
Biological Resources Assessment Report

North River Apartments Project, Petaluma, CA

SONOMA COUNTY, CALIFORNIA

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LIST OF ACRONYMS

BRA	Biological Resources Assessment
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife (Formerly the California Department of Fish and Game)
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
ESA	Endangered Species Act
MBTA	Migratory Bird Treaty Act
NGVD	National Geodetic Vertical Datum
NWP	Nationwide Permit
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
WRA	WRA, Inc.

EXECUTIVE SUMMARY

This report provides an analysis of natural community and special-status species issues within the North River Apartments Project Area in Petaluma, Sonoma County, California. The North River Apartments Project is a mixed use development consisting of residential apartments, commercial/retail businesses, and associated infrastructure as an infill project in downtown Petaluma. Site visits were conducted on June 1, 2015 and October 6, 2015 by WRA biologists to observe and characterize biological communities which included non-native grassland/developed area, which is considered non-sensitive, and tidal brackish marsh wetland, tidal waters of the Petaluma River, and planted river bank riparian, whtop ofich are considered to be sensitive biological communities. No special-status plant or wildlife species were observed during the site visits.

Most of the Project Area (approximately 3.66 acres) is non-sensitive non-native plant habitat or existing buildings and the remaining area consists of 0.09 acre of tidal and brackish marsh habitat and 0.05 acre of stabilized and planted river bank riparian habitat. The tidal and brackish marsh and river bank are sensitive habitats regulated by various agencies, including the Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. Project work in sensitive habitat is limited to installation of a storm water outfall at the Petaluma River in the zone below the top of bank but above the high tide line (HTL). A stormwater outfall installation will require a Streambed Alteration Agreement from the Department of Fish and Wildlife; however, the work is above the HTL and therefore not subject to Section 404 permitting as administered by the Corps of Engineers.

Special-status plant species are unlikely or have no potential to occur within the Project Area; therefore, the project will not adversely impact special-status plant species. Two special-status bird species, two special-status bat species, and four special-status fish species have a moderate or high potential to be present within the Project Area, in addition to common bird species protected by the Migratory Bird Treaty Act (MBTA). Pre-construction surveys are recommended for migratory and special-status birds potentially nesting on the ground or in trees on or adjacent to the Project Area and bats in existing buildings. Should pre-construction surveys result in positive findings for migratory birds or special-status bird or bat species, appropriate mitigation measures to reduce potential impacts, if needed, may include providing protective buffer zones, exclusion measures, and/or working outside of the breeding/roosting seasons. Because no work is planned directly in the Petaluma River (a storm water outfall will be installed above the high tide line) and because Petaluma River water quality will be protected by stormwater treatment mitigation measures during and after construction, common and special-status fish species are not expected to be adversely impacted by the Project.

1.0 INTRODUCTION

WRA, Inc. (WRA) prepared this biological resources assessment (BRA) report for the proposed North River Apartments development (Project) on an approximately 3.8-acre parcel of land (Project Area) located near downtown Petaluma, north of East Washington Street and between Petaluma Boulevard and the Petaluma River (Figure 1).

The purpose of this assessment was to gather information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA). This report describes the results of the site visit, which assessed the Project Area including immediately adjacent areas for: (1) the potential to support special-status plant and wildlife species; (2) the presence of special-status plant species; and (3) the presence of other sensitive biological resources protected by local, state, and federal laws and regulations.

Specific findings on the habitat suitability or presence of special-status species or sensitive habitats and their implications are discussed in detail within this report. This report also contains an evaluation of potential impacts to special-status species and sensitive biological resources that may occur as a result of the proposed project and recommends mitigation measures to compensate for any significant impacts associated with the proposed project. This biological assessment does not constitute protocol-level wildlife surveys for listed species that may be required for project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on site conditions that were observed during site visits on June 1 and October 6, 2015.

1.1 Project Area Boundaries and Location

The Project Area is in the 300 and 400 blocks of Petaluma Blvd. North, north of East Washington Street in downtown Petaluma, CA. It is comprised of previously developed areas that are now vacant lands and several old structures that still stand near Petaluma Blvd. Existing development surrounding the Project Area includes residential homes and commercial retail enterprises, light industry including grain/livestock feed facilities, streets, and other related urban infrastructure. The Petaluma River flows along the eastern portion of the Project Area.

1.2 History and Setting

The downtown area of Petaluma has been developed since the latter half of the 1800s, especially areas adjacent to the Petaluma River because of access to shipping. Studies show that the Project Area has been developed since 1885 with structures constructed and replaced many times over the years (Wallace & Kuhl 2015). Topography of the area generally slopes toward the Petaluma River, and elevations of the Project Area range from 25 feet above sea level on the west side to 10 feet above sea level as the land levels closer to the river. The Petaluma River is tidal at this reach of the river and, therefore, is at sea level. Most of the Project Area is now vacant land, however a few structures and other evidence of development, such as concrete pads, are present. Demolition of some structures has been recent, the latest removed as of 2012. The general area north of East Washington is gradually being improved as revitalization of the business district south of East Washington Street moves northward.

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are regulated under federal and state regulations and laws such as the Clean Water Act (CWA), Porter-Cologne Act, California Department of Fish and Wildlife (CDFW) Streambed Alteration Program, and California Environmental Quality Act (CEQA).

2.1.1 *Waters of the United States*

The United States Army Corps of Engineers (Corps) regulates “Waters of the United States” under Section 404 of the CWA. Waters of the United States are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the 2008 Arid West Supplement, are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as “other waters” and are often characterized by an ordinary high water mark (OHWM). In tidal waters, such as the lower Petaluma River, the extent of Section 404 jurisdiction is to the high tide line (HTL). The placement of fill material into Waters of the U.S. generally requires an individual or nationwide permit (NWP) from the Corps under Section 404 of the CWA.

2.1.2 *Waters of the State*

The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes “isolated” wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

2.1.3 *Streams, Lakes, and Riparian Habitat*

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term “stream”, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term “stream” can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFW 1994). “Riparian” is defined as “on, or pertaining to, the banks of a stream.” Riparian vegetation is defined as “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFW 1994). Removal of riparian vegetation may also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

2.1.4 *Other Sensitive Biological Communities*

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as “threatened” or “very threatened” and keeps records of their occurrences in its California Natural Diversity Database (CNDDDB; CDFW 2015). Sensitive plant communities are also identified by CDFW (2003, 2007, 2009). CNDDDB vegetation alliances are ranked 1 through 5 based on NatureServe’s (2015) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or the United States Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3). Specific habitats may also be identified as sensitive in city or county general plans or ordinances.

2.2 Special-status Species

Plant and Wildlife Species

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and species proposed for listing. In addition, CDFW Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, USFWS Birds of Conservation Concern, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the CEQA. In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under this legislation, destroying active nests, eggs, and young is illegal.

Plant species included within the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory, CNPS 2015) with California Rare Plant Rank (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Very few Rank 3 or Rank 4 plants meet the definitions of Section 1901 Chapter 10 of the Native Plant Protection Act or Sections 2062 and 2067 of the CDFW Code that outlines the CESA. However, CNPS and CDFW strongly recommend that these species be fully considered during the preparation of environmental documentation relating to CEQA. This may be particularly appropriate for the type locality of a Rank 4 plant, for populations at the periphery of a species range or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology or occurring on unusual substrates.

Critical Habitat

Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

3.0 METHODS

The Project Area is located in downtown Petaluma, Sonoma County, California. The property is private, and access is by permission only. On June 1 and October 6, 2015 site visits were made to the Project Area to determine: (1) plant communities present within the Project Area, (2) if existing conditions provided suitable habitat for any special-status plant or wildlife species, (3) if sensitive habitats are present, and (4) if special-status plant species are present. All plant and wildlife species encountered were recorded and are summarized in Appendix A. Plants were identified to the taxonomic level necessary to determine rarity using *The Jepson Manual: Vascular Plants of California 2nd Edition* (Baldwin et al. 2012). Some plants were cross referenced and identified using *The Jepson Manual* (Hickman 1993) as some agencies and jurisdictions may base rarity on older names. Names given follow *The Jepson Manual: Vascular Plants of California 2nd Edition* (Baldwin et al. 2012).

3.1 Biological Communities

Prior to the site visit, the Soil Survey of Sonoma County, California [United States Department of Agriculture (USDA) Web Soil Survey], United States Geologic Survey (USGS) topographic maps, USFWS National Wetlands Inventory maps, and recent and historic aerials photographs (Google Earth) were examined to determine possible habitat types or other Project Area qualities, such as unique soil types that could support sensitive plant communities, aquatic features, or developed/disturbed areas in the Project Area. Biological communities that were observed in the Project Area were classified based on existing plant community descriptions described by Sawyer et al. (2009). However, in some cases it was necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

3.1.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not given special protection state, federal, and local laws, regulations, and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species and are identified or described in Section 4.3.1 below.

3.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are to be given consideration during the CEQA process and other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.

Wetlands and Waters

The Project Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFW were present. The assessment was based primarily on the presence of wetland plant indicators, but also included observed indicators of wetland hydrology or wetland soils. In addition, the location of the top of bank and the high tide line was determined for the Petaluma River within the Project Area.

Other Sensitive Biological Communities

The Project Area was evaluated for the presence of other sensitive biological communities, including riparian areas, sensitive plant communities recognized by CDFW. Prior to the site visit, aerial photographs, local soil maps, the *List of Vegetation Alliances* (CDFW 2009), and *A Manual of California Vegetation* (Sawyer et al. 2009) were reviewed to assess the potential for sensitive biological communities to occur in the Project Area. There were no alliances within the Project Area with a ranking of 1 through 3 (none were ranked state or globally critically imperiled (S1/G1), imperiled (S2/G2), or vulnerable (S3/G3)). These communities are described in Section 4.1.2 below.

3.2 Special-status Species

3.2.1 Literature Review

Potential occurrence of special-status species in the Project Area was evaluated by first determining which special-status species occur in the vicinity of the Project Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Cotati, Petaluma, Petaluma River, and Glen Ellen USGS 7.5-minute quadrangles. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Project Area:

- CNDDDB records (CDFW 2015)
- USFWS species lists (USFWS 2015)
- CNPS Inventory records (CNPS 2015)
- CDFW publication “California’s Wildlife, Volumes I-III” (Zeiner et al. 1990)
- CDFW publication “Amphibians and Reptile Species of Special Concern in California” (Jennings 1994)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)

3.2.2 Site Assessment

Habitat conditions were assessed used to evaluate the potential for presence of special-status species. The potential for each special-status species to occur in the Project Area was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recorded (i.e. CNDDDB, other reports) on the site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity in order to determine its potential to occur in the Project Area. The site visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species. All species observed were recorded (Appendix A).

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of WRA biologists with experience working with the species and habitats. If necessary, recognized experts in individual

species biology were contacted to obtain the most up-to-date information regarding species biology and ecology.

If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 4.4 and Appendix B. For some species, a site assessment visit at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies.

4.0 SITE DESCRIPTION AND RESULTS

The Project Area covers approximately 3.8 acres and is located in the 300 and 400 blocks of Petaluma Blvd. North in Petaluma, Sonoma County California (Figure 2). The Project Area is bounded by Petaluma Blvd. North to the west and commercial retail, residential development, and light industry on the south, north, east (across the Petaluma River). A railroad spur runs through the center of the proposed project. The Project Area contains vacant lands comprised of mostly non-native grasses and forbs. The Project Area also contains a few structures including buildings, sheds, fences, and access roads. Representative photographs of the Project Area can be seen in Appendix C.

4.1 Topography and Soils

The topography of the Project Area is relatively flat, except where a railroad spur is present where the railroad bed is a few feet lower than the adjacent land. The general slope is from west to east, from Petaluma Blvd. North toward the Petaluma River, and elevations range from 10 to 25 feet above sea level in the proposed project area down to sea level at the Petaluma River.

The *Soils Survey of Sonoma County, California* (USDA 1977) indicates that the Project Area is composed of one native soil type, Clear Lake clay, which is described as follows:

Clear Lake clay, 0 to 2 percent slopes: The Clear Lake series consists of very deep clay soils formed in alluvium derived from sedimentary rock, and are located on basin floors of river valleys at elevations ranging from 25 to 2,000 feet. These soils are considered hydric, and are poorly drained, with negligible to high runoff, and slow to very slow permeability. Native and naturalized vegetation is composed of grasses and forbs, and land uses include row cropping, dry farming, irrigated pasture, and dry pasture (USDA 1977).

Under existing conditions, the native soil type has been disturbed in the Project Area by past development and construction activities, and also has had fill placed on top as evidenced by observation of different soil materials, clumps of asphalt, chunks of concrete, etc.

4.2 Climate and Hydrology

The average annual maximum temperature of Petaluma (#046826) is 70.4 degrees Fahrenheit, while the average annual minimum temperature is 44.9 degrees Fahrenheit (WRCC 2013). Predominantly, precipitation falls as rain with an annual average of 24.93 inches (WRCC 2013). Precipitation bearing weather systems are predominantly from the west and south with the majority of rain falls between November and March, with a combined average of 20.94 inches

(WRCC 2013). Fog is common in the Project Area, with late spring and summer westerly advection fog arising from the Pacific Ocean flowing over the Marin Hills and Petaluma Gap, as well as up the Petaluma Marsh plain from San Pablo Bay in early evening and typically receding by midday. Low-lying fall and winter convection fog is common and typically follows precipitation events. The primary hydrologic sources for the Project Area are direct precipitation and localized surface runoff from immediately adjacent lands received during substantial winter/spring rainfall events.

4.3 Biological Communities

There are biological communities in the Project Area that are considered both non-sensitive and sensitive. They are shown in Figure 2 and are described in the following sections.

4.3.1 Non-sensitive Biological Communities

Developed/Non-native Grassland

Developed/non-native grassland is a non-sensitive biological community that occupies previously developed/disturbed areas (3.66 acres) and has non-native annual grasses and forbs as dominant vegetation with only a few native plant species present. Wild oat (*Avena barbata*), wild radish (*Raphanus sativa*), pepperweed (*Lepidium latifolium*), and wild lettuce (*Lactuca seriola*), all non-natives were commonly observed in areas throughout the Project Area during the site visits. There is one area that likely was once developed that has been over-grown by a nearly homogeneous stand of non-native Himalayan blackberry (*Rubus armeniacus*). California native plants observed in a few locations included common tarweed (*Centromadia pungens*) and creeping wildrye (*Leymus triticoides*).

There is approximately 0.14 acre of developed area occupied by buildings near Petaluma Blvd. North.

4.3.2 Sensitive Biological Communities

Coastal Brackish Tidal Marsh and Waters

The Petaluma River is tidally influenced at the location of the Project and coastal brackish marsh (0.09 acre) is supported on the banks of the Petaluma River. Coast brackish is found at the interior edges of coastal bays and estuaries and is often adjacent to salt marsh, another sensitive habitat type, where broader areas at appropriate tidal elevations are present. Coastal brackish marsh has some plants in common with salt marsh, but soil and water in this habitat generally has lower salt concentration than salt marsh because of freshwater influence, although salinity will typically vary considerably with tide or season. Plants in the coastal brackish marsh intertidal zone at the location of the Project include California rush (*Schoenoplectus acutus* var. *occidentalis*) and marsh gumplant (*Grindelia stricta* var. *angustifolia*).

Jurisdiction of regulatory agencies varies in tidally influenced areas. Corps Section 404 Clean Water Act jurisdiction extends up to the high tide level (HTL) which is reached during highest tides and Corps jurisdiction under Section 10 Rivers and Harbors Act extends up to the level of

mean high water (MHW)¹. RWQCB and CDFW jurisdiction extends to top of bank. The approximate limits of these various areas of jurisdiction are shown in Figure 2 and are based on ecological observations made during site visits and comparison to project topographic maps.

Intertidal zones in deeper areas of the river are inundated with duration and frequency that precludes establishment and growth of vascular plants. These are areas of open water within the river and are also regulated under federal and state regulations and laws by the Corps, RWQCB, and CDFW. The Petaluma River has been documented to support special-status wildlife species (CDFG 2015). It is considered Critical Habitat for Steelhead - Central California Coast ESU (*Oncorhynchus mykiss irideus*), a federal threatened species. The Petaluma River also has the potential to support Chinook salmon (*Oncorhynchus tshawytscha*), Sacramento splittail (*Pogonichthys macrolepidotus*), and longfin smelt (*Spirinchus thaleichthys*) in the Project Area. These wildlife species and others are discussed in more detail in Section 4.4.2.

Stabilized River Bank

A portion of the Petaluma River bank, covering approximately 0.05 acre, has been stabilized using large boulder rip rap and trees/shrubs, including willows (*Salix* sp.), have been installed in amongst the boulders. This developing habitat has sparse cover and does not provide the wildlife habitat and other values typically associated with fully developed riparian habitat.

4.4 Special-status Species

4.4.1 Special-status Plant Species

Based on the review of the resources databases listed in Section 3.2.1, 28 special-status plant species have been documented in the vicinity of the Project Area (Appendix B and Figure 3). It was determined through professional evaluation of habitat qualities of the site and the specific requirements of the species evaluated that all of these species had a low or unlikely potential to occur in the Project Area. None of the special-status plant species had a high or moderate potential to occur in the Project Area. In addition to lacking native vegetation communities and substantial, repeated site alterations and disturbances, each of the 28 special-status plant species documented in the greater vicinity were determined not have the potential to occur within the Project Area due to one or more of the following reasons:

¹ Tidal elevations given for Upper Drawbridge (of the Petaluma River) station closest to the Project Area are: High Tide Level +8.03 feet (NAD 88) and Mean High Water +5.99 feet (NAD88).

- Hydrologic conditions (e.g., marsh habitat, perennial streams) necessary to support the special-status plant(s) are not present in the Project Area;
- Edaphic (soil) conditions (e.g., serpentine, volcanics, sands) necessary to support the special-status plant(s) are not present in the Project Area;
- Topographic positions (e.g., north-facing slopes) necessary to support the special-status plant(s) are not present in the Project Area;
- Associated vegetation communities (e.g., chaparral, closed-cone coniferous forest) necessary to support the special-status plant(s) are not present in the Project Area;
- The Project Area is outside of the localized distribution of the special-status plant(s) (e.g., distances to known occurrences).

The site assessment was conducted during a period that was outside of the blooming period for most plants. The site visit did occur during the blooming period of one special-status plant, congested headed hayfield tar plant (*Hemizonia congesta* ssp. *congesta*), sufficient to accurately identify this special-status plant species, and it was not present in the Project Area. No other special-status plant species potentially present were observed within and immediately adjacent to the Project Area and none are considered to be present.

4.4.2 Special-status Wildlife Species

Based on the review of the resources databases listed in Section 3.2.1, 47 special-status wildlife species have been documented in the vicinity of the Project Area (Appendix B and Figure 4). Of these special-status wildlife species known to occur in the vicinity of the Project Area, four terrestrial species have a moderate potential to occur within the Project Area. San Pablo song sparrow (*Melospiza melodia samuelis*) and Allen's hummingbird (*Selasphorus sasin*) have potential to nest and/or forage in the vegetation of the Project Area. Pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*) have a moderate potential to roost within the buildings or sheds within the Project Area, and/or forage over the site in the evenings. In addition, four fish species, Sacramento Splittail (*Pogonichthys macrolepidotus*), Longfin Smelt (*Spirinchus thaleichthys*), Steelhead - central CA coast ESU (*Oncorhynchus mykiss*), and Chinook salmon - Central Valley spring-run ESU (*Oncorhynchus tshawytscha*) have potential to be present at various times in the Petaluma River at the Project location.

Samuels song sparrow (*Melospiza melodia samuelis*). CDFW Species of Special Concern, USFWS Bird of Conservation Concern. Formerly known as the San Pablo song sparrow, this subspecies of the common and widespread song sparrow is endemic to tidal and semi-tidal marshes of San Pablo Bay and northern San Francisco Bay. The essential habitat requirement is dense, taller emergent and herbaceous vegetation, particularly in the upper marsh plain; high-quality habitat tends to include woody shrubs in the upper marsh and adjacent transitional areas. Nests are placed in dense vegetative cover, and invertebrates compose most of the diet. This species may occasionally forage on the property and may nest in vegetation adjacent to the site. A single occurrence has been documented downstream of the Project Area.

Allen's hummingbird (*Selasphorus sasin*). Birds of Conservation Concern. Summer resident, breeding along much of California's coastal slope. Occurs in woodlands, parks, and gardens. It has a potential to be present in the Project Area during the summer. These birds

would easily be observed during a breeding bird survey, and if they were present they would be protected by mitigation measures recommended to protect breeding birds and nesting activity.

Pallid bat (*Antrozous pallidus*), CDFW Species of Special Concern, WBWG High Priority. Pallid bats are distributed from southern British Columbia and Montana to central Mexico, and east to Texas, Oklahoma, and Kansas. This species occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. They are most abundant in the arid Sonoran life zones below 6,000 feet, but have been found up to 10,000 feet in the Sierra Nevada. Pallid bats often roost in colonies of between 20 and several hundred individuals. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented in large conifer snags (e.g., ponderosa pine), inside basal hollows of redwoods and giant sequoias, and within hole cavities in oak trees. They have also been reported roosting in stacks of burlap sacks and stone piles. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight. Abandoned buildings that are on the property provide suitable roost habitat for this species.

Townsend's western big-eared bat, (*Corynorhinus townsendii townsendii*), State Candidate, CDFW Species of Special Concern, WBWG High Priority. This species ranges throughout western North America from British Columbia to central Mexico. Its local distribution is strongly associated with the presence of caves, but roosting also occurs within man-made structures including mines and buildings. While many bats species wedge themselves into tight cracks and crevices, big-eared bats hang from walls and ceilings in the open. Males roost singly during the spring and summer months while females aggregate in the spring at maternity roosts to give birth. Females roost with their young until late summer or early fall, until the young become independent, flying and foraging on their own. In central and southern California, hibernation roosts tend to be made up of small aggregations of individuals (Pierson and Rainey 1998). Foraging typically occurs along edge habitats near streams and wooded areas, where moths are the primary prey (WBWG 2015). Abandoned buildings on and immediately adjacent to the property provide suitable roost habitat for this species. Townsend's bat has been documented in the immediate vicinity of the site.

Steelhead - Central California Coast ESU (*Oncorhynchus mykiss irideus*), Federal Threatened Species. The Central California Coast ESU includes all naturally spawned populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River (inclusive), excluding the Sacramento-San Joaquin River Basin. Steelhead typically migrate to marine waters after spending two years in freshwater, though they may stay up to seven years. They then reside in marine waters for 2 or 3 years prior to returning to their natal stream to spawn as 4-or 5-year-olds. Steelhead adults spawn between December and June. In California, females typically spawn twice before they die. Preferred spawning habitat for steelhead is in perennial streams with cool to cold water temperatures, high dissolved oxygen levels, and fast-flowing water. Abundant riffle areas (shallow areas with gravel or cobble substrate) for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding.

Central California Coast Steelhead migrate up the Petaluma River in the fall and winter to spawn in the winter and spring. The river habitat though the Project Area does not provide

suitable gravel substrate for spawning and adults of this ESU likely migrate through in search of spawning habitat upstream while juveniles may find suitable protective cover and foraging habitat in the Project Area. The Petaluma River is considered Critical Habitat for this ESU by NMFS (2007), and CNDDB records indicate that this ESU has been observed in the Petaluma River system within five miles of the Project Area (CDFW 2015). Therefore, the Project Area represents migration and potentially rearing habitat for this species.

Chinook Salmon - Central Valley Fall/late fall-run ESU (*Oncorhynchus tshawytscha*), NMFS Species of Concern, CDFG Species of Special Concern. The Central Valley Fall/late fall-run Evolutionarily Significant Unit (ESU) includes all naturally spawned fall-run populations from the Sacramento - San Joaquin River mainstem and its tributaries. Late-fall run chinook salmon are morphologically similar to spring-run chinook. They are large salmonids, reaching 75-100 cm SL and weighing up to 9-10 kg or more. The great majority of late-fall chinook salmon appear to spawn in the mainstem of the Sacramento River, which they enter from October through February. Spawning occurs in January, February and March, although it may extend into April in some years. Fry have emerged by early June, and the juveniles hold in the river for nearly a year before moving out to sea the following December through March. Chinook salmon have been reported in the Petaluma River (Morrison et. al. 2014), especially tidal areas of the mainstem of the river.

The specific habitat requirements of late-fall chinook have not been determined, but they are presumably similar to other chinook salmon runs and fall within the range of physical and chemical characteristics of the Sacramento River above Red Bluff. Following winter rains, this species may migrate through the Project Area in search of appropriate spawning habitat. In the Project Area, no gravelly substrate characteristic of Chinook spawning habitat is available; however, the aquatic habitat onsite may provide suitable rearing and foraging habitat for juveniles.

Longfin Smelt (*Spirinchus thaleichthys*), Federal Bay-Delta DPS Candidate, State Threatened. U.S. Fish and Wildlife Service has listed the Bay-Delta distinct population segment of longfin smelt as a candidate endangered or threatened species (other longfin smelt populations have not been listed) in a 12-month finding announced in March 2012, and no final decision for listing has been made to date. Longfin smelt are considered pelagic and anadromous, spawning in freshwater and moving into estuarine and ocean waters as they mature with salinity ranging between 14 to 28 parts per thousand (ppt). They do not tolerate water temperatures higher than 22 degrees Celsius and typically move seaward to San Francisco Bay and cooler water during the summer. Spawning typically occurs between January and April, but may begin as early as November and last as late as June, and occurs over sandy substrate.

This fish is documented to occur throughout San Francisco Bay and the delta region. Recent surveys cited by CDFW (CDFG 2012) indicate occurrence in the Petaluma River. While longfin smelt may be in the Petaluma River and within the Project Area during portions of the year, it is unlikely they are in the upper Petaluma River and the Project Area during the summer when water temperatures reach intolerable levels. Water temperatures at the Project Area (Petaluma River Turning Basin) were measured to already be 22.9 degrees Celsius (73.2 degrees F) in late May of 2004 (Cohen et. al. 2005). CDFW has determined an acceptable work window for work in the Project Area to be between July 1 and September 30. No work is expected to occur directly in the river by this Project; a stormwater outfall will be installed above high tide level.

Sacramento Splittail (*Pogonichthys macrolepidotus*), California Species of Special Concern. Endemic to the lakes and rivers of the Central Valley, including the Sacramento Delta, Suisun Bay and associated marshes. It can be present in slow-moving river sections and dead end sloughs, and requires flooded vegetation for spawning and foraging for young. Splittail are primarily freshwater fish, but are tolerant of moderate salinity and can live in water where salinity levels reach 10-18 parts per thousand.

This fish is documented in the reach of the Petaluma River upstream of the Project Area. However, because no work will be conducted directly in the river (a stormwater outfall will be installed above high tide level), no impacts to this species will result from the Project.

Most bird species, even common ones, are protected by the Migratory Bird Treaty Act, especially when breeding and/or nesting. Birds may nest in trees or other above ground vegetation, on the ground, or in and around structures or other man-made features. Various species will breed and nest at different times of the year, however the breeding bird season for all birds is commonly considered to begin February 1 and end on August 31 of any year. It is during this period that care should be taken to protect birds, especially stationary nests that are active (i.e., contain eggs or young). Removal of vegetation where nesting could occur should be removed during the non-breeding season (September through January), and no surveys would be required for during this period. If vegetation removal and/or construction cannot be avoided during the breeding season (February through August), pre-construction surveys shall be conducted within 14 days prior to start of work to identify active nests. Active nests must be protected by establishing exclusion buffer zones around them until the young have fledged. Work can continue in areas outside of the buffer zones and can resume within the buffer zone once the young have left the nest or the nest is determined to no longer be active.

5.0 POTENTIAL IMPACTS AND MITIGATION

The proposed project involves the construction of a mixed use development (Figure 5) consisting of residential apartments and commercial/retail development with attendant infrastructure improvements (i.e., roads, sidewalks, municipal water supply, etc.). Three building area footprints will be separated by new streets for access that are extensions of undeveloped city streets. Parking will be provided under the buildings and bicycle racks will be installed at various locations around the Project, including a promenade and viewing area along the Petaluma River. Pedestrian walkways will connect to an existing city trail system with access to the east side of the Petaluma River across a footbridge. While the existing condition of the Project Area is disturbed and vacant land with little habitat value, potential impacts to biological resources that may be caused by the Project, and recommended mitigation measures to reduce potential impacts, are presented in the following sections.

5.1 Potential Impacts to Petaluma River Water Quality

Potential Significant Impact 1

Sediment runoff during grading and construction activities could flow into the Petaluma River and adversely affect water quality. Post-construction runoff from the development containing pollutants of concern could flow into the Petaluma River and adversely affect water quality.

Mitigation Measures

Preparation of a standard storm water pollution prevention plan (SWPPP) should be developed and approved prior to start of construction and be implemented during construction. A post-construction storm water management plan should be prepared that will include features to adequately treat runoff from the development designed to current City of Petaluma standards (see BASMAA Post-construction Manual, BASMAA 2014) before it is discharged to the Petaluma River.

If implemented, these mitigation measures would reduce potential impacts to a less than significant level.

5.2 Potential Impacts to Special-status Plant Species

Potential Significant Impact 2

Construction could remove special-status plants if they were present. However, special-status plant species are unlikely or have no potential to occur within the Project Area. Therefore, no impacts are anticipated to occur to special-status plant species.

Mitigation Measures

No special-status plant species are present based on site inspection and literature review and analysis. Mitigation is not necessary.

5.3 Potential Impacts to Special-status Wildlife Species

Potential Significant Impact 3

Runoff from the Project Area during construction and post-construction could contain sediment and pollutants that would adversely affect water quality and aquatic organisms, including listed endangered and threatened species of fish, in the Petaluma River.

Mitigation Measures

Mitigation measures described in Potential Significant Impact 1, should be implemented in order to protect water quality in the Petaluma River. In addition, prior to start of construction, a qualified biologist should give an educational training session to construction contractor and workers about the importance of following mitigation measures to protect water quality and aquatic organisms. The biologist shall make periodic inspections during construction work to monitor construction and make recommendations to contractor that will protect water quality and aquatic organisms.

If implemented, these measures would reduce this potential impact to a less than significant level.

Potential Significant Impact 4

Demolition of buildings could disrupt roosting or nesting of bats. Direct impacts to roosting special-status bat species could occur due to the removal or modification of buildings. The destruction or injury of special-status bats would constitute a potentially significant impact.

Additionally, loss of a maternity roost would be considered a regionally significant impact. Abandonment of an active special-status bat species roost would also constitute a potentially significant impact.

Mitigation Measures

To avoid potentially significant impacts to special-status bat species, the following mitigation measures are recommended:

Bat Species:

- Maternity Roosting Season (April 1 to August 31): Within 30 days of building demolition, pre-construction surveys should be performed by a qualified biologist to assess the suitability of all impacted substrates and the immediate areas as bat roosts. If suitable bat roost sites are identified, these potential roost sites should be surveyed by way of evening emergence surveys and/or internal inspections to determine presence/absence of bat maternity roosts. All active roosts identified during surveys should be protected until bats leave the building. Survey results are valid for 30 days from the survey date. Surveys should be repeated if commencement of structure demolition begins after 30 days or more from the survey date.
- Buildings may be demolished outside of the maternity roosting. However, internal entrance surveys should be performed by a qualified bat biologist no sooner than 14 days prior to demolition to determine if buildings currently or previously support roosting bats. If bats are determined to be present, appropriate methods should be used to exclude bats from the building. Such methods may include installation of one way “valves” to allow bats to exit, but not allow them to reenter the building, or play-back of ultrasonic noise and/or predator calls to deter bats from returning to buildings. Species and roost appropriate mitigation measures should be developed based on the results of the survey in consultation with CDFW.

If implemented, these mitigation measures would reduce potential impacts to a less than significant level.

Potential Impact 5

Construction activities could disrupt breeding or active nests of migratory and special-status species of birds. Direct impacts to nesting migratory and special-status bird species could occur due to the removal or modification of vegetation and/or buildings. The destruction or injury of migratory and special-status bird adults, young, and/or eggs would constitute a potentially significant impact. Indirect impacts to nesting migratory and special-status bird species may include nest abandonment due to noise, increased nighttime lighting and/or other human disturbances during construction. Abandonment of an active migratory or special-status species nest (i.e., one containing eggs and/or young) would constitute a potentially significant impact.

Mitigation Measures

To avoid potentially significant impacts to migratory and special-status bird species, the following mitigation measures are recommended:

Bird Species:

- Conduct vegetation removal within areas to be developed through cutting and/or grubbing between September 1 and January 30, which is outside of the general breeding bird season. If this is completed during the non-breeding season and work does not lapse for more than 15 days during the breeding season, no additional mitigation is necessary and there will be no impacts to birds.
- If vegetation removal or construction begins between February 1 and August 31, pre-construction surveys should be conducted within 14 days prior to such activities to determine absence or the presence and location of nesting bird species. If active nests are present, establishment of temporary protective breeding season buffers will avoid direct or indirect mortality or disruption of these birds, nests or young. The appropriate buffer distance is dependent on the species, surrounding vegetation and topography and will be determined by a qualified biologist to prevent nest abandonment and direct mortality during construction. Buffers may be larger for special-status species. Work may proceed if no active nests are found during surveys or when the young have fledged a nest or the nest is determined to be no longer active.

If implemented, these mitigation measures would reduce potential impacts to a less than significant level.

5.4 Potential Impacts to Sensitive Biological Communities

Potential Impact 6

Installation of a storm water outfall between the top of bank and the high tide line at the Petaluma River could adversely impact the recently rip rap bank stabilization and new riparian tree/shrub plantings.

Mitigation Measures

Prior to installation of the storm water outfall below the top of bank, a Streambed Alteration Agreement application should be obtained from the California Department of Fish and Wildlife. Because the outfall will not require fill placement below the HTL, no permit will be required from the Corps of Engineers.

The application to the Department should specify the type, size, and method of installation of the outfall that will avoid and/or minimize impacts to the rip rap and tree/shrub plantings as much as practicable. If disturbance or removal of rip rap is required, it shall be replaced in a manner that will restore the integrity of the stabilized river bank. If newly planted trees/shrubs are required to be removed, the same number removed shall be replaced after completion of the outfall installation and maintained until they become established.

If these measures are implemented, potential significant impacts will be reduced to a less than significant level.

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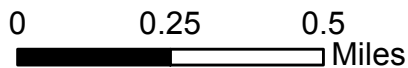


Figure 1. Study Area Location Map

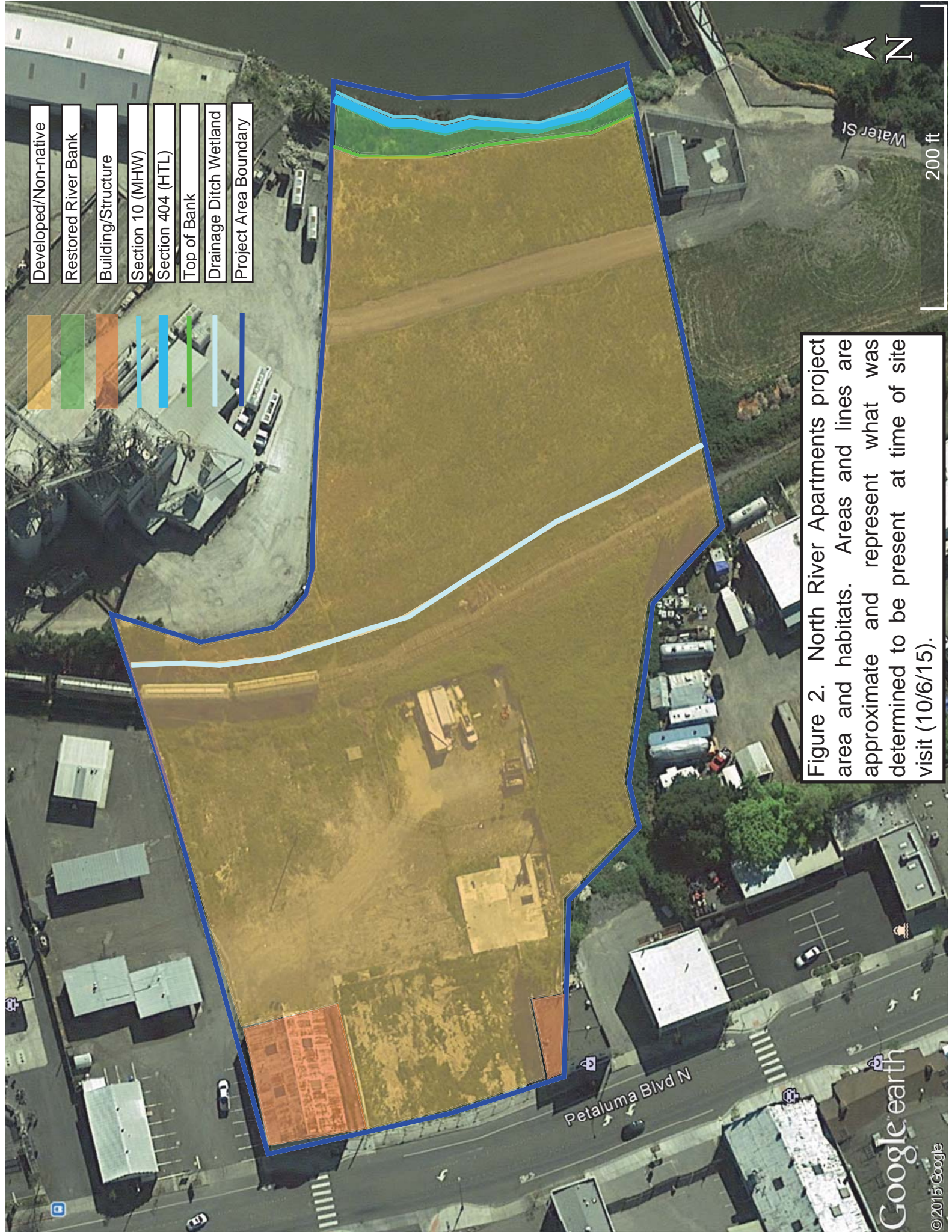


ENVIRONMENTAL CONSULTANTS

Spanos Petaluma
Sonoma County, California



Map Prepared Date: 10/9/2015
Map Prepared By: fhourigan
Base Source: Esri, National Geographic
Data Source(s): WRA



- Developed/Non-native
- Restored River Bank
- Building/Structure
- Section 10 (MHW)
- Section 404 (HTL)
- Top of Bank
- Drainage Ditch Wetland
- Project Area Boundary



Figure 2. North River Apartments project area and habitats. Areas and lines are approximate and represent what was determined to be present at time of site visit (10/6/15).

200 ft



Water St

Petaluma Blvd N

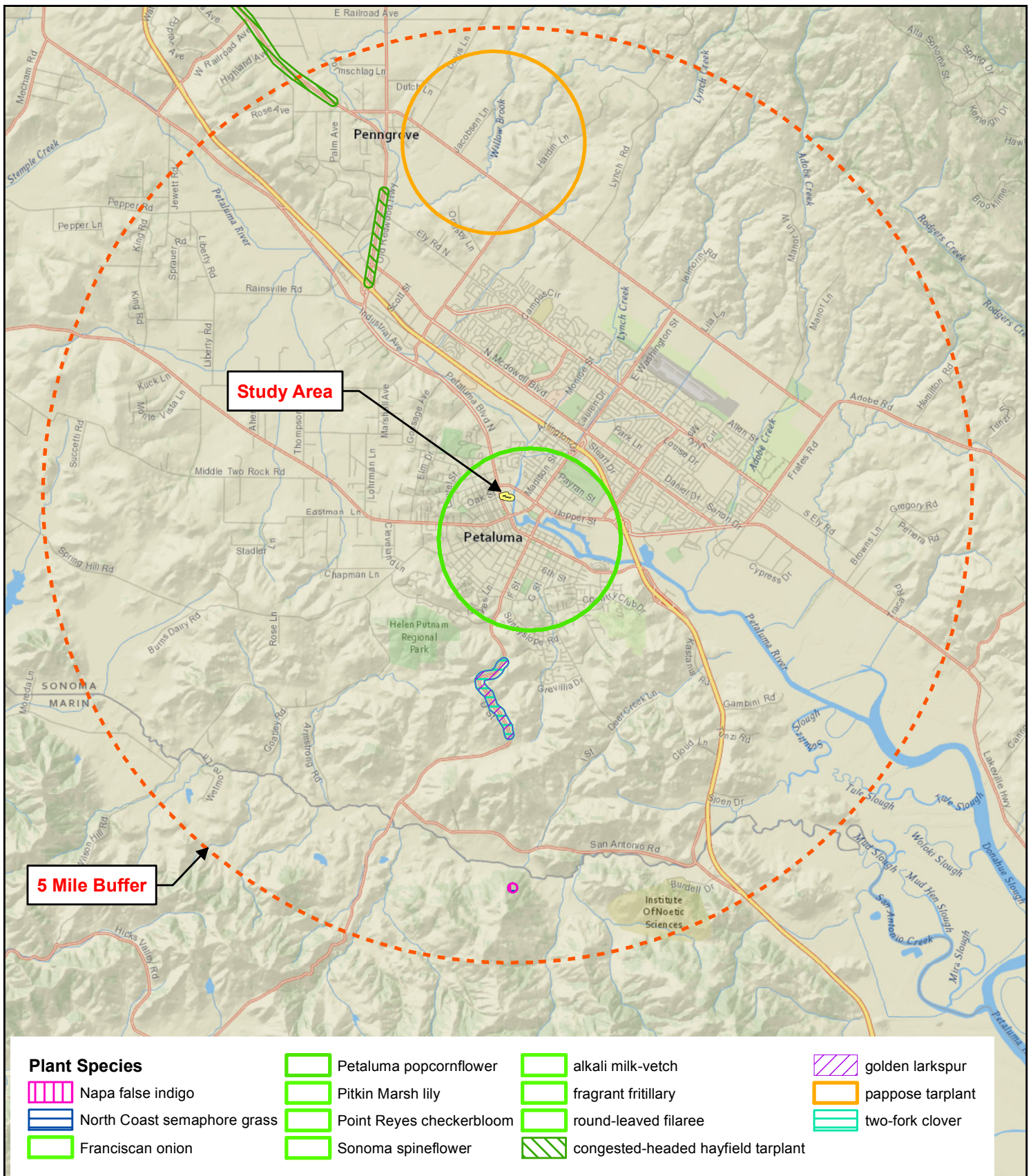
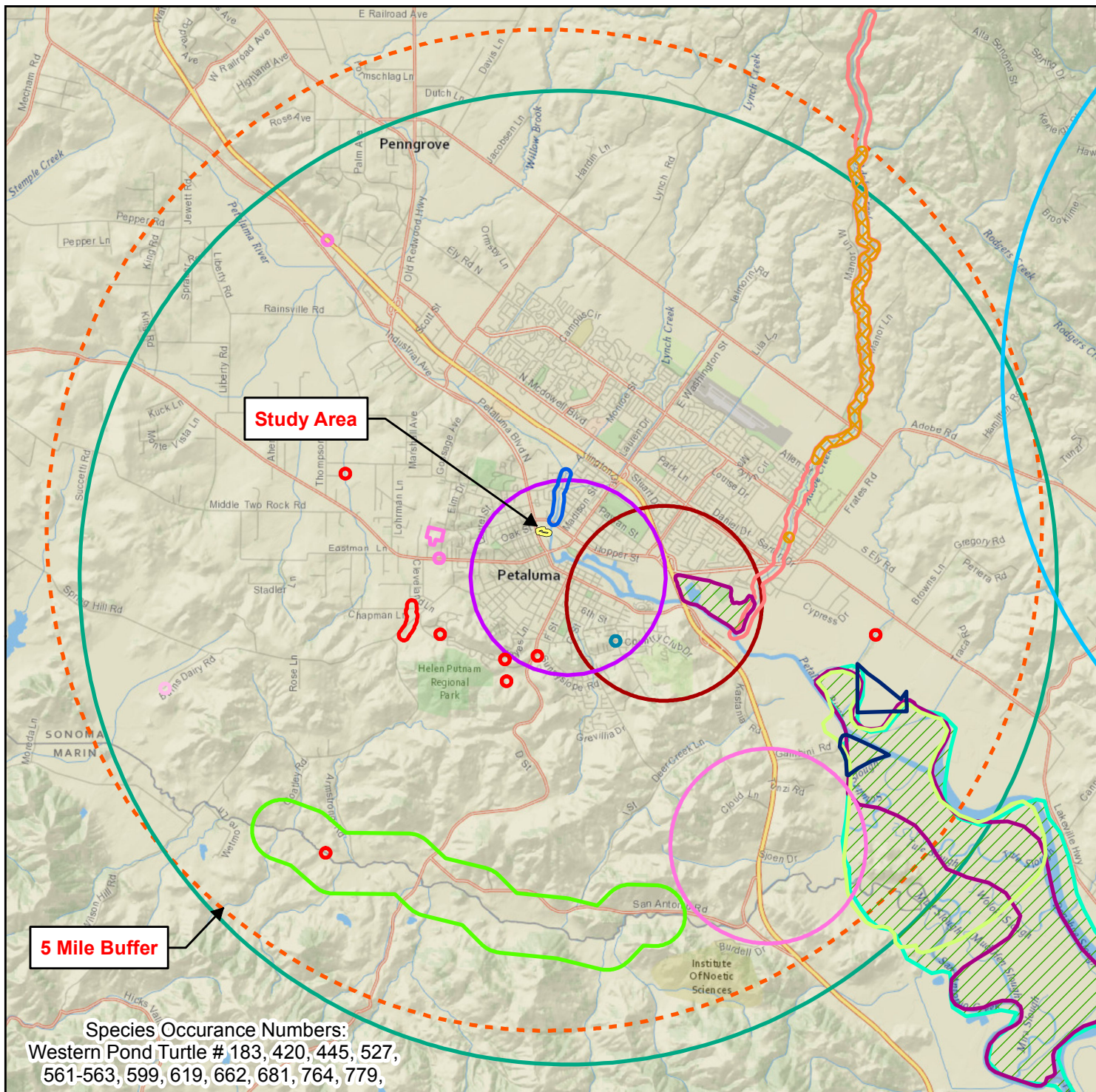


Figure 3. Special Status Plant Species within the Study Area

Spanos Petaluma
Sonoma County, California



Map Prepared Date: 10/9/2015
Map Prepared By: fhourigan
Base Source: Esri, National Geographic
Data Source(s): WRA, CNDDB



Wildlife Species

- | | | |
|----------------------------|-----------------------------|---|
| American badger | California tiger salamander | bank swallow |
| California black rail | Sacramento splittail | burrowing owl |
| California clapper rail | San Pablo song sparrow | foothill yellow-legged frog |
| California red-legged frog | Swainson's hawk | mimic tryonia (=California brackishwater snail) |
| Townsend's big-eared bat | pallid bat | salt-marsh harvest mouse |
| | | saltmarsh common yellowthroat |
| | | steelhead - central California coast DPS |

Figure 4. Special Status Wildlife Species within the Study Area



ENVIRONMENTAL CONSULTANTS

Spanos Petaluma
 Sonoma County, California



Map Prepared Date: 9/30/2015
 Map Prepared By: fhourigan
 Base Source: Esri, National Geographic
 Data Source(s): WRA, CNDDB

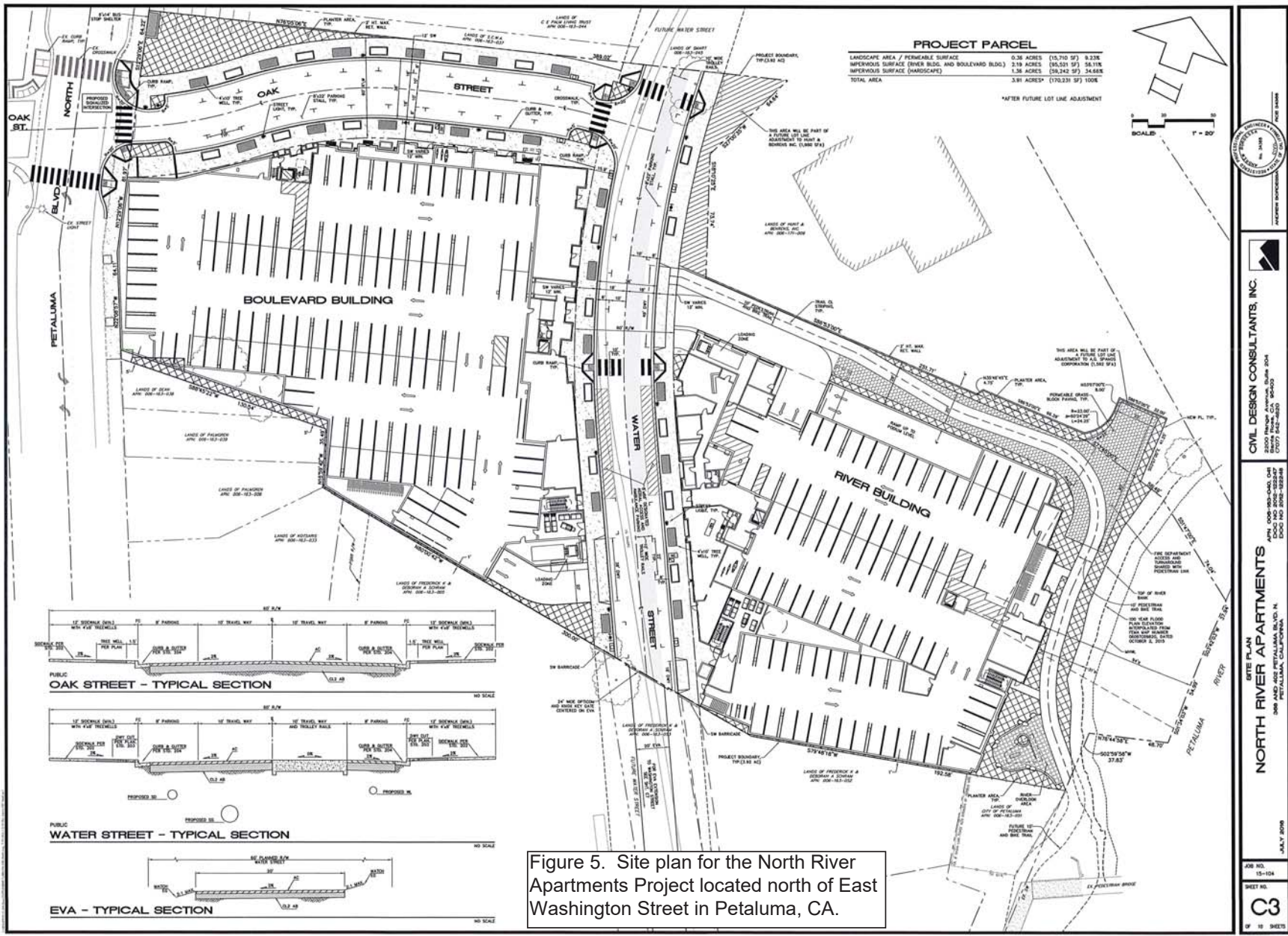


Figure 5. Site plan for the North River Apartments Project located north of East Washington Street in Petaluma, CA.

APPENDIX A

Plant Species Observed in the Project Area

Appendix A. List of plant species observed in the North River Apartments Project Area during site visits on June 1 and October 6, 2015.

SCIENTIFIC NAME	COMMON NAME
Plants	
<i>Avena barbata</i>	slender wild oat
<i>Baccharis pilularis</i>	coyote brush
<i>Bromus diandrus</i>	ripgut grass
<i>Bromus hordeaceus</i>	soft chess
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Centromadia pungens</i>	common tarweed
<i>Cichorium intybus</i>	chicory
<i>Convolvulus arvensis</i>	bindweed
<i>Cynodon dactylon</i>	Bermuda grass
<i>Dittrichia graveolens</i>	stinkwort
<i>Foeniculum vulgare</i>	fennel
<i>Grindelia stricta var. angustifolia</i>	marsh gumplant
<i>Lactuca serriola</i>	wild lettuce
<i>Leymus triticooides</i>	creeping wildrye
<i>Lepidium latifolium</i>	pepperweed
<i>Lolium perenne</i>	perennial ryegrass
<i>Picris echioides</i>	bristly ox's tongue
<i>Raphanus sativus</i>	cultivated radish
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Salix lasiolepis</i>	arroyo willow
<i>Schoenoplectus acutus var. occidentalis</i>	California rush
<i>Xanthium strumarium</i>	cocklebur

APPENDIX B

Potential for Special-status Plant and Wildlife Species to Occur

Appendix B. Potential for Special Status Plant Species to Occur in the North River Apartments Project Area. List compiled from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (2015), U.S. Fish and Wildlife Service (USFWS) Species Lists (2015), and California Native Plant Society (CNPS) Electronic Inventory (2015) searches of the Cotati, Glen Ellen, Petaluma, and Petaluma River USGS 7.5' quadrangles.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
PLANTS				
Franciscan onion <i>Allium peninsulare</i> var. <i>franciscanum</i>	Rank 1B	Cismontane woodland, valley and foothill grassland; on clay substrate, often derived from serpentine. Elevation range 170 – 985 feet. Blooms: May – June.	Unlikely. Although grasslands and clay soils occur in the project area, the habitat is highly degraded and appears to be frequently tilled. The disturbance of the soils and dominance of highly competitive, weedy species would not provide suitable habitat to support perennial, native species like Franciscan onion.	No further actions are recommended for this species.
Sonoma alopecurus <i>Alopecurus aequalis</i> var. <i>sonomensis</i>	FE, Rank 1B	Freshwater marshes and swamps, riparian scrub; closely associated with other wetland species. Elevation range: 15 – 1200 feet. Blooms: May – July.	Unlikely. Habitat may be present along the Petaluma River, but it is likely too saline and recent bank stabilization with rip rap probably precludes this species.	No further actions are recommended for this species.
Napa false indigo <i>Amorpha californica</i> var. <i>napensis</i>	Rank 1B	Openings in broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 395 – 6560 feet. Blooms: April – July.	No potential. The habitat for this species does not occur in the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	Rank 1B	Playas, vernal pools, valley and foothill grassland; located in mesic grassy areas on alkaline substrate. Elevation range: 0 – 195 feet. Blooms: March – June.	Unlikely. Although grasslands and a wetland swale occur in the Project Area, they are highly degraded and would not provide suitable habitat for this species. Playas and vernal pools are not located in the Project Area. Additionally, soils in the Project Area are not strongly alkaline.	No further actions are recommended for this species.
Sonoma sunshine <i>Blennosperma bakeri</i>	FE, SE, Rank 1B	Vernal pools, vernal swales, and mesic areas in valley grassland; highly restricted to the Santa Rosa Plain and Valley of the Moon. Elevation range: 35 – 360 feet. Blooms: March – April.	No potential. This species is highly restricted to the Santa Rosa Plain and Valley of the Moon. The nearest known occurrence is 9 miles north of the Project Area and it is not known to occur as far south as Petaluma. Additionally, the Project Area contains a highly degraded wetland swale and degraded, frequently tilled grasslands that would not provide suitable habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
round-leaved filaree <i>California macrophylla</i>	Rank 1B	Cismontane woodland, valley and foothill grassland; located in areas underlain by clay substrate. Elevation range: 45 – 3900 feet. Blooms: March – May.	Unlikely. This species is known to occur in areas with a thick, nearly impenetrable clay layer. Although the Project Area contains clayey soils, they are somewhat loose and do not create a distinct, impervious layer. Additionally, although grasslands occur in the Project Area, these grasslands are degraded, frequently tilled grasslands that would not provide suitable habitat for this species.	No further actions are recommended for this species.
Sonoma Ceanothus <i>Ceanothus sonomensis</i>	Rank 1B	Chaparral; located on sandy serpentine or volcanic substrates. Elevation range: 705 – 2625 feet. Blooms: February – April.	No potential. The habitat features required for this species do not occur in the Project Area.	No further actions are recommended for this species.
pappose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i>	Rank 1B	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland; in vernal mesic sites, often with alkali substrate. Elevation range: 5 – 1380 feet. Blooms: May – November.	Unlikely. Although the Project Area contains grassland, the site has been repeatedly altered (tilling, mowing) and is surrounded by development thereby reducing potential seed sources for colonization / re-colonization. Additionally, the site assessment performed was during this species blooming period and sufficient to constitute a protocol-level rare plant survey and none were observed.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Point Reyes bird's-beak <i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Rank 1B	Coastal salt marshes; located in low-growing saltgrass and pickleweed mats. Elevation range: 0 – 35 feet. Blooms: June – October.	No potential. Although tidal habitat is present along the Petaluma River, the typical broad, high intertidal habitat for this species does not occur in the Project Area.	No further actions are recommended for this species.
soft bird's-beak <i>Chloropyron molle</i> ssp. <i>molle</i>	FE, SR, Rank 1B	Coastal brackish or salt marshes; located in low-growing saltgrass and pickleweed mats. Elevation range: 0 – 10 feet. Blooms: June – November.	No potential. Although tidal habitat is present along the Petaluma River, the typical broad, high intertidal habitat for this species does not occur in the Project Area.	No further actions are recommended for this species.
Sonoma spineflower <i>Chorizanthe valida</i>	FE, SE, Rank 1B	Coastal prairie; in sandy soils. Elevation range: 35 – 1000 feet. Blooms: June – August.	No potential. The habitat for this species does not occur in the Project Area.	No further actions are recommended for this species.
yellow larkspur <i>Delphinium luteum</i>	FE; SR; Rank 1B	Chaparral, coastal prairie, coastal scrub; located on rocky north-facing slopes. Elevation range: 0 – 325 feet. Blooms: March – May.	No potential. The habitat for this species does not occur in the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
dwarf downingia <i>Downingia pusilla</i>	Rank 2B	Valley and foothill grassland, vernal pools; located in mesic grassy sites, pool and lake margins. Elevation range: 3 – 1450 feet. Blooms: March – May.	Unlikely. This species is typically restricted to vernal pools with low disturbance and low growing vegetation. Vernal pools do not occur in the Project Area and the wetland swale and grassland areas in the Project Area are highly degraded, consisting of tall stands of highly competitive grasses and forbs that would out-compete this low-growing plant. The Project Area does not provide suitable habitat for this species.	No further actions are recommended for this species.
fragrant fritillary <i>Fritillaria liliacea</i>	Rank 1B	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland; located in grassy sites underlain by clay, typically derived from volcanics or serpentine. Elevation range: 10 – 1335 feet. Blooms: February – April.	Unlikely. Although the Project Area contains grasslands with clayey soils, soils are somewhat loamy and do not contain a distinct, impervious clay layer typical of this species. Additionally, the grasslands in the Project Area are highly degraded and frequently tilled which would prevent the establishment of this bulbiferous, perennial species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Hayfield tarplant <i>Hemizonia congesta</i> ssp. <i>congesta</i>	Rank 3	Coastal scrub, valley and foothill grassland. Elevation range: 65 – 1840 feet. Blooms: April – October.	Unlikely. Although the Project Area contains grassland, the site has been repeatedly altered (tilling, mowing) and is surrounded by development thereby reducing potential seed sources for colonization / re-colonization. Additionally, the site assessment performed was during this species blooming period and sufficient to constitute a protocol-level rare plant survey and no tarplants were observed.	No further actions are recommended for this species.
Marin western flax <i>Hesperolinon congestum</i>	FT, ST, Rank 1B	Chaparral, valley and foothill grassland; located on serpentine substrate. Elevation range: 15 – 1205 feet. Blooms: April – July.	No potential. This species is a serpentine obligate plant. Serpentine soils do not occur in the Project Area.	No further actions are recommended for this species.
Burke's goldfields <i>Lasthenia burkei</i>	FE; SE; Rank 1B	Vernal pools, meadows and seeps; typically located in pools and swales. Elevation range: 45 – 1950 feet. Blooms: April – June.	Unlikely. The railroad spur ditch could provide habitat, but it is highly degraded and dominated by highly competitive grasses and forbs that would out-compete this low-growing species. The nearest known occurrence of this species is 9 miles from the Project Area. This species is not known as far south as Petaluma.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
<p>Contra Costa goldfields <i>Lasthenia conjugens</i></p>	<p>FE; Rank 1B</p>	<p>Valley and foothill grassland, vernal pools, cismontane woodland; located in pools, swales, and depressions in mesic grassy sites underlain by alkaline substrate. Elevation range: 0 – 1530 feet. Blooms: March – June.</p>	<p>Unlikely. Although a drainage ditch and grasslands occur in the Project Area, these habitats are highly degraded and dominated by highly competitive grasses and forbs that would out-compete this low-growing species. The nearest known occurrence of this species is 7 miles from the Project Area and is not known as far south as Petaluma. The high amount of urban development surrounding the Project Area and the degraded, frequently tilled grasslands and swale would not provide suitable habitat for this species.</p>	<p>No further actions are recommended for this species.</p>
<p>legenere <i>Legenere limosa</i></p>	<p>Rank 1B</p>	<p>Vernal pools; typically located in the deepest portions of pools. Elevation range: 3 – 2860 feet. Blooms: April – June.</p>	<p>No potential. Vernal pools do not occur in the Project Area. The swale in the Project Area is dominated by tall, non-native grasses and forbs that would out-compete this low-growing species.</p>	<p>No further actions are recommended for this species.</p>
<p>Jepson's Leptosiphon <i>Leptosiphon jepsonii</i></p>	<p>Rank 1B</p>	<p>Chaparral, cismontane woodland; on open to partially shaded grassy slopes on volcanic or the periphery of serpentine substrate. Elevation range: 330 – 1640 feet. Blooms: April – May.</p>	<p>No potential. Volcanic, serpentine soils do not occur in the Project Area. The Project Area does not contain the habitat features necessary for this species.</p>	<p>No further actions are recommended for this species.</p>

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Sebastopol meadowfoam <i>Limnanthes vinculans</i>	FE, SE, Rank 1B	Mesic meadows, valley and foothill grassland, vernal pools; located in swales, wet meadows, depressions, and pools in the oak savanna of the Santa Rosa Plain on heavy adobe clay substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	No potential. This species is highly restricted to the Santa Rosa Plain and does not occur as far south as Petaluma.	No further actions are recommended for this species.
marsh microseris <i>Microseris paludosa</i>	Rank 1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation range: 5 – 300 feet. Blooms: April – June.	Unlikely. The nearest recorded occurrence of this species is approximated from a 1937 collected located approximately 3 miles from the Project Area. Although this species occurs in grasslands, these areas in the Project Area are highly degraded and non-native plants would likely outcompete this species. Additionally, the Project Area is fragmented from the known population due to the high amount of urban development surrounding the Project Area. This would create a restriction to dispersal into the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Baker's navarretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Rank 1B	Wet, mesic sites underlain by adobe and/or alkaline substrate in cismontane woodland, meadows, seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Elevation range: 15 – 5710 feet. Blooms: April – July.	Unlikely. Although grasslands occur in the Project Area, they are high degraded and consist of highly competitive, tall, non-native grasses that would out-compete this species. Additionally, the Project Area does not contain suitable soils for this species. The nearest known occurrence is 9 miles away from a vernal pool on Burdell Mountain. Populations of this species are known from Valley of the Moon, the Santa Rosa Plain, and Burdell Mountain. All of these occurrences are restricted from the Project Area due to topographic and urban barriers to dispersal.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Petaluma popcornflower <i>Plagiobothrys mollis</i> var. <i>vestitus</i>	Rank 1A	Coastal salt marsh, valley and foothill grassland; presumed to occur in mesic grasslands on marsh fringe. Elevation range: 30 – 165 feet. Blooms: June – July.	No potential. The tidal habitat along the Petaluma River in the bank stabilization, rip rap area is not suitable for this species. Although grasslands occur in the Project Area, this species is known exclusively from marshes and grasslands on marsh fringes. The nearest recorded occurrence is an approximation from a 1932 collection and is likely extirpated due to urban development. This collection appears to be historically associated with marshland.	No further actions are recommended for this species.
North coast semaphore grass <i>Pleuropogon hooverianus</i>	ST, Rank 1B	Broadleaf upland forests, meadows and seeps, freshwater marshes and swamps, North Coast coniferous forest, shaded, wet, and grassy areas in forested habitat. Elevation range: 10 – 635 feet. Blooms May – August.	No potential. The habitat for this species does not occur in the Project Area.	No further actions are recommended for this species.
Marin knotweed <i>Polygonum marinense</i>	Rank 3	Salt and brackish coastal marshes. Elevation range: 0 – 35 feet. Blooms: sometimes April, May – August, sometimes October.	No potential. Although tidal habitat is present along the Petaluma River, the typical habitat for this species does not occur in the bank stabilization, rip rap area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Point Reyes checkerbloom <i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Rank 1B	Marshes and swamps; located in freshwater marsh habitat near the coast. Elevation range: 10 – 245 feet. Blooms: April – September.	No potential. Although tidal habitat is present along the Petaluma River, the typical habitat for this species does not occur in the bank stabilization, rip rap area.	No further actions are recommended for this species.
showy rancheria clover <i>Trifolium amoenum</i>	FE, Rank 1B	Valley and foothill grassland, coastal bluff scrub, swales, open sunny sites, sometimes on serpentine. Elevation range: 15 – 1365 feet. Blooms: April – June.	Unlikely. Although grasslands and a swale occur in the Project Area, they are highly degraded and dominated by dense, tall, non-native grasses that would readily out-compete this species. Additionally, serpentine soils do not occur in the Project Area.	No further actions are recommended for this species.
WILDLIFE				
Mammals				
Pallid bat <i>Antrozous pallidus</i>	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Roost sites include old ranch buildings, rocky outcrops and caves within sandstone outcroppings. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Moderate Potential. The Project Area contains buildings that may provide suitable roosting sites. Occurrence within 5 miles.	Bat roost surveys prior to project activities, or conduct project activities outside of the bat roosting period.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Western red bat <i>Lasiurus blossevillii</i>	SSC, WBWG High	Typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields. There may be an association with intact riparian habitat.	Unlikely. Typical riparian roosting habitat is not present within the Project Area; may rarely forage in the area. No occurrences within 5 miles.	No further actions are recommended for this species.
Fringed myotis <i>Myotis thysanodes</i>	WBWG High	Fringed myotis is associated with a wide variety of habitats including mixed coniferous-deciduous forest and redwood/sequoia groves. Buildings, mines and large snags are important day and night roosts.	Unlikely. The Project Area contains buildings that may provide roosting sites, but surrounding development may reduce the potential for this species to occur in colonies. No occurrences within 5 miles.	No further actions are recommended for this species.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC, WBWG High	This species is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	Moderate Potential. The Project Area contains buildings that may provide roosting sites, but surrounding development may reduce the potential for this species to occur in colonies. A big-eared bat maternity colony is known from Olompali State Park 6.0 miles to the south (CDFG 2012), and this species may occasionally forage over the Project Site.	Bat roost surveys prior to project activities, or conduct project activities outside of the bat roosting period.
American badger <i>Taxidea taxus</i>	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	No Potential. The Project Site is highly disturbed, surrounded by urban development, and offers no suitable habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Salt marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE, SE, CFP	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed marsh is the primary habitat. Does not burrow; builds loosely organized nests. Requires higher areas for flood escape.	No Potential. The Project Area does not contain a large area of coastal brackish marsh habitat necessary to support this species.	No further actions are recommended for this species.
Birds				
Golden eagle <i>Aquila chrysaetos</i>	BCC, CFP	Resident in rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Unlikely. The Project Area does not provide extensive open habitat for foraging or nesting. May occasionally fly-over.	No further actions are recommended for this species.
White-tailed kite <i>Elanus leucurus</i>	CFP	Resident in coastal and valley lowlands. Preys on small mammals and other small vertebrates, and insects. Nests in trees and larger shrubs, often in relatively isolated stands.	Unlikely. The Project Area provides marginal open habitat for foraging; however, surrounding development precludes likely roosting or nesting behavior within the Project Area.	No further actions are recommended for this species.
Bald eagle <i>Haliaeetus leucocephalus</i>	SE, CFP	Generally a winter visitor, with limited breeding in the vicinity of San Francisco Bay. Requires large bodies of water, or free-flowing rivers with abundant fish adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branchwork.	Unlikely. The Project Area does not provide extensive open habitat for foraging. May occasionally fly-over.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Northern harrier <i>Circus cyaneus</i>	SSC	Resident and winter visitor. Found in open habitats such as marshes, grasslands and agricultural areas. Tends to nest near water in dense, tall vegetation.	Unlikely. The Project Area provides marginal open habitat for foraging; however, surrounding development precludes roosting or nesting within the Project Area.	No further actions are recommended for this species.
Ferruginous hawk <i>Buteo regalis</i>	BCC	Winter visitor; does not breed in the region. Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats. Preys on rabbits, ground squirrels and mice.	Unlikely. The Project Area is highly disturbed and surrounded by urban development, offering no typical wintering habitat for this species.	No further actions are recommended for this species.
American peregrine falcon <i>Falco peregrinus anatum</i>	SE, BCC, CFP	Largely resident. Requires protected cliffs, ledges or manmade structures for nesting. Often associated with coasts, bays, marshes and other open expanses of water. Preys primarily upon waterbirds; forages widely.	Unlikely. No cliff, ledge or anthropogenic substrates suitable for nesting are present within the Project Area, and foraging is unlikely due to the disturbed nature of the site. May occasionally fly over the Project Area.	No further actions are recommended for this species.
Prairie falcon <i>Falco mexicanus</i>	BCC	Resident and winter visitor. Inhabits dry, open terrain. Breeding sites are located on cliffs; forages widely. Prey upon a variety of vertebrates, mostly mammals and birds.	Unlikely. The Project Site provides no breeding habitat for this species, and the urbanized nature of surrounding areas likely precludes foraging.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Ridgeway's (California) clapper rail <i>Rallus longirostris obsoletus</i>	FE, SE, CFP	Resident in salt and brackish marshes of San Francisco Bay, preferring large areas of contiguous marsh traversed by tidal sloughs. Nests in dense marsh vegetation, but often forages away from cover on invertebrates in intertidal mudflats.	No Potential. The Project Area does not contain enough of coastal brackish marsh habitat necessary to support this species. Known occurrences are downstream in the Petaluma Marsh wetlands.	No further actions are recommended for this species.
California black rail <i>Laterallus jamaicensis coturniculus</i>	ST, BCC, CFP	Extremely secretive resident of emergent marshes in the San Francisco Bay Estuary, other coastal sites, and portions of the Central Valley. Occurs in salt, brackish and freshwater habitats. Nests in dense stands of emergent vegetation.	No Potential. The Project Area does not contain enough of coastal brackish marsh habitat necessary to support this species. Known occurrences are downstream in the Petaluma Marsh wetlands.	No further actions are recommended for this species.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FC, SE, BCC	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	No Potential. The Project Site offers no suitable riparian habitat for this species.	No further actions are recommended.
Burrowing owl <i>Athene cunicularia</i>	BCC, SSC	Largely resident in the region. Found in grasslands and other open habitats with a sparse to absent shrub/tree canopy. Nests and roosts in old mammal burrows, typically those of ground squirrels. Preys upon insects, and also small mammals, reptiles and birds.	Unlikely. Open habitat within the Project Area is extremely limited in extent at a landscape scale, and completely surrounded by development. Additionally; this species is considered extirpated as a breeder from Sonoma County.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Long-eared owl <i>Asio otus</i>	SSC	Resident and visitor in the region. Nests in a variety of woodland habitats, including oak and riparian. Requires adjacent open land with rodents for foraging, and the presence of old nests of crows, hawks, magpies etc. for breeding.	Unlikely. The Project Site contains no woodland habitat suitable for nesting, and the trees present are likely too limited in extent to support roosting by this species.	No further actions are recommended for this species.
Short-eared owl <i>Asio flammeus</i>	SSC	Resident and winter visitor, found in open, treeless areas with elevated perches and dense vegetation. Tall grasses and/or emergent vegetation are needed for nesting and daytime seclusion.	Unlikely. Grassland habitat within the Project Site are highly disturbed and very limited in area, providing no typical breeding or foraging habitat.	No further actions are recommended for this species.
Vaux's swift <i>Chaetura vauxi</i>	SSC	Summer resident. Forages high in the air over a variety of habitats but prefers rivers/lakes in forest areas. Requires coniferous trees with vertical cavities in forest or woodland habitats for nesting.	Unlikely. Suitable forest or woodland habitat is not present within the Project Area. There are no documented nesting occurrences within 5.0 miles of the Project Area. May occasionally forage over the Project Area during migration.	No further actions are recommended for this species.
Black swift <i>Cypseloides niger</i>	BCC, SSC	Generally found in the coastal belt of Santa Cruz and Monterey County; central and southern Sierra Nevada; San Bernardino and San Jacinto Mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above surf; forages widely.	Unlikely. No suitable breeding habitat exists within the Project Area, and there are no documented nesting occurrences within 5.0 miles of the Project Area. May rarely pass over the Project Area during migration.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Rufous hummingbird <i>Selasphorus rufus</i>	BCC	Breeds in transition life zone of northwest coastal area from Oregon border to southern Sonoma County. Nests in berry tangles, shrubs, and conifers.	Unlikely. Sonoma County is not within this species breeding range. May occur occasionally during migration.	No further actions are recommended for this species.
Allen's hummingbird <i>Selasphorus sasin</i>	BBC	Summer resident, breeding along much of California's coastal slope. Occurs in woodlands, parks, and gardens.	Moderate Potential. This species is a relatively common breeder within Sonoma County's urban habitats, and may nest within the Project Area.	If vegetation removal and/or ground disturbance occurs from February 1 to August 31, a breeding bird survey should be conducted within 14 days of the initiation of work activities.
Nuttall's woodpecker <i>Picoides nuttallii</i>	BCC	Resident in lowland woodlands throughout much of California west of the Sierra Nevada. Typical habitat is dominated by oaks.	Unlikely. Typical woodland habitat is not present within the Project Area. Transient individuals may occasionally occur in the Project Area's tree groves.	No further actions are recommended for this species.
Lewis's woodpecker <i>Melanerpes lewis</i>	BCC	Uncommon winter resident occurring in open oak savannahs, broken deciduous and coniferous habitats. Often associated with burned areas.	No Potential. Sonoma County is not within this species breeding range, and it is unlikely to occur even during dispersal periods due to a lack of savannah or woodland habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Bank swallow <i>Riparia riparia</i>	ST	Summer resident; breeds in riparian and other lowland habitats in western California, including coastal cliffs. Nests colonially in burrows excavated on vertical faces with fine-textured or sandy soils.	Unlikely. No suitable vertical cliff habitat is present within or adjacent to the Project Area and recent flood control project work precludes presence. Unlikely to occur even during migration due to lack of known breeding sites in the area. Known occurrence is 5 miles east.	No further actions are recommended for this species.
Olive-sided flycatcher <i>Contopus cooperi</i>	BCC, SSC	Nesting habitats are mixed conifer, montane hardwood-conifer, douglas-fir, redwood, red fir and lodgepole pine. Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain.	No Potential. The Project Area lacks the forest or woodland habitat used by this species for nesting.	No further actions are recommended for this species.
Loggerhead shrike <i>Lanius ludovicianus</i>	BCC, SSC	Resident in open habitats with scattered shrubs, trees, posts, and utility lines from which to forage for large insects. Nests are well concealed in densely-foliaged shrubs or trees.	Unlikely. Suitable foraging habitat exists within the more open portions of the Project Area, urban development likely precludes this species.	No further actions are recommended for this species.
Yellow warbler <i>Dendroica petechia brewsteri</i>	SSC	Summer resident, nesting in riparian stands of willows, cottonwoods, aspens, sycamores, and alders. Also nests in suitable montane shrubbery. Occurs widely during migration.	Unlikely. The Project Area offers no riparian or other habitat suitable for nesting. May occur in small numbers during migration.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
San Francisco (saltmarsh) common yellowthroat <i>Geothlypis trichas sinuosa</i>	BCC, SCC	Resident subspecies of the San Francisco Bay area, occurring typically in the emergent vegetation of salt, brackish and freshwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, or willows for nesting.	No Potential. The Project Area does not offer the dense vegetation and habitat suitable for this species.	No further actions are recommended for this species.
Bryant's savannah sparrow <i>Passerculus sandwichensis alaudinus</i>	SSC	Resident subspecies, associated with the coastal fog belt. Occupies low tidally influenced habitats, adjacent to ruderal areas; often found where Pickleweed communities merge into grassland. Builds nests in taller grasses and rushes along roads, levees, and water conveyance canals.	Unlikely. The Project Area is located outside of the coastal fog belt and does not provide any typical marsh habitat for this species.	No further actions are recommended for this species.
Grasshopper sparrow <i>Ammodramus savannarum</i>	SSC	Summer visitor. Breeds in dense grasslands (both non-native and native) on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Secretive.	Unlikely. Grasslands within the Project Area are highly disturbed and very restricted in area, providing no typical nesting habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Samuel's (San Pablo) song sparrow <i>Melospiza melodia samuelis</i>	SSC	Resident subspecies in tidal marshes and immediately adjacent areas of San Pablo Bay, including the Petaluma River.	Moderate Potential. Known occurrence nearby the Project Area, and could be present in vegetation along the Petaluma River.	If vegetation removal and/or ground disturbance occurs from February 1 to August 31, a breeding bird survey should be conducted within 14 days of the initiation of work activities.
Tricolored blackbird <i>Agelaius tricolor</i>	BCC, SSC, RP	Resident, though disperses somewhat when not breeding. Typically nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs. Highly colonial; breeding aggregations tend to be large.	Unlikely. The Project Area does not support the dense marsh vegetation necessary for nesting, roosting, and foraging. No known occurrences within 5 miles.	No further actions are recommended.
Lawrence's Goldfinch <i>Spinus lawrencei</i>	BCC	A summer visitor in northern California, generally uncommon and local. Typically found in arid open woodlands, including oak savannah. Breeding distribution is erratic from year to year.	Unlikely. The Project Area does not contain high quality nesting habitat and urban development likely preclude its presence.	No further actions are recommended for this species.
Reptiles & Amphibians				
California red-legged frog <i>Rana aurora draytonii</i>	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Must have access to aestivation habitat.	No Potential. The Project Area does not provide suitable freshwater aquatic or upland dispersal habitat for this species. The area is disturbed and urban.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Foothill yellow-legged frog <i>Rana boylei</i>	SSC	Found in or near rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	No Potential. The Project Area does not provide suitable freshwater aquatic or upland dispersal habitat for this species. The area is disturbed and urban.	No further actions are recommended for this species.
California tiger salamander <i>Ambystoma californiense</i>	FE, ST	Populations in Santa Barbara and Sonoma counties currently listed as endangered. Inhabits grassland, oak woodland, ruderal and seasonal pool habitats. Seasonal ponds and vernal pools are crucial to breeding. Adults utilize mammal burrows as aestivation habitat.	No Potential. The Project Area is south of the southern extent of the known range of the Santa Rosa DPS and does not support suitable freshwater aquatic habitat; potential upland estivation habitat is not suitable as it is surrounded by developed areas.	No further actions are recommended for this species.
Pacific pond turtle <i>Actinemys (Emys) marmorata</i>	SSC	Occurs in perennial freshwater ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter. Nests are excavated in areas with friable soil and vegetative cover.	No Potential. The steep banks and retaining walls of the Petaluma River through Project Area does not contain habitat necessary to support this species. Also, the tidal water of the Petaluma River through this reach is likely too saline.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Fishes				
Green sturgeon <i>Acipenser medirostris</i>	SSC, FT	Spawns in the Sacramento River and the Klamath River. Spawning occurs at temperatures between 8-14 degrees Celsius. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Unlikely. Although this species is known to occur in the Petaluma River, it is documented only far downstream from the Project Area.	No further actions are recommended for this species.
Tomales roach <i>Lavinia symmetricus</i>	SSC	Habitat generalists. Tolerant of relatively high temperatures and low oxygen levels, however unable to tolerate very saline water.	No Potential. The Petaluma River at the Project Area is too saline.	No further actions are recommended for this species.
Sacramento Splittail <i>Pogonichthys macrolepidotus</i>	SSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento Delta, Suisun Bay and associated marshes. Occurs in slow-moving river sections and dead end sloughs. Requires flooded vegetation for spawning and foraging for young. Splittail are primarily freshwater fish, but are tolerant of moderate salinity and can live in water where salinity levels reach of 10-18 parts per thousand.	High Potential. Known occurrence just upstream of the Project Area.	Possibly present in the Petaluma River, however no work is expected to occur in the river because of the project. Water quality of river will be protected by required best management practices.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Tidewater goby <i>Eucyclogobius newberryi</i>	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Unlikely. No known occurrences and water in the Petaluma River likely is too stagnant.	No further actions are recommended for this species.
Longfin Smelt <i>Spirinchus thaleichthys</i>	ST	Pelagic and andromous, spawning in freshwater and moving into estuarine and ocean waters as they mature with salinity ranging between 14 to 28 parts per thousand (ppt). Do not tolerate water temperatures higher than 22 degrees Celsius. Move seaward to San Francisco Bay and cooler water during the summer. Spawning between January and April, but may begin as early as November and last as late as June, over sandy substrate.	Moderate Potential. If present, it would likely be during cooler fall, winter, and spring months and not be in summer months when water temperatures are high.	In water work window between July 1 and October 31. No work is expected in the Petaluma River for this project. Water quality of river will be protected by required best management practices.
Coho Salmon - central CA coast ESU <i>Oncorhynchus kisutch</i>	FE, SE, NMFS	Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	No Potential. The Project Area does not contain aquatic habitat necessary to support this species and no known occurrences.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
Steelhead - central CA coast ESU <i>Oncorhynchus mykiss</i>	FT, NMFS	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for one or more years before migrating downstream to the ocean.	High Potential. The Petaluma River reach through the Project Area probably has this species migrating through at times.	No work is expected to occur in the river by the project. Mitigation measures recommended to protect water quality will reduce potential adverse impact to a less than significant level.
Chinook salmon - Central Valley spring-run ESU <i>Oncorhynchus tshawytscha</i>	FT, ST, RP, NMFS	Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for one or more years before migrating downstream to the ocean	High Potential. The Project Area does not contain aquatic habitat necessary to support this species.	No work is expected to occur in the river by the project. Mitigation measures recommended to protect water quality will reduce potential adverse impact to a less than significant level.
Invertebrates				

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RECOMMENDATIONS
California freshwater shrimp <i>Syncaris pacifica</i>	FE, SE, SSI, RP	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient (generally less than 1%) perennial streams where riparian cover is moderate to heavy. Shallow pools away from main stream flow. Winters near undercut banks with exposed roots. In the summer uses leafy branches touching water.	No Potential. The Petaluma River in the reach of the Project Area does not contain the freshwater aquatic habitat necessary to support this species.	No further actions are recommended for this species.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
SE	State Endangered
SD	State Delisted
ST	State Threatened
SR	State Rare
WBWG	Western Bat Working Group
BCC	Birds of Conservation Concern (U.S. Fish and Wildlife Service)
Rank 1A	CNPS Rank 1A: Plants presumed extinct in California
Rank 1B	CNPS Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2A	CNPS Rank 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B	CNPS Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CNPS Rank 3: Plants about which CNPS needs more information (a review list)
Rank 4	CNPS Rank 4: Plants of limited distribution (a watch list)

Potential to Occur:

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

APPENDIX C

Representative Photographs of the Project Area



**North River Apartments Project, Petaluma, CA
(October 2015)**

Top: Project site looking north. The Project Area is mostly vacant that has been developed in the past and now has wide areas of disturbance because of land clearing and demolition.

Bottom: Looking south along the railroad spur. Non-native grasses and forbs is the dominant vegetation across most of the Project Area.





**North River Apartments Project, Petaluma, CA
(October 2015)**

Top: Invasive non-native species, such as stinkwort in the foreground and Himalayan blackberry in the background are present in the Project Area.

Bottom: View of of the Petaluma River and area of bank stabilization with rip rap. The bank is steep and provides little area for tidal marsh plants to establish and grow.





**North River Apartments Project, Petaluma, CA
(October 2015)**

Top: View of the Project Area from Petaluma Blvd. North toward the east.
Past development has been demolished.

Bottom: Another view from Petaluma Blvd. North toward the southeast.
More area of former development now covered with non-native plants.

