or applicable City departments during construction to reduce spillover of lighting into freshwater marsh, seasonal wetland, riparian woodland, coast

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live oak woodland, and California annual grassland habitat, or glare/increased luminance perceived by special-status animals as well as adverse effects of lighting on migratory birds.

- Through a combination of appropriate fixture selection that suits its purpose, low mounting height, glare shielding, and orientation/aiming of light fixtures, new construction in the plan area shall actively control light spill towards sensitive habitat areas and towards the sky. Exterior lighting adjacent to freshwater marsh, seasonal wetland, riparian woodland, coast live oak woodland, and California annual grassland habitat shall be fully shielded to block illumination from shining outward towards these habitats and to prevent the lit portions of these fixtures (i.e., the lamps) from being visible to amphibians, fish, or birds in the water. Limited uplighting may apply to select building façade areas and landscape features that are at least 50 feet from the edge of these habitats. These uplight fixtures shall incorporate glare shields and strategic aiming to prevent light from being visible beyond the feature being lit (i.e., the feature being lit shall block luminance from view of birds flying overhead); shall incorporate timeclock control to turn off uplighting from 10 pm until the next evening; and shall use 40-Watt maximum lamps to minimize light output. Low-intensity (100-200 lumens) and warm-colored (2700K-3000K) lighting will be used in these areas to minimize brightness and emission of blue lights that can disrupt wildlife circadian rhythms.
- Except as indicated in the previous bullet (and the exceptions for public streets below), fixtures shall comply with lighting zone LZ-2, Moderate Ambient, as recommended by the International Dark-Sky Association (2011) for multifamily residential uses, institutional residential uses, schools, churches, hotels, commercial and/or business areas in predominately residential areas, and/or mixed-used development with a predominance of residential uses. The allowed total initial luminaire lumens for development in the plan area adjacent to freshwater marsh, riparian woodland, and seasonal wetland habitat is 1.25 lumens per square foot of hardscape, and the BUG rating for individual fixtures shall not exceed B3 or G1, as follows:
 - B3: 2,500 lumens high (60–80 degrees), 5,000 lumens mid (30–60 degrees), 2,500 lumens low (0–30 degrees)
 - G2: 225 lumens (forward/back light 80–90 degrees), 5,000 lumens (forward 60–80 degrees), 1,000 lumens (back light 60–80 degrees asymmetrical fixtures), 5,000 lumens (back light 60–80 degrees quadrilateral symmetrical fixtures)
- Lighting for public roadways and traffic signage lighting, including lighting for driveway entrances occurring in the public right-of-way, shall be excluded from these BUG rating limitations to support public safety and proper illumination of public streets.
- Exterior lighting shall be minimized in accordance with recommendations from the International Dark-Sky Association (2011) from midnight until dawn, at a minimum, except as needed for safety and City code compliance.
- Spillage of lighting from building interiors shall be minimized using occupancy sensors, dimmers, or other mechanisms from 10 pm until dawn, at a minimum, during bird migration seasons (February–May and August–November). If desired, this measure may be voluntarily implemented year-round.

4.4.3.5 1c: Impacts to Steelhead, Pacific Lamprey, and Monterey Hitch (Less than significant with mitigation)

Impacts to water quality, construction impacts, other impacts to aquatic habitat, and impacts to shaded riverine habitat (SRA) within the planning area could affect the federally listed steelhead and two California species of special concern, the Pacific lamprey and Monterey hitch. General Policies 11.1.1 and 11.4.1 would prevent most impacts to these species.

Exposure to ALAN may also affect steelhead, lamprey, and hitch in a variety of ways. For example, an increase in nighttime illuminance can disturb the seasonal and diel light cycles of freshwater invertebrates that steelhead feed on by disrupting their nocturnal drift periods, which is timed with low predation risk (Flecker 1992, Miyasaka and Nakano 2001, Hernandez and Peckarsky 2014). This can reduce the nocturnal drift activity by freshwater invertebrates, and potentially reduce the availability of prey for foraging steelhead. In addition, an increase in nighttime illuminance can disrupt the temporal and spatial movement patterns of steelhead fry that typically disperse and migrate at night to decrease their risk of predation (Scheuerell and Schindler 2003, Stich et al. 2015, Zapata et al 2019). Numerous studies have shown that an increase in nighttime illuminance on bodies of water can inhibit foraging activity, increase predation risk on fish, and significantly change the composition of fish communities that occur across a day-night period (Riley et al. 2013, Zapata et al. 2014). As such, the health and viability of the steelhead, lamprey, and hitch populations that occur in the plan area could be impacted by exposure to ALAN.

Activities associated with City-wide policies, infill areas, and new growth areas could potentially affect these species.

General Plan 2050 Policies and Actions that are expected to reduce impacts to special-status fish include:

- **Action C-1.1.2 Rewilding of Slough, Riparian Corridors and other environmentally sensitive areas.** The City shall support the rewilding of sensitive environmental areas as appropriate and recommended by resource agencies.
- **Action C-1.1.3 Identifying Riparian Corridors.** For each proposed project site within or adjacent to riparian habitat, the City will require detailed mapping of the riparian corridor and required buffer zone. The riparian corridor shall be defined as the topographic top-of bank or the limit of riparian vegetation, whichever is greater. Surveys will be conducted by qualified biologists and will include recommendations for avoiding impacts to riparian habitat to the extent feasible, demarcation of the riparian corridor on site, identify wildlife corridors, and protection of vegetation using Environmentally Sensitive Area fencing. This requirement shall apply prior to City consideration of any project proposal for the site.
- **Action C-1.1.6 Rewilding.** The City shall support the rewilding of riparian and wetland habitat by requiring it as a condition of development where it abuts private projects, and by seeking grants and other resources for restoration in other areas. Rewilding efforts shall be planned comprehensively and use native plants from regional seed stocks.

- **Action C-1.1.7 Chemical Usage and Integrated Pest Management.** The City shall use integrated pest management techniques when appropriate. Chemical usage for the control of pests and invasive species will use the least toxic products available.
- **Action C-1.2.1 Buffering Riparian Areas.** The City shall prepare an Ordinance that clarifies the process for determining appropriate buffers from development. The Ordinance shall clarify how to determine when a wetland/riparian area meets the Army Corps criteria for wetlands and how to clearly delineate the boundaries of the wetland/riparian area with a to-scale map as part of the process. Additionally, the map shall establish an appropriate size and configuration of areas required to buffer the wetland/riparian area, allowing for wildlife corridors and/or the natural flow of water through the area. For each proposed project with a wetland/riparian area, the City will require an analysis of the site to be prepared by a qualified biologist. The wetland/riparian buffer should be no less than 100 feet from the edge of the riparian area and shall be of sufficient size to protect wetland/riparian area species and their habitat from the impacts of human and urban activity (noise, lights, and human traffic). No development is to occur within the buffer area. The buffer may be reduced to below 100 feet under certain circumstances, following resource analysis by a qualified biologist and subject to criteria defined in the buffer ordinance. In considering the reduction of the buffer requirement, the ordinance shall consider:
 - Biological condition of the environmentally sensitive resource;
 - Existence of structures or other improvements currently within the resource setback;
 - Average setback to housing, commercial buildings and other development on adjacent properties;
 - Occurrence of project site within an urban location where most properties are already developed and parcels are generally small;
 - Potential of the project construction or operations to disrupt the continuity of riparian habitat or preclude restoration of vegetation along a creek channel where upstream and downstream habitat are of good quality;
 - The potential for occurrence of special-status species within the riparian corridor; and
 - Potential for a project to significantly reduce the moisture that stream side vegetation receives from natural drainage of upland areas.

Projects adjacent to or containing riparian or wetland habitats that cannot provide a protective buffer shall undergo environmental review under CEQA to protect these resources and avoid potential impacts.

- **Action C-2.1.3 Point and Non-Point Pollutants.** The City shall continue to control pollutants from point and nonpoint sources through a comprehensive NPDES Stormwater Program.
- **RCM-2.1.6 Protect Water Quality** - Protect water quality under City BMPs, including preventing sediment from entering aquatic habitat, requiring use of silt fencing, and developing

and implementing a hazardous materials spill prevention plan, thereby preventing impacts to special-status special-status fish species and their habitats.

Impacts to in-stream habitat are addressed under Impact Bio-3. Implementation of Mitigation Measures BIO-6 and 8-11 will reduce other impacts to this species to **less-than-significant** levels.

Mitigation Measure BIO-9: Reduce Direct Impacts to Special-Status Fish

The following measures shall be implemented by project applicants or applicable City departments during construction to reduce impacts to special-status fish:

1. Construction within the channel will be restricted to the dry season (June 1 - September 30), the period in which there is minimal water in the channel and in which movement of steelhead and lamprey within the project area is expected to be minimal.
2. When work in a flowing stream is unavoidable, any stream flow shall be diverted around the work area by a barrier, temporary culvert or a new channel capable of permitting upstream and downstream fish movement. The temporary construction of a diversion structure within a water of the U.S. (jurisdictional water) will require permits from the USACE and CDFW. Construction of the barrier or the new channel shall normally begin in the downstream area and continue in an upstream direction and the flow shall be diverted only when construction of the diversion is completed.

Mitigation Measure BIO-10: Mitigate for Lost Shaded Riverine Aquatic Habitat.

Impacts to riparian habitat will be addressed under Impact Bio-2. This mitigation shall include replacement of shaded riverine aquatic habitat (SRA) at a 2:1 ratio on a linear footage basis, and shall be identified by project applicants or applicable City departments during the project-specific CEQA process and implemented by the applicants or applicable City departments prior to or concurrent with the impacts.

4.4.3.6 1d: Impacts to Burrowing Owls (Less than significant with mitigation)

Burrowing owls could occur in California annual grassland habitat and margins of agricultural areas in the Highway 1 Gateway, Buena Vista, and Atkinson new growth areas where ground squirrels are present. In addition, burrowing owls are known to occur along the train tracks in the Highway 1 Gateway new growth area where riprap provide suitable burrows. Construction-related disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered take by CDFW. Any loss of burrowing owls or fertile eggs, any activities resulting in nest abandonment, or the destruction of occupied burrowing owl burrows would constitute a significant impact.

Development in California annual grassland habitat may also result in the loss of habitat. There is no evidence that the availability of grassland habitat is limiting populations of the nonbreeding owls that occupy grasslands in Santa Cruz County in winter, given the very low numbers of individuals relative to the abundance of ostensibly suitable habitat. However, if burrowing owls were breeding in California annual grassland habitat that was developed, then the loss of occupied habitat would be considered significant.

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Animals are adapted to the natural sounds in their environment, either from abiotic (e.g., wind, rain) or biotic (other animals) sources. Natural sounds provide information to wildlife to assess threats, find food, locate mates, and navigate terrain. Animals may alter their behavior due to noise, becoming more vigilant of predators where sounds are masked and reducing time spent foraging and hunting in areas due to fear of encountering humans. Following construction, increased levels of human disturbance and noise in and adjacent to suitable habitat may result in burrowing owls avoiding otherwise suitable habitat.

Burrowing owls may also be impacted by an increase in ALAN in growth areas due to development. ALAN has been shown to increase the nocturnal activity of predators like owls, hawks, and mammalian predators (Negro et al 2000, Longcore and Rich 2004, DeCandido and Allen 2006, Beier 2006). As a result, burrowing owls in the plan area may be exposed to increased levels of predation risk. The presence of ALAN may also influence habitat use by breeding birds (Rogers et al. 2006, de Molenaar et al. 2006), by causing avoidance of well-lit areas, resulting in a net loss of habitat availability and quality.

Activities associated with City-wide policies and infill areas are not expected to affect this species. Impacts could occur as a result of construction and ALAN in new growth areas.

General Plan 2050 Policies and Actions that are expected to reduce impacts to burrowing owls include:

- **Action 1.1.1 Resource Zoning.** The City shall continue to limit urban development and to preserve natural open spaces and wildlife corridors, in identified environmentally sensitive areas that are zoned EM-OS (Environmental Management Open Space)
- **Action 1.1.5 Invasive Plants.** The City shall make every effort to remove invasive plants from City property that threaten to disrupt natural habitat areas. Any vegetation along waterways that is removed should be replaced with native species. This not only prevents erosion and stabilizes banks, but it also improves wildlife habitat. Projects adjacent to environmentally sensitive areas shall be conditioned to install native plants adjacent to the sensitive area. The City shall require private developers to install low-water native planting whenever feasible.
- **RCM-1.1.7 Chemical Usage and Integrated Pest Management** - Use integrated pest management techniques when appropriate and otherwise use the least toxic products for control of pests and invasive species, which would reduce the potential for incidental impacts on burrowing owls.

Implementation of Mitigation Measures BIO-8, 11, and 12 will reduce impacts to a **less-than-significant** level.

Mitigation Measure BIO-11: Avoid Impacts to Burrowing Owls

This mitigation shall be implemented by project applicants or applicable City departments prior to construction if ground disturbance will occur in or within 250 feet of potentially suitable burrowing owl habitat.

Preconstruction Surveys. Preconstruction surveys for burrowing owls should be completed in all potentially suitable habitat within 250 feet of ground disturbance in conformance with CDFW protocols, no more than 14 days prior to the start of construction. To maximize the likelihood of detecting owls, the preconstruction survey shall

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last a minimum of three hours. The survey shall begin one hour before sunrise and continue until two hours after sunrise (three hours total) or begin two hours before sunset and continue until one hour after sunset. A minimum of two surveys shall be conducted (if owls are detected on the first survey, a second survey is not needed). Owls observed shall be counted and their location shall be mapped. Surveys shall conclude no more than two calendar days prior to construction; thus, surveys must begin no less than four days prior to the start of construction, operations, or reclamation activities (two days of surveying plus up to two days between surveys and construction).

To avoid last-minute changes in schedule that may occur if burrowing owls are found, a preliminary survey may be conducted up to 14 days before construction. This preliminary survey may count as the first of the two required surveys, as long as the second survey concludes no more than two calendar days in advance of construction. If the preconstruction survey does not identify the presence of burrowing owls on or within 250 feet of the site, no further measures are necessary. However, should the preconstruction survey determine the presence of burrowing owls on or within 250 feet the site, then the applicant shall implement the following avoidance measures.

1. Avoidance during the Breeding Season. If evidence of burrowing owls is found during the breeding season (February 1 to August 31), all nesting or roosting sites that could be disturbed by construction shall be avoided during the remainder of the breeding season (if owls remain throughout the breeding season) or while the nest (i.e., a burrow occupied during the period February 1 to August 31) is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). Although burrowing owls are unlikely to nest in the plan area, there is a remote possibility that nesting may occur. Wintering owls in Santa Cruz County often remain past February 1, at which time they cannot be distinguished from breeding birds. As a result, any owl present between February 1 and August 31 will be considered a potential breeder unless and until it leaves the site.

Avoidance shall include establishment of a 250-foot non-disturbance buffer zone around nests. Demolition and construction may occur outside of the 250-foot non-disturbance buffer zone. Demolition and construction may occur inside of the 250-foot non-disturbance buffer during the breeding season only if the nest is not disturbed, and a qualified biologist develops an avoidance, minimization, and monitoring plan prior to Project construction that includes all of the following criteria:

- A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.
- If there is any change in owl nesting and foraging behavior as a result of construction activities, all disturbance activities shall cease within the 250-foot buffer. Construction shall not resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the Project area and 250-foot buffer.

- If monitoring indicates that the nest is abandoned prior to the end of the nesting season (as would occur if a wintering owl lingered past February 1 and then eventually migrated to its breeding areas outside the region), and the burrow is no longer in use by owls, the non-disturbance buffer zone may be removed. The qualified biologist will excavate the burrow to ensure that no owls are present and to prevent reoccupation after receiving approval from CDFW.
2. Avoidance during the Non-Breeding Season. During the non-breeding season (September 1 through January 31), a 250-foot non-disturbance buffer shall be established around occupied burrows as determined by a qualified biologist. Construction activities outside of this 250-foot buffer are allowed. Construction activities within the 250-foot buffer are allowed if all the following criteria are met to prevent owls from abandoning important overwintering sites:
- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
 - The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
 - If there is any change in owl nesting and foraging behavior as a result of construction activities, all disturbance activities shall cease within the 250-foot buffer.
 - If the owls are gone for at least one week, the Project applicant may request approval from CDFW that a qualified biologist excavate or block usable burrows to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

Construction Monitoring. Based on the avoidance, minimization, and monitoring plan developed during construction, all non-disturbance buffer zones shall be established and maintained. A qualified biologist shall monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed. The biological monitor shall also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone or within 250 feet of such zone.

Owls present on site after February 1 will be assumed to be nesting on or adjacent to the site unless evidence indicates otherwise. This protected area will remain in effect until August 31, or at CDFW's discretion and based upon monitoring evidence, until the young owls are foraging independently.

Relocation. If construction will directly impact occupied burrows, eviction outside the nesting season may be permitted pending evaluation of eviction plans by, and receipt of formal written approval of the relocation from, CDFW. No burrowing owls will be evicted from burrows during the nesting season (February 1 through August 31) unless evidence indicates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because young have already fledged late in the season).

Mitigation Measure BIO-12: Compensate for Impacts to Occupied Burrowing Owl Habitat

This mitigation shall be identified during the project-specific CEQA process and implemented by project applicants and applicable city departments prior to or concurrent with impacts if destruction of habitat known to be occupied by breeding burrowing owls within the past three years is unavoidable. A qualified biologist will determine the extent of habitat impacted by the project. Compensatory mitigation for individual project impacts on the burrowing owl habitat will be provided via the purchase of credits from a conservation bank or mitigation bank that has restored suitable habitat for the burrowing owl; project-specific mitigation via the preservation and management of suitable habitat for this species; or some combination of the two approaches. If no CDFW-approved conservation banks specifically for the burrowing owl are available, credits in a bank that provides suitable habitat for, and is expected to be occupied by, this species would be adequate. Compensatory mitigation shall be provided at a minimum ratio of 3:1 (mitigation:impact) on an acreage basis if project-specific mitigation is performed or 1:1 if credits are purchased from a mitigation or conservation bank. Compensatory mitigation shall be provided for any potentially suitable habitat for these species that is permanently lost to development or that is present within 50 ft of any new or higher-intensity lighting installed by General Plan activities.

If project-specific mitigation is provided as compensatory mitigation, the applicant will prepare an HMMP describing the measures that will be taken to create, restore, or enhance habitat for the burrowing owl and monitor the effects of the mitigation on this species. The HMMP will include, at a minimum, the following:

- A summary of project impacts on the burrowing owl and the proposed mitigation of these impacts;
- A description of the location and boundaries of the mitigation site and a description of existing mitigation site conditions;
- A description of measures to be undertaken, if necessary, to enhance (e.g., through focused management) the mitigation site for the burrowing owl;
- Proposed management activities, such as management of invasive plants, to maintain high-quality habitat conditions for the burrowing owl;
- A description of community and species monitoring measures on the mitigation site, including specific, objective goals and objectives, performance indicators, success criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule. At a minimum, success criteria will include demonstration that habitat conditions are suitable for occupancy by the burrowing owl. Monitoring will occur until these criteria are achieved but for no less than 5 years;
- A description of the HMMP's adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria; and
- A description of the funding mechanism to ensure the long-term maintenance and monitoring of the mitigation lands.

The HMMP will be submitted to the CDFW for review and approval prior to implementation.

4.4.3.7 1e: Impacts to Other Special-Status Birds (Less than significant with mitigation)

Several special-status bird species (not listed under the Federal or State Endangered Species Acts) could potentially be impacted by construction activities during the nesting season (March 1 to August 31). These species include the northern harrier, yellow warbler, loggerhead shrike, and white-tailed kite. Construction could result in direct loss or desertion of nests, and impacts to occupied habitat for these birds. Because projects within the planning area are expected to result in only limited impacts to suitable habitat for these species, impacts to their habitat are considered less than significant. Loss of individual birds, including chicks, or loss of active nests would be in violation of federal and state regulations, but depending on the severity of the impact, may not be considered a significant impact under CEQA.

These species may also be impacted by increased ALAN, possibly resulting in reduced breeding success due to increased nest predation and avoidance of otherwise suitable habitat.

Activities associated with City-wide policies and infill areas are not expected to affect these species. Impacts could occur as a result of construction and ALAN in new growth areas.

General Plan 2050 Policies, and Actions that are expected to reduce impacts to other special-status birds include:

- **Action 1.1.1 Resource Zoning.** The City shall continue to limit urban development and to preserve natural open spaces and wildlife corridors, in identified environmentally sensitive areas that are zoned EM-OS (Environmental Management Open Space)
- **Action C-1.1.3 Identifying Riparian Corridors.** For each proposed project site within or adjacent to riparian habitat, the City will require detailed mapping of the riparian corridor and required buffer zone. The riparian corridor shall be defined as the topographic top-of bank or the limit of riparian vegetation, whichever is greater. Surveys will be conducted by qualified biologists and will include recommendations for avoiding impacts to riparian habitat to the extent feasible, demarcation of the riparian corridor on site, identify wildlife corridors, and protection of vegetation using Environmentally Sensitive Area fencing. This requirement shall apply prior to City consideration of any project proposal for the site.
- **Action 1.1.5 Invasive Plants.** The City shall make every effort to remove invasive plants from City property that threaten to disrupt natural habitat areas. Any vegetation along waterways that is removed should be replaced with native species. This not only prevents erosion and stabilizes banks, but it also improves wildlife habitat. Projects adjacent to environmentally sensitive areas shall be conditioned to install native plants adjacent to the sensitive area. The City shall require private developers to install low-water native planting whenever feasible.
- **Action C-1.1.6 Rewilding.** The City shall support the rewilding of riparian and wetland habitat by requiring it as a condition of development where it abuts private projects, and by seeking grants and other resources for restoration in other areas. Rewilding efforts shall be planned comprehensively and use native plants from regional seed stocks.

- **Action C-1.1.7 Chemical Usage and Integrated Pest Management.** The City shall use integrated pest management techniques when appropriate. Chemical usage for the control of pests and invasive species will use the least toxic products available.
- **Action C-1.2.1 Buffering Riparian Areas.** The City shall prepare an Ordinance that clarifies the process for determining appropriate buffers from development. The Ordinance shall clarify how to determine when a wetland/riparian area meets the Army Corps criteria for wetlands and how to clearly delineate the boundaries of the wetland/riparian area with a to-scale map as part of the process. Additionally, the map shall establish an appropriate size and configuration of areas required to buffer the wetland/riparian area, allowing for wildlife corridors and/or the natural flow of water through the area. For each proposed project with a wetland/riparian area, the City will require an analysis of the site to be prepared by a qualified biologist. The wetland/riparian buffer should be no less than 100 feet from the edge of the riparian area and shall be of sufficient size to protect wetland/riparian area species and their habitat from the impacts of human and urban activity (noise, lights, and human traffic). No development is to occur within the buffer area. The buffer may be reduced to below 100 feet under certain circumstances, following resource analysis by a qualified biologist and subject to criteria defined in the buffer ordinance. In considering the reduction of the buffer requirement, the ordinance shall consider:
 - Biological condition of the environmentally sensitive resource;
 - Existence of structures or other improvements currently within the resource setback;
 - Average setback to housing, commercial buildings and other development on adjacent properties;
 - Occurrence of project site within an urban location where most properties are already developed and parcels are generally small;
 - Potential of the project construction or operations to disrupt the continuity of riparian habitat or preclude restoration of vegetation along a creek channel where upstream and downstream habitat are of good quality;
 - The potential for occurrence of special-status species within the riparian corridor; and
 - Potential for a project to significantly reduce the moisture that stream side vegetation receives from natural drainage of upland areas.
 - Projects adjacent to or containing riparian or wetland habitats that cannot provide a protective buffer shall undergo environmental review under CEQA to protect these resources and avoid potential impacts.
- **Action C-2.1.3 Point and Non-Point Pollutants.** The City shall continue to control pollutants from point and nonpoint sources through a comprehensive NPDES Stormwater Program.

Mitigation Measure BIO-8 will reduce impacts to these birds due to ALAN, and BIO-13 will reduce any impacts to the nests of these birds due to construction to a **less-than-significant** level.

Mitigation Measure Bio-13: Avoid Nesting Birds

This mitigation shall be implemented by project applicants and applicable City departments prior to construction activities.

Seasonal Avoidance. The nesting season for most birds in Santa Cruz extends between February 1 and August 31. If construction in or near suitable habitat for these species can be scheduled outside of this nesting season, nesting birds will not be impacted and no further mitigation is necessary.

Preconstruction Surveys and Buffer Zones. If construction in or near suitable habitat for these species must occur during the breeding season ((typically February 15 to August 31 for small bird species such as passerines; January 15 to September 15 for owls; and February 15 to September 15 for other raptors), a qualified ornithologist shall conduct two preconstruction surveys wherever suitable habitat is present no more than 14 days prior to the initiation of disturbance, with a final survey conducted within 48 hours prior to construction. Appropriate minimum survey radii surrounding the work area are typically the following: i) 250 feet for passerines; ii) 500 feet for small raptors such as accipiters; and iii) 1,000 feet for larger raptors such as buteos. Surveys shall be conducted at the appropriate times of day and during appropriate nesting times. If active nests are found to be present within or adjacent to work sites during the breeding season, a qualified biologist should determine the species-appropriate width of this buffer. The buffer shall be clearly marked and maintained until the young have fledged and are foraging independently. Prior to construction, the qualified biologist shall conduct baseline monitoring of the nest to characterize “normal” bird behavior and establish a buffer distance which allows the birds to exhibit normal behavior. The qualified biologist shall monitor the nesting birds daily during construction activities and increase the buffer if the birds show signs of unusual or distressed behavior (e.g., defensive flights and vocalizations, standing up from a brooding position, and/or flying away from the nest). If buffer establishment is not possible, the qualified biologist shall have the authority to cease all construction work in the area until the young have fledged, and the nest is no longer active.

1f: Impacts to Special-Status and Common Bats (Less than significant with mitigation)

The western red bat (a California species of special concern) usually roosts in the foliage of trees (Pierson et al. 2006). Day and night roosts are often located along the edges of riparian areas, near streams, grasslands, and even urban areas. During the breeding season, western red bats establish individual tree roosts and occasionally small maternity colonies in riparian habitats (Harris 2000b). Western red bats are not known to breed in Santa Cruz County, but are known to occur as migrants and winter residents in the county and adjacent counties (iNaturalist 2025, CNDDB 2025). Although little is known about the habitat use of western red bats during the nonbreeding season (Pierson et al. 2006), there is ample suitable habitat for this species within the plan area, and it could occur as individual migrants and/or winter residents.

The pallid bat (a California species of special concern) is a crevice-roosting bat. There are large enough trees to provide roosting for individual bats, and buildings within the plan area may provide suitable habitat for maternity roosts. As such, although pallid bats have not been documented in the plan area, they could occur as individual migrants and foragers, in large roosts, or in maternity colonies.

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The Townsend's big-eared bat (a California species of special concern) roosts in large, open areas rather than crevices. Although this species has not been documented in the plan area, it is known to occur in suitable habitat in Santa Cruz, Santa Clara, San Benito, and Monterey Counties. Barns and abandoned buildings (such as the Redman-Hirahara house in the Highway 1 Gateway area) provide suitable habitat for day roosts and night roosts.

In addition to these species, other common species of bats occur in the plan area and may form large day roosts, night roosts, and/or hibernacula.

Unlike most birds, bats experience daily bouts of torpor (decreased physiological activity marked by a reduction in metabolic rate, heart rate, and respiratory rate) to save energy during seasonally cool periods. As a result, torpid bats cannot immediately fly away when disturbed, and typically require upwards of 40 minutes to arouse and flee. Therefore, there is the potential for tree removal, building demolition, or construction to injure or kill bats.

Bats may also be negatively impacted by ALAN. Bats may reduce activity or fly faster past lit roadways and buildings, resulting in overall reduced habitat availability and connectivity (Barré 2021). ALAN may also impact the activity of insects in that area, as some orders such as Coleoptera (beetles), Diptera (flies), and Lepidoptera (butterflies and moths) may be attracted to ALAN, while Blattodea (cockroaches and termites) and Dermaptera (earwigs) may be repulsed by ALAN (Owens and Lewis 2018). As a result, bat species that avoid areas with increased ALAN may have reduced prey availability within adjacent areas.

Western red bats, pallid bats, Townsend's big-eared bats, and common species of bats may roost in foliage, large trees, or buildings in the planning area. Impacts to roosting individuals, foraging individuals, or foraging habitat would not be considered significant. Loss of maternity colonies or large roosts would be a significant impact because when trees or buildings containing roosting colonies are removed or modified, individual bats could be physically injured or killed; subjected to physiological stress from being disturbed during torpor; or face increased predation because of exposure during daylight. Construction during the maternity season (April 1 to July 31) near maternity roosts may cause mothers to attempt to relocate to new roosts. Some females may find alternative roosts in other trees or buildings. If females are forced to abandon a roost early in the maternity season (e.g., in April or May), their young may be small enough that the females can carry the young to a new roost. However, if females leave the roost later in the maternity season (e.g., June or July), the young may be too large to carry, and abandonment of young or unsuccessful attempts to relocate young could lead to their mortality.

Project construction could result in the loss of trees in coast live oak woodland and riparian woodland. These areas may serve as roost sites for pallid bats, western red bats, and Townsend's big-eared bats. Further, construction within Buena Vista, Atkinson Lane, and Area C new growth areas would result in the loss of vegetated foraging habitat for these three bat species, including California annual grassland for the pallid bat and riparian woodland for the Western red bat and Townsend's big eared bat. If these species abandon a roost during construction, but the tree containing the roost is not removed, they may return to the roost once construction has been completed. However, unless high-quality alternative roost sites are present in the vicinity, the population may decline before the bats can re-occupy the roost due to permanent dispersal of females away from the roost, lower reproductive success by females using inferior roost sites (such as roosts located farther from high-quality foraging habitat), or predation of bats that are unable to find suitable roost sites. Loss of

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vegetation may also reduce prey abundance and availability for foraging bats. Therefore, the impact of project construction on special-status bats and their habitat would be significant.

Activities associated with City-wide policies, infill areas, and new growth areas could impact bats if buildings or trees that support roosting or maternity colonies are removed.

General Plan 2050 Policies and Actions that are expected to reduce impacts to special-status and common bats include:

- **Action 1.1.1 Resource Zoning.** The City shall continue to limit urban development and to preserve natural open spaces and wildlife corridors, in identified environmentally sensitive areas that are zoned EM-OS (Environmental Management Open Space)
- **Action C-1.1.6 Rewilding.** The City shall support the rewilding of riparian and wetland habitat by requiring it as a condition of development where it abuts private projects, and by seeking grants and other resources for restoration in other areas. Rewilding efforts shall be planned comprehensively and use native plants from regional seed stocks.
- **Action C-1.1.7 Chemical Usage and Integrated Pest Management.** The City shall use integrated pest management techniques when appropriate. Chemical usage for the control of pests and invasive species will use the least toxic products available.
- **RCM-1.2.1 Buffering Riparian Areas-** Determine appropriate riparian buffers to prevent impacts to habitat suitable for bats and prevent impacts to individual bats.

Mitigation measures BIO-8, 14, 15, and 16 will reduce any impacts to bats to a less-than-significant level.

Mitigation Measure BIO-14. Conduct Preconstruction Surveys for Roosting Bats and Implement Avoidance Measures

This mitigation shall be implemented by project applicants and applicable City departments prior to construction activities.

A preconstruction survey for roosting bats should be conducted prior to any construction adjacent to suitable habitat or demolition of buildings, particularly those with closed areas such as an attic space, or trees ≥ 12 inches in diameter at 4.5 feet above grade. Pallid bats occasionally roost in the walls of occupied and abandoned buildings without showing any signs of occupying the attic and will roost in tree branch cavities only 6 inches in diameter. The survey should be conducted by a qualified bat biologist. No activities that would result in disturbance to active roosts would proceed prior to the completed surveys. If no active roosts are found, then no further action would be warranted. If a maternity roost is present, a qualified bat biologist would determine the extent of construction-free zones around active nurseries since these species are known to abandon young when disturbed. If either a maternity roost or hibernacula is present, Mitigation BIO-15 should be implemented. CDFW should also be notified of any active nurseries within the construction zone. If active maternity roosts or hibernacula are found, the project could be redesigned to avoid the loss of the building or tree occupied by the roost.

Mitigation Measure BIO-15. Exclude Bats Prior to Demolition of Roosts

This mitigation shall be implemented by project applicants and applicable City departments prior to construction activities.

If an active nursery roost is located and the project cannot be redesigned to avoid removal of the occupied tree or structure, demolition of that tree or structure should commence before maternity colonies form (i.e., prior to April 1) or after young are volant (flying) (i.e., after July 31). The disturbance-free buffer zones described in above should be observed during the maternity roost season (April 1 - July 31).

If the preconstruction survey reveals any structure is suitable roosting habitat for bats, then the appropriate exclusionary measures will be implemented prior to construction. Potential avoidance may include exclusionary blocking or filling potential cavities with foam, visual monitoring and staging Project work to avoid bats. If bats are known to use the structure, exclusion netting shall not be used.

If the habitat assessment reveals suitable bat habitat in trees and tree removal is scheduled tree removal shall be removed using a two-day phased method. The two-phase system shall be conducted over two (2) consecutive days. On day one (1), (in the afternoon) under the supervision of a qualified biologist, all tree limbs containing bat habitat shall be removed using chainsaws or other hand tools. Limbs with cavities, crevices, or deep bark fissures are avoided and only branches or limbs without those features are removed. On day two (2), the next day, the rest of the tree shall be removed.

Mitigation Measure BIO-16. Compensate for Loss of Maternity Roosts

This mitigation shall be implemented by project applicants and applicable City departments prior to construction activities.

If a tree or any other structure containing a bat maternity roost must be removed as part of the Project, a qualified biologist shall design and determine an appropriate location for an alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity. The roost structure shall be built to specifications as determined by a qualified biologist and CDFW, or it may be purchased from an appropriate vendor, though the design must be approved by a qualified biologist and CDFW. The structure shall be placed as close to the impacted roost site as feasible, though it will be located far enough from future Project activities so as to avoid disturbance of bats using the roost. The Applicant shall monitor the roost for three years or until occupancy is determined (whichever occurs first) to determine use by bats and submit annual reports verifying monitoring results to the County Department of Planning and Development.

4.4.3.8 Impact Bio-2: Temporary and Permanent Loss or Degradation of Riparian Habitat (Less than significant)

Citywide activities, including infrastructure repair and construction projects, flood control activities, construction of recreational trails, and the general increase in impervious surfaces, could result in the loss or degradation of riparian habitat within the Watsonville slough system, the Pajaro River, Corralitos Creek, and Salsipuedes Creek. Riparian habitat within the City limits is highly fragmented and degraded by invasion of non-native species, human use, and changes in hydrology.

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In the new growth areas, riparian woodland occurs at the edge of Corralitos Creek in the Atkinson Lane new growth area. Build-out of these parcels will potentially affect riparian woodland habitat through temporary and permanent direct impacts during construction, and indirect impacts due to increased runoff, invasion of non-native species, and increased human use.

Riparian habitat is a regionally-limited biological resource, is subject to the regulatory jurisdiction of CDFW, and is protected by County regulations. Significant impacts to riparian habitats include the disturbance or removal of substantial riparian vegetation, the filling, alteration or disturbance of stream channel bed and banks, the encroachment into riparian setback (buffer) areas and the disruption of stream channel flows. Discharge of fill into riparian areas may also require a Clean Water Act Section 404 permit from the USACE and a Section 401 certification from the Central Coast Regional Water Quality Control Board (RWQCB), as well as consultation with USFWS if federally-listed species are present. Furthermore, impacts from encroachment into riparian buffer zones may be considered significant.

Riparian and sensitive habitats would be protected within the plan area in accordance with the following Policies and Actions in the 2050 General Plan.

General Plan 2050 Policies and Actions that Mitigate Impacts:

Policy C-1.1 Protection of Ecologically Sensitive Areas. The City shall seek to protect ecologically sensitive areas, including the Pajaro River, Salsipuedes Creek, Corralitos Creek, and the Wetlands of Watsonville.

Action 1.1.1 Resource Zoning. The City shall continue to limit urban development and to preserve natural open spaces and wildlife corridors, in identified environmentally sensitive areas that are zoned EM-OS (Environmental Management Open Space).

Action C-1.1.2 Rewilding of Slough, Riparian Corridors and other environmentally sensitive areas. The City shall support the rewilding of sensitive environmental areas as appropriate and recommended by resource agencies.

Action C-1.1.3 Identifying Riparian Corridors. For each proposed project site within or adjacent to riparian habitat, the City will require detailed mapping of the riparian corridor and required buffer zone. The riparian corridor shall be defined as the topographic top-of bank or the limit of riparian vegetation, whichever is greater. Surveys will be conducted by qualified biologists and will include recommendations for avoiding impacts to riparian habitat to the extent feasible, demarcation of the riparian corridor on site, identify wildlife corridors, and protection of vegetation using Environmentally Sensitive Area fencing. This requirement shall apply prior to City consideration of any project proposal for the site.

Action 1.1.4 Use of Native Plants. The City shall, for the maintenance and operation of its property within ecologically sensitive areas (e.g., wetlands), use native plants and shall avoid the planting of non-native plants.

Action 1.1.5 Invasive Plants. The City shall make every effort to remove invasive plants from City property that threaten to disrupt natural habitat areas. Any vegetation along waterways that is

removed should be replaced with native species. This not only prevents erosion and stabilizes banks, but it also improves wildlife habitat. Projects adjacent to environmentally sensitive areas shall be conditioned to install native plants adjacent to the sensitive area. The City shall require private developers to install low-water native planting whenever feasible.

Action C-1.1.6 Rewilding. The City shall support the rewilding of riparian and wetland habitat by requiring it as a condition of development where it abuts private projects, and by seeking grants and other resources for restoration in other areas. Rewilding efforts shall be planned comprehensively and use native plants from regional seed stocks.

Action C-1.1.7 Chemical Usage and Integrated Pest Management. The City shall use integrated pest management techniques when appropriate. Chemical usage for the control of pests and invasive species will use the least toxic products available.

Goal C-3 Storm Water Management. Ensure that stormwater runoff is effectively managed to minimize pollutants and debris, protect natural drainage systems and water bodies, and promote the use of sustainable, site-integrated practices that enhance environmental quality and community character.

Policy C-3.1 Stormwater runoff free from urban pollutants and refuse. The City shall minimize pollutants and debris in stormwater runoff through appropriate regulations, maintenance practices, and public education.

Action C-3.1.1 All projects shall incorporate Stormwater Best Management Practices that achieve the most effective control of pollutants and flow control practicable. Wherever possible, natural BMPs (such as grassy swales, ponds and biofilters) shall be used. These BMPs should be incorporated into site landscaping design, for recreational and aesthetic enhancement. Engineered BMPs (such as vaults and interceptors) shall only be used when no natural BMP can be incorporated into the site design, or when a critical natural resource requires protection beyond that attainable by natural BMPs alone.

Action-3.1.2 Construction Site Best Management Practices (BMPs). The City shall require all construction sites to implement erosion and sediment control BMPs to the maximum extent practicable. Construction sites shall comply with City Erosion Control Standards, and an Erosion Control Plan shall be required for project approval.

Additionally, the following specific mitigation measures are proposed to be added to the 2050 General Plan to further reduce impacts to riparian habitats:

Mitigation Measure BIO-17: Conduct Riparian Surveys for Proposed Development and Infrastructure Projects

For each proposed project site within or adjacent to riparian habitat, the City will require detailed mapping of the riparian corridor. The riparian corridor shall be defined as the topographic top-of bank or the limit of riparian vegetation, whichever is greater. Surveys will be conducted by qualified biologists and will include recommendations for avoiding impacts to riparian habitat to the extent feasible, demarcation of the riparian

corridor on site, and protection of vegetation using Environmentally Sensitive Area fencing. This requirement shall apply prior to City consideration of any project proposal for the site.

Mitigation Measure BIO-198: Establish Riparian Habitat Setback Requirements

For each proposed project site adjacent to riparian habitat, the City will require the applicant or applicable City departments to conduct an analysis of an appropriate riparian setback by a qualified biologist during the project-specific CEQA process to be reviewed by the City. The riparian buffer shall be a minimum of 50 feet from the edge of the riparian corridor (defined above), or of sufficient size to protect sensitive species and their habitat from the impacts of human and urban activity (noise, lights, and human traffic). A riparian setback of at least 100 feet is typically appropriate for high-quality riparian habitat. No development will occur within the buffer area. In highly degraded areas, the setback requirement may be reduced following habitat analysis by a qualified biologist. In considering the reduction of the setback requirement, the following conditions shall be considered:

- Biological condition of the riparian habitat
- Existence of structure or other improvements currently within the riparian setback
- Average setback on adjacent properties
- Occurrence of project site within an urban location where most properties are already developed and parcels are generally small
- Potential of the project construction or operations to disrupt the continuity of riparian habitat or preclude restoration of vegetation along a creek channel where upstream and downstream habitat are of good quality
- Occurrence or potential for occurrence of special-status species within the riparian corridor
- Potential for project to significantly reduce the moisture streamside vegetation receives from natural drainage from upland areas.

Mitigation Measure BIO-19: Obtain Appropriate Permits and Compensate for Riparian Habitat Loss

This mitigation shall be identified during the project-specific CEQA process and implemented by project applicants and applicable City departments prior to or concurrent with the impacts.

Riparian habitat that will be permanently impacted, or indirectly affected by setback encroachment, by future projects would be replaced at a level that will ensure no net loss of habitat functions and values. In-kind and onsite replacement of lost habitat will be done where possible. The determination of impacts and the subsequent location and design of potential mitigation sites would be determined by qualified biologists. All mitigation sites will be protected in perpetuity.

Acceptable riparian mitigation ratios are based on habitat quality characteristics (e.g., vegetation structure and complexity), which correspond to fish and wildlife habitat value. Impact ratios of 3:1, 2:1, and 1:1 should be applied for impacts to high, medium and low-quality habitats, respectively:

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- High quality – Native overstory with continuous understory or occurring in dense thickets; dense native overstory with sparse, non-native or no understory; and native willow thicket.
- Medium quality – Sparse native overstory with sparse, non-native or no understory, non-native overstory with native understory, and dense non-native overstory with sparse, non-native or no understory.
- Lower quality – Sparse non-native overstory with sparse, non-native or no understory. In addition, any areas not included in medium or high quality categories that will be covered with riprap, gabions, etc. (e.g., ruderal habitat and bare ground).

A Mitigation and Monitoring Plan will be prepared by a qualified restoration ecologist and will provide the following:

1. Summary of habitat impacts and proposed mitigation ratios
2. Goal of the restoration to achieve no net loss of habitat functions and values
3. Location of mitigation site(s) and description of existing site conditions
4. Mitigation design:
 - a. existing and proposed site hydrology
 - b. grading plan if appropriate, including bank stabilization or other site stabilization features
 - c. soil amendments and other site preparation elements as appropriate
 - d. planting plan
 - e. irrigation and maintenance plan
 - f. remedial measures/adaptive management, etc.
5. Monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.)
6. Success shall be evaluated relative to a nearby reference site, which shall be established to document pre-project environmental conditions. Performance criteria include the following: by the end of Year 1, restored areas shall achieve a minimum of 40 percent of the average vegetation cover observed at the reference site. Restored areas shall also demonstrate consistent increases in vegetative cover. By the end of Year 3, restored areas shall attain at least 75 percent of the vegetation cover documented at the reference site. In addition, invasive species ranked as “High” by the California Invasive Plant Council (Cal-IPC) shall not exceed 5 percent absolute cover within the restoration area.
7. Contingency plan for mitigation elements that do not meet performance or final success criteria

Impacts from encroachment into riparian buffer zones may be considered significant. **General Plan Policy C-1.1** encourages the protection of riparian habitat through resource zoning, establishment of buffer zones, setback requirements, requiring restoration as a condition of private development, and agency coordination. **General Plan Action 3.1.1** requires stormwater management BMPs to be incorporated into project design, and **General Plan Action 3.1.2** requires all construction sites to

implement erosion and sediment control BMPs to the maximum extent practicable. With the implementation of these General Plan Policies and Actions, as well as the proposed Mitigation Measures, impacts to riparian habitats are expected to be reduced to a less than significant level. (Less than Significant with Mitigation)

4.4.3.9 *Impact Bio-3: Temporary and Permanent Loss or Degradation of Wetland and Aquatic Habitat (Less than significant)*

Citywide activities, including transportation infrastructure projects and associated stormwater runoff, and the establishment of public access and recreation trails, may directly impact wetland and aquatic habitat. In addition, the increase in impervious surfaces due to new construction of urban infrastructure is expected to increase the runoff of pollutants, including oil and grease, heavy metals, animal feces, fertilizers and pesticides, domestic and industrial chemicals, and soil sediments, into wetland and aquatic habitat. Runoff could cause adverse affects to water quality, resulting in impacts to sensitive aquatic species. In the new growth areas, aquatic habitat occurs within seasonal wetland habitat in Buena Vista new growth area and diked freshwater marsh in the Atkinson Lane new growth area. Additional seasonal wetlands could occur in low-lying depressions in grassland habitat throughout the City limits. Temporary and permanent direct effects to these habitats may occur during proposed build-out of these areas, and increased runoff from impervious surfaces could affect water quality unless treated. Significant impacts to aquatic and wetland habitats include direct removal and filling, as well as creating hydrological interruption. In addition, while some wetland features may be artificial in origin, have ephemeral hydrology, and otherwise may be partially maintained, their loss may also constitute a significant impact.

Potential impacts to federally protected wetlands would be minimized within the plan area in accordance with the following Policies and Actions in the 2050 General Plan.

General Plan 2050 Policies and Actions that Mitigate Impacts:

Policy C-1.1 Protection of Ecologically Sensitive Areas. The City shall seek to protect ecologically sensitive areas, including the Pajaro River, Salsipuedes Creek, Corralitos Creek, and the Wetlands of Watsonville.

Action C-1.1.1 Resource Zoning. The City shall continue to limit urban development and to preserve natural open spaces and wildlife corridors, in identified environmentally sensitive areas that are zoned EM-OS (Environmental Management Open Space).

Action C-1.1.2 Rewilding of Slough, Riparian Corridors and other environmentally sensitive areas. The City shall support the rewilding of sensitive environmental areas as appropriate and recommended by resource agencies.

Action C-1.1.3 Identifying Riparian Corridors. For each proposed project site within or adjacent to riparian habitat, the City will require detailed mapping of the riparian corridor and required buffer zone. The riparian corridor shall be defined as the topographic top-of bank or the limit of riparian vegetation, whichever is greater. Surveys will be conducted by qualified biologists and will include recommendations for avoiding impacts to riparian habitat to the extent feasible, demarcation of the riparian corridor on site, identify wildlife corridors, and protection of vegetation using

Environmentally Sensitive Area fencing. This requirement shall apply prior to City consideration of any project proposal for the site.

Action C-1.1.4 Use of Native Plants. The City shall, for the maintenance and operation of its property within ecologically sensitive areas (e.g., wetlands), use native plants and shall avoid the planting of non-native plants.

Action C-1.1.5 Invasive Plants. The City shall make every effort to remove invasive plants from City property that threaten to disrupt natural habitat areas. Any vegetation along waterways that is removed should be replaced with native species. This not only prevents erosion and stabilizes banks, but it also improves wildlife habitat. Projects adjacent to environmentally sensitive areas shall be conditioned to install native plants adjacent to the sensitive area. The City shall require private developers to install low-water native planting whenever feasible.

Action C-1.1.6 Rewilding. The City shall support the rewilding of riparian and wetland habitat by requiring it as a condition of development where it abuts private projects, and by seeking grants and other resources for restoration in other areas. Rewilding efforts shall be planned comprehensively and use native plants from regional seed stocks.

Action C-1.1.7 Chemical Usage and Integrated Pest Management. The City shall use integrated pest management techniques when appropriate. Chemical usage for the control of pests and invasive species will use the least toxic products available.

Policy C-1.2 Setbacks and Detrimental Activity Limitations. The City shall protect ecologically sensitive areas and provide for their continued health through the use of appropriate setbacks and limitations on potentially detrimental activities.

Action C-1.2.1 Buffering Riparian Areas. The City shall prepare an Ordinance that clarifies the process for determining appropriate buffers from development. The Ordinance shall clarify how to determine when a wetland/riparian area meets the Army Corps criteria for wetlands and how to clearly delineate the boundaries of the wetland/riparian area with a to-scale map as part of the process. Additionally, the map shall establish an appropriate size and configuration of areas required to buffer the wetland/riparian area, allowing for wildlife corridors and/or the natural flow of water through the area. For each proposed project with a wetland/riparian area, the City will require an analysis of the site to be prepared by a qualified biologist. The wetland/riparian buffer should be no less than 100 feet from the edge of the riparian area and shall be of sufficient size to protect wetland/riparian area species and their habitat from the impacts of human and urban activity (noise, lights, and human traffic). No development is to occur within the buffer area. The buffer may be reduced to below 100 feet under certain circumstances, following resource analysis by a qualified biologist and subject to criteria defined in the buffer ordinance. In considering the reduction of the buffer requirement, the ordinance shall consider:

- Biological condition of the environmentally sensitive resource;
- Existence of structures or other improvements currently within the resource setback;

- Average setback to housing, commercial buildings and other development on adjacent properties;
- Occurrence of project site within an urban location where most properties are already developed and parcels are generally small;
- Potential of the project construction or operations to disrupt the continuity of riparian habitat or preclude restoration of vegetation along a creek channel where upstream and downstream habitat are of good quality;
- The potential for occurrence of special-status species within the riparian corridor; and
- Potential for a project to significantly reduce the moisture that stream side vegetation receives from natural drainage of upland areas.

Projects adjacent to or containing riparian or wetland habitats that cannot provide a protective buffer shall undergo environmental review under CEQA to protect these resources and avoid potential impacts.

Policy C-2.1 Promotion of Water Conservation. The City shall encourage the conservation of water and provide for the protection of water quality to assure its use for domestic, agricultural, industrial, recreational, and ecological needs.

Action C-2.1.3 Point and Non-Point Pollutants. The City shall continue to control pollutants from point and nonpoint sources through a comprehensive NPDES Stormwater Program.

Action C-3.1.1 All projects shall incorporate Stormwater Best Management Practices that achieve the most effective control of pollutants and flow control practicable. Wherever possible, natural BMPs (such as grassy swales, ponds and biofilters) shall be used. These BMPs should be incorporated into site landscaping design, for recreational and aesthetic enhancement. Engineered BMPs (such as vaults and interceptors) shall only be used when no natural BMP can be incorporated into the site design, or when a critical natural resource requires protection beyond that attainable by natural BMPs alone.

Action C-3.1.2 Construction Site Best Management Practices (BMPs). The City shall require all construction sites to implement erosion and sediment control BMPs to the maximum extent practicable. Construction sites shall comply with City Erosion Control Standards, and an Erosion Control Plan shall be required for project approval.

Action C-3.1.3 Evaluate Grading Ordinance. The City shall evaluate its grading ordinance and determine if revisions should be made to further enhance environmental protection.

Policy C-6.1 Public Education for Resource Conservation and Waste Reduction. The City shall continue and expand its education efforts to promote water conservation and efficiency, reduce water pollution, and reduce solid waste disposal.

Action C-6.1.1 Water Conservation. The City shall continue the water conservation program which encourages existing rebates and provision of water conserving devices. Public education methods

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include the use of local print and electronic English and Spanish language media, including social media, as well as articles in the City's own newsletter and inserts in the City utility bills. The City shall expand its educational efforts to promote low or no-water use plantings as well as a more efficient use of landscape water on lawns, and to promote reuse, recycling, and composting of discarded materials. The City shall use multiple methods of communication in English, Spanish, and any other significant language group identified.

Action C-6.1.2 Storm Water Pollution Prevention. The City shall continue to expand its residential stormwater pollution prevention program that includes placement of storm drain warning markers on all drainage inlets, provision of educational materials and tools door-to-door, continued collection of used motor oil at the curb and at convenient drop-off locations, continued regular scheduled street sweepings, and continued general education and enforcement in the residential, commercial and industrial sectors regarding stormwater pollution prevention. The City shall continue public education programs on water quality issues, including Best Management Practices, for residents, businesses, contractors and City employees.

Action C-6.1.3 Wetlands Protection. The City shall increase awareness among residents of the delicate nature of the local wetlands and how individuals can protect them. The City shall continue and expand its education programs based at the Wetlands Nature Center, the Wetland Educational Resource Center located at Pajaro Valley High School, in the local schools, and in the community.

Additionally, the following specific mitigation measures are proposed to be added to the 2050 General Plan to further reduce impacts to federally protected wetlands:

Mitigation Measure BIO-20: Obtain Appropriate Permits and Compensate for Wetland Habitat Loss

During the project-specific CEQA process, the project applicant or applicable City departments shall conduct a wetland delineation per the USACE Wetland Delineation Manual (Environmental Laboratory 1987), and using the one-parameter approach in areas within the Coastal Zone, prior to construction. A delineation report should be prepared and submitted to the USACE and California Coastal Conservancy (CCC) for verification. Through this process, final calculations of wetland area present in the plan area will be obtained for project permitting. In addition, plans for proposed alteration to any watercourse should be submitted to CDFW for their review. These agencies' determinations, permits, and approved mitigation plans should be submitted as part of the final environmental package.

The wetland habitat that will be lost under any given project element would be functionally replaced as part of the Mitigation and Monitoring Plan required for permit issuance. In-kind and onsite replacement of lost wetland habitats must be done where possible. If multiple impacts to wetlands occur from the construction of facilities, larger wetland mitigation areas will be created that provide greater functions and values than numerous small mitigation sites. The determination of wetland impacts and the subsequent location and design of potential mitigation sites would be determined by qualified biologists in coordination with resource agency personnel.

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Minimum replacement ratios should be established as follows: 2:1 for wetlands (by restoration, enhancement, or creation) and 3:1 for riparian habitat and streams (by restoration or enhancement). These ratios ensure no net loss of habitat area or ecological function.

Mitigation and habitat restoration plans should provide the following:

- Replacement of lost acreage and functions of wetland habitat
- Location of restoration opportunities, complete with an analysis of the technical approach to create high quality wetlands.
- Prior to construction of any project element that may impact wetland habitats, the project proponent will apply for permits from the USACE and RWQCB. The project proponent will comply with the conditions of the permit.

Detailed plans will be prepared for wetland mitigation construction that include excavation elevations, location of hydrologic connections, planting plans and soil amendments, if necessary. Maintenance and monitoring plans are to be prepared in consultation with a qualified habitat restoration specialist. Any mitigation wetlands will be monitored for a period of 5 years, during which the site will achieve the performance criteria (as determined by a wetland delineation) by Year 5. Specific performance criteria will be the same as those outlined in **Mitigation Measure BIO-20** above. Monitoring reports will be provided annually to the appropriate resource agencies.

Significant impacts to aquatic and wetland habitats may include direct removal and filling, as well as creating hydrological interruption. In addition, while some wetland features may be artificial in origin, have ephemeral hydrology, and otherwise may be partially maintained, their loss may also constitute a significant impact. **General Plan Policy C-1.1** is expected to minimize direct impacts to wetland and aquatic habitat. **Policy C-3.1.1** requires all projects to reduce the use of impervious surfaces to the maximum extent possible; **Action C-3.1.1** requires stormwater runoff to be engineered to avoid impacts to water quality and requires the implementation of Water Quality BMPs and the establishment of a protective vegetative buffer during construction; and **Policy C-6.1** encourages protection of water quality through environmental education. These policies will minimize impacts to wetland and aquatic habitat. Additionally, the proposed **Mitigation Measure BIO-20** would require appropriate permitting and monitoring for federally-protected wetlands. With the implementation of these General Plan Policies and Actions, as well as the proposed Mitigation Measures, impacts to federally protected wetlands would be less than significant. (Less than Significant with Mitigation)

4.4.3.10 Impact Bio-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Less than significant)

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between these different habitats while also providing cover. On a broader level, corridors also function as avenues along which wide-ranging animals can travel, plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and threatened species can be replenished from other areas. The Pajaro River, Corralitos Creek, Salsipuedes

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Creek, Watsonville Wetland sloughs, and adjacent uplands within the plan area represent suitable movement pathways for many animal species, allowing animals to move within the landscape.

Activities that fragment natural habitats (i.e., break them into smaller, disjunct pieces) can have a twofold impact on wildlife: first, as habitat patches become smaller they are unable to support as many individuals (patch size); and second, the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity). However, the general plan would not be expected to alter these communities and corridors substantially due to the developed nature of the majority of the plan area, limited development that would occur near waterways and adjacent upland areas, and the remaining undeveloped land outside of the plan area that would continue to provide wildlife corridors. Thus, the general plan would not create barriers to wildlife movement.

Development that occurs under the general plan that results in disturbance due to construction activities and/or temporary habitat modifications can potentially disrupt wildlife movement in the plan area. For example, wildlife movement along Corralitos Creek, which provides a movement corridor for wildlife, could be temporarily disrupted while work is occurring along land to the south of the creek. However, the disruption associated with development of these lands is not expected to be so extensive or of such long duration as to result in long-term impacts or disruption of regional wildlife movement. Common wildlife species may also be somewhat acclimated to existing conditions due to agricultural activities and/or urban development. In addition, development under the general plan would not be so extensive as to create barriers to wildlife movement or remove large areas of habitat and result in a loss of connectivity. Thus, the general plan would not result in substantial impacts on movement of either common or special-status wildlife species and general plan impacts on wildlife movement would be less than significant.

Projects in the plan area would not cause substantial impacts to any important native wildlife nursery sites (i.e., an area where breeding is concentrated such as a heron rookery, pinniped pupping area, or seabird colony). Impacts on breeding animals, including breeding colonies of animals (e.g., bat maternity colonies and swallow colonies), may occur as described in Impacts BIO-1b, 1c, 1d, 1e, and 1f above, but no breeding areas for the species addressed in those impacts are so large or regionally important that they rise to the level of an “important native wildlife nursery site”. Furthermore, with implementation of the General Plan Policies and Actions, appropriate BMPs, and Mitigation Measures described in those impact sections, all impacts of development in the plan area on breeding animals would be **less than significant**.

4.4.3.11 Impact Bio-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than significant)

For the purpose of this assessment, ordinance trees are defined based on the applicable local ordinance. Often, ordinance trees must meet a minimum size requirement. However, some ordinances are not size-based but species based (e.g., all oaks) and, in some cases, no distinction is made between native and nonnative species. Ordinance-sized trees are common in the plan area. In addition to providing habitat functions and values for common and special-status wildlife species, larger trees are particularly valuable because they provide the highest-quality nesting sites for raptors, they may contain cavities that serve as roost sites for bats or nesting/denning sites for other animals, they provide large amounts of coarse woody debris to the stream ecosystem, and they promote high foliage height diversity, which in turn increases the local diversity of birds. They also provide

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important shading and aesthetic values. As a result of their high value, such trees are protected by local ordinances of Watsonville. Thus, these trees merit special consideration in assessing impacts of the general plan.

Trees in the plan area would be protected in accordance with the following Goals, Policies, and Actions in the 2050 General Plan.

General Plan 2050 Goals, Policies, and Actions that Mitigate Impacts:

Goal CM5 Trees. Encourage protection and planting of trees for aesthetic and environmental value.

Policy C-5.1 Tree Protection. The City shall protect certain trees from being removed since trees provide a variety of aesthetic and environmental values.

Action C-5.1.1 Tree Protection Ordinance. The City shall adopt a tree preservation ordinance and tree planting guidelines. The ordinance and guidelines shall set forth the types of trees to be protected and the conditions under which trees may be removed.

Action C-5.1.2 Tree Planting Guidelines. The City shall adopt street tree planting requirements and guidelines that identify a citywide tree planting program, including a list of appropriate street trees suitable for various areas of the community. New projects will be required to follow the established tree planting guidelines.

Action C-5.1.3 Preserve the Tree Canopy. Conduct necessary actions to preserve and expand the tree canopy. Carry out actions related to promoting tree planting and expanding the City's tree canopy, as noted in the Urban Greening Plan and Urban Forest Management Plan.

These trees merit special consideration in assessing impacts of the General Plan. However, the project is not expected to conflict with existing tree protection ordinances. With the implementation of these General Plan Goals, Policies, and Actions, impacts would be less than significant. (Less than Significant Impact).

4.4.3.12 Impact Bio-6: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (No impact)

No adopted HCPs, NCCPs, or any other approved local, regional, or state habitat conservation plans or natural community conservation plans, apply to the plan area. Therefore, there is no impact.

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4.4.5 Appendix A. Considered but Rejected Special-Status Plant Species

Common Name	Scientific Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from or Range Does Not Include
Anderson's manzanita	<i>Arctostaphylos andersonii</i>			x	
arcuate bushmallow	<i>Malacothamnus arcuatus</i> var. <i>arcuatus</i>				x
Ben Lomond buckwheat	<i>Eriogonum nudum</i> var. <i>decurrens</i>			x	
Ben Lomond spineflower	<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>			x	
bent-flowered fiddleneck	<i>Amsinckia lunaris</i>				x
big-scale balsamroot	<i>Balsamorhiza macrolepis</i>			x	
Bonny Doon manzanita	<i>Arctostaphylos silvicola</i>			x	
Brewer's calandrinia	<i>Calandrinia breweri</i>				x
Brewer's clarkia	<i>Clarkia breweri</i>			x	
bristly sedge	<i>Carex comosa</i>				x
California alkali grass	<i>Puccinellia simplex</i>	x			
California bottle-brush grass	<i>Elymus californicus</i>				x
Choris' popcornflower	<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>				x
clustered lady's-slipper	<i>Cypripedium fasciculatum</i>			x	
coast iris	<i>Iris longipetala</i>				x
Congdon's tarplant	<i>Centromadia parryi</i> ssp. <i>congdonii</i>				x
Coyote ceanothus	<i>Ceanothus ferrisiae</i>			x	
Dudley's lousewort	<i>Pedicularis dudleyi</i>			x	
Eastwood's goldenbush	<i>Ericameria fasciculata</i>				x
fragrant fritillary	<i>Fritillaria liliacea</i>		x		
Gairdner's yampah	<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>				
Hall's bushmallow	<i>Malacothamnus hallii</i>				x
harlequin lotus	<i>Hosackia gracilis</i>				
Hickman's popcornflower	<i>Plagiobothrys chorisianus</i> var. <i>hickmanii</i>				
Hooker's manzanita	<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>			x	
Hoover's button-celery	<i>Eryngium aristulatum</i> var. <i>hooveri</i>	x			

Common Name	Scientific Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from or Range Does Not Include
Kellogg's horkelia	<i>Horkelia cuneata</i> var. <i>sericea</i>				x
large-flowered leptosiphon	<i>Leptosiphon grandiflorus</i>				x
legenere	<i>Legenere limosa</i>	x			
Lewis' clarkia	<i>Clarkia lewisii</i>				x
Lobb's aquatic buttercup	<i>Ranunculus lobbii</i>	x			
Loma Prieta hoita	<i>Hoita strobilina</i>		x		
maple-leaved checkerbloom	<i>Sidalcea malachroides</i>				x
Michael's rein orchid	<i>Piperia michaelii</i>				x
minute pocket moss	<i>Fissidens pauperculus</i>	x			
Monterey ceanothus	<i>Ceanothus rigidus</i>	x			
Monterey Coast paintbrush	<i>Castilleja latifolia</i>				x
Monterey gilia	<i>Gilia tenuiflora</i> ssp. <i>arenaria</i>				x
Monterey spineflower	<i>Chorizanthe pungens</i> var. <i>pungens</i>	x			
most beautiful jewelflower	<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>			x	
mountain lady's-slipper	<i>Cypripedium montanum</i>			x	
Mt. Diablo cottonweed	<i>Micropus amphibolus</i>			x	
Mt. Hamilton thistle	<i>Cirsium fontinale</i> var. <i>campylon</i>			x	
northern curly-leaved monardella	<i>Monardella sinuata</i> ssp. <i>nigrescens</i>				x
Pacific Grove clover	<i>Trifolium polyodon</i>				x
Pajaro manzanita	<i>Arctostaphylos pajaroensis</i>	x			
Palomar monkeyflower	<i>Erythranthe diffusa</i>			x	
perennial goldfields	<i>Lasthenia californica</i> ssp. <i>macrantha</i>	x			
phlox-leaf serpentine bedstraw	<i>Galium andrewsii</i> ssp. <i>gatense</i>			x	
pine rose	<i>Rosa pinetorum</i>				x
pink creamsacs	<i>Castilleja rubicundula</i> var. <i>rubicundula</i>		x		
Pinnacles buckwheat	<i>Eriogonum nortonii</i>			x	
protruding buckwheat	<i>Eriogonum nudum</i> var. <i>indictum</i>			x	
red sand-verbena	<i>Abronia maritima</i>	x			

Common Name	Scientific Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from or Range Does Not Include
robust spineflower	<i>Chorizanthe robusta</i> var. <i>robusta</i>	x			
saline clover	<i>Trifolium hydrophilum</i>				
San Benito poppy	<i>Eschscholzia hypocoides</i>			x	
San Francisco popcornflower	<i>Plagiobothrys diffusus</i>			x	
sand-loving wallflower	<i>Erysimum ammodendrum</i>	x			
Santa Clara red ribbons	<i>Clarkia concinna</i> ssp. <i>automixxa</i>			x	
Santa Clara thorn-mint	<i>Acanthomintha lanceolata</i>			x	
Santa Clara Valley dudleya	<i>Dudleya abramsii</i> ssp. <i>setchellii</i>			x	
Santa Cruz clover	<i>Trifolium buckwestiorum</i>			x	
Santa Cruz Mountains beardtongue	<i>Penstemon rattanii</i> var. <i>kleei</i>			x	
Santa Cruz Mountains pussypaws	<i>Calyptridium parryi</i> var. <i>hesseae</i>			x	
Santa Cruz tarplant	<i>Holocarpha macradenia</i>				
Santa Cruz wallflower	<i>Erysimum teretifolium</i>			x	
Satan's goldenbush	<i>Isocoma menziesii</i> var. <i>diabolica</i>				x
Scotts Valley polygonum	<i>Polygonum hickmanii</i>			x	
Scotts Valley spineflower	<i>Chorizanthe robusta</i> var. <i>hartwegii</i>			x	
seaside bird's-beak	<i>Cordylanthus rigidus</i> ssp. <i>littoralis</i>				x
serpentine leptosiphon	<i>Leptosiphon ambiguus</i>			x	
slender silver moss	<i>Anomobryum julaceum</i>			x	
small-leaved lomatium	<i>Lomatium parvifolium</i>		x		
smooth lessingia	<i>Lessingia micradenia</i> var. <i>glabrata</i>			x	
stinkbells	<i>Fritillaria agrestis</i>		x		
virgate eriastrum	<i>Eriastrum virgatum</i>			x	
white-rayed pentachaeta	<i>Pentachaeta bellidiflora</i>			x	
woodland woollythreads	<i>Monolopia gracilens</i>			x	
woolly-headed lessingia	<i>Lessingia hololeuca</i>		x		
Yadon's rein orchid	<i>Piperia yadonii</i>	x			x