PLANNING COMMISSION
STAFF REPORT

REPORT DATE: April 26, 2018
AGENDA DATE: May 3, 2018
PROJECT ADDRESS: 1425 and 601 Las Positas Road (MST2017-00773)
Arroyo Burro Open Space Park Creek Restoration

TO: Planning Commission
FROM: Planning Division, (805) 564-5470, extension 4562
Beatriz Gularte, Senior Planner
Megan Arciniega, Associate Planner

I. PROJECT DESCRIPTION

A Coastal Development Permit (CDP2017-00013) is requested for a four-acre restoration of the Arroyo Burro Creek corridor located on City-owned property within the Arroyo Burro Open Space Park. This park is currently used by the public as passive open space. Non-vehicular access would remain from the north end of Allen Road. The goal is to improve riparian wildlife and vegetation habitat and improve water quality in the creek watershed.

The project would restore 1,400 linear feet of the creek which is degraded, eroded and populated with non-native plant species. Man-made debris such as metal and concrete would be removed from the creek bed. New floodplain terraces would be created through the grading of 13,000 cubic yards of soil, of which 12,600 cubic yards would be exported and the remainder would be used onsite. The project would potentially impact nine eucalyptus trees, two western sycamores, and 54 arroyo willows. All nine of the eucalyptus would be removed to make way for large stature native trees like western sycamores and cottonwoods. One of the two western sycamores is dead and will be removed, the other will be relocated. All 54 arroyo willows will be removed, however the above ground branches and trunks will be salvaged and re-used as stakes throughout the creek corridor. The creek site would be re-vegetated with approximately 7,500 native plants including 550 trees. Three acres of native riparian floodplain habitat would be created as well as an acre of native planting within an adjacent oak woodland. After restoration work, creek banks would be stabilized with 100% bio-degradable erosion control materials including coconut fiber blankets and straw wattles. Wood rail fencing would be placed along the restoration area in appropriate places for visitor viewing. Two small interpretive signs would be placed on-site. New water service would be required for temporary irrigation (2-5 years) to the re-vegetated areas. No new structures are proposed. Public access through the site would be maintained during the duration of the restoration project.

Project activities would take approximately five months to complete and would be implemented in the dry season (July-December). The portions of the project involving heavy equipment and grading are anticipated to take three months to complete. The landscape portion of the project is estimated to take two months to complete (November - December). The project design includes measures to address potential environmental impacts. Project funding will come from Measure
B and matching grant funds from the Department of Fish and Wildlife and California Coastal Conservancy.

II. REQUIRED APPLICATIONS

The discretionary applications required for this project are:

A. Coastal Development Permit to allow the proposed development in the Appealable/Non-Appealable Jurisdictions of the City’s Coastal Zone (SBMC §28.44.060) for a portion of the project location; and

B. Project Design Review Approval by the Architectural Board of Review (SBMC §22.68).

The project will also require permits from the California Department of Fish and Wildlife, the Regional Water Quality Control Board, and the Army Corp of Engineers prior to project construction.

APPLICATION DEEMED COMPLETE: March 20, 2018
DATE ACTION REQUIRED: June 2, 2018

III. RECOMMENDATION

If approved as proposed, the project would conform to the City’s Zoning and Building Ordinances and policies of the Coastal Act and Local Coastal Plan (LCP). The City of Santa Barbara Creeks Division has agreed to incorporate all of the identified recommendations from the project’s technical reports and City standard Conditions of Approval as part of the project. Therefore, staff recommends that the Planning Commission approve the project, making the findings outlined in Section IX of this report, and subject to the conditions of approval in Exhibit A.

IV. BACKGROUND

The project site is located at the southwestern edge of the City of Santa Barbara (City) along Arroyo Burro Creek, within the City owned Arroyo Burro Open Space Park (Arroyo Burro Park). The eastern portion of Arroyo Burro Park has been owned by the City since 1998, and the western portion was acquired by the Creeks Division in March 2016, for the purpose of creek conservation, restoration, and passive recreation. The $4 million acquisition of the property was funded with $2.7 million from the Creeks Division, and $1.3 million in grant funding secured by the Trust for Public Lands, from the County of Santa Barbara, the Coastal Conservancy, and the California Natural Resources Agency. As a requirement of the grant funds, a conservation easement over the property was granted in perpetuity to the granting partners. The conservation easement prohibits any use that would impair or interfere with public access or the conservation values of the property including its natural conditions, scenery, open space, and fish, plant, and wildlife habitat.

Restoration of this portion of Arroyo Burro Park is a priority project for the Creeks Division. The project has been included on the City’s Six-Year Capital Improvement Program since 2015. In April of 2016, a Request for Proposals was solicited to engineering firms to develop conceptual designs for the restoration of this portion of the watershed. The contract was awarded in July
2016. Shortly thereafter, work began on detailed topographic surveys of the site to be used in the project designs and baseline hydrologic analysis.

In September 2016, as part of the annual Creek Week festivities, the Urban Creeks Council and Friends of Arroyo Burro held an event at the Arroyo Burro Park with informal talks on the watershed and a vision for a future restoration project at the site. Beginning in October 2016, a number of public meetings were hosted by the Creeks Division to solicit public input on the project. Prior to design development, a community meeting was held at Arroyo Burro Park on October 18, 2016, and a separate stakeholder group meeting was held on October 19, 2016, to give community members and stakeholder groups opportunities to provide input for the future restoration project. Over several months, various restoration options were investigated, including changes to the design that reduced the project reach and reduced the number of sycamore and willow trees to be impacted. Final Concept Design plans for the restoration project with the reduced project footprint and reduced number of tree removals were completed in May 2017. Additional public meetings were held on June 7 and 8, 2017. In addition the preliminary plans were presented at the Creeks Advisory Committee meeting on July 19, 2017, and the Parks and Recreation Commission meeting on July 26, 2017 for courtesy review and comments. The preliminary plans have been revised to reflect the input and comments received at these public meetings. Overall, the various committees, commissions and members of the public expressed support for the project.

The planned creek restoration efforts would improve conditions in the watershed, building upon several other restoration and water quality improvement projects undertaken in the watershed by the Creeks Division, including the restoration of Mesa Creek and the Arroyo Burro Estuary, Restoration of Upper Las Positas Creek at the Municipal Golf Course, and the recently completed Upper Arroyo Burro Restoration Project at Barger Canyon.
V. SITE INFORMATION AND PROJECT STATISTICS

A. JURISDICTIONAL BOUNDARIES

Arroyo Burro Park, and the proposed project site, is bifurcated by the Coastal Zone. The north portion of the park is located outside of the Coastal Zone, while the southern portion is within both the Appealable and Non-Appealable Jurisdictions of the City’s Coastal Zone. As such, the northern portion is designated per the General Plan and Title 30 Zoning Ordinance, while the southern portion is subject to the Local Coastal Plan and Title 28 Zoning Ordinance.

B. SITE INFORMATION

<table>
<thead>
<tr>
<th>Applicant:</th>
<th>City of Santa Barbara Creeks Division</th>
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<tbody>
<tr>
<td>Property Owner:</td>
<td>City of Santa Barbara</td>
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<tr>
<td>Site Information</td>
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<tr>
<td>Parcel Numbers:</td>
<td>APN 047-010-064, -009, -065, and 047-061-026</td>
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<tr>
<td>General Plan:</td>
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<td>Zoning:</td>
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<td>Local Coastal Plan:</td>
<td>(South Portion) Parks and Open Space, and Low Density Residential 2 du/acre</td>
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<td>Existing Use:</td>
<td>City Arroyo Burro Open Space Park; Passive Use</td>
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<td>Topography:</td>
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<td>Adjacent Land Uses:</td>
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<tr>
<td>North – Multi-Family Residential Units</td>
<td>East – Elings Park and Open Space</td>
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<tr>
<td>South – Single Family Residential and Douglas Family Preserve Park/Open Space</td>
<td>West – Single-Family Residential Units</td>
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C. PROJECT DIMENSIONS

The project site is four acres within the 20.9 acre Arroyo Burro Park including 1,400 linear feet of restoration along Arroyo Burro Creek.

VI. POLICY AND ZONING CONSISTENCY ANALYSIS

The project spans both Coastal Zone and Non-Coastal Zone jurisdiction areas. The requested discretionary approval, and focus of this staff report, is a Coastal Development Permit to allow the proposed development in the Appealable/Non-Appealable Jurisdictions of the City’s Coastal Zone (SBMC §28.44.060) for the southern portion of the project. The portions of the project outside the Coastal Zone comply with applicable zoning requirements. Therefore the analysis below focuses on the policy and zoning consistency pertaining to the southern portion of the project.

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1 Parcel 047-010-064 was annexed into the City on July 3, 2008 (previously County jurisdiction with land use designation as “Residential 4.6 units/acre”). Designation of Parks/Open Space proposed as part of current LCP Update.
A. ZONING ORDINANCE CONSISTENCY (TITLE 28)

The City zoning designation for the project site is Parks and Recreation (PR) as well as Single Family Residence (A-1). The PR zone permits passive recreation; activities that are engaged in by individuals or small groups, including activities such as walking, jogging, bird watching, and picnicking. The proposed park improvements are also consistent with the intent of the Single Family Residence (A-1) zone of “single family units; together with recreation, assembly and education facilities required to serve the community.”

B. LOCAL COASTAL PLAN CONSISTENCY

Approximately 1,400 linear feet of Arroyo Burro Creek at the southern end of the Arroyo Burro Park extends into the appealable jurisdiction of the Coastal Zone. Findings of consistency with California Coastal Act and the City’s Local Coastal Plan (LCP) are required for approval of the Coastal Development Permit (CDP). This report includes a policy discussion regarding the project’s consistency with applicable Coastal Act and LCP polices.

The project is located on the west edge of Component 2 in the LCP. This component uses Arroyo Burro Creek as its western boundary. Component 2 describes the residential land uses in the area, the large open spaces, and the Mesa neighborhoods that are adjacent to the east of the Creek.

The major coastal issues related to the project are the restoration and protection of Arroyo Burro Creek habitat. This issue is discussed below in regard to Consistency with the Coastal Act and LCP policies.

C. APPLICABLE COASTAL ACT AND LOCAL COASTAL PLAN POLICIES

I. ENVIRONMENTALLY SENSITIVE HABITAT AREAS

*Coastal Act Section 30240: Environmentally sensitive habitat areas (ESHA) shall be protected.* Arroyo Burro Creek meets the criteria of a coastal environmentally sensitive habitat area, within the coastal policies and regulations. The purpose of the project is to restore the creek and habitat to a more natural state, remove debris, eliminate non-native plants, and create enhanced riparian habitats for plant and wildlife. The project would potentially impact 54 arroyo willows, 2 western sycamores, and 9 eucalyptus trees. The arroyo willows and western sycamores will be preserved or relocated where feasible. However, due to their moderately invasive status and susceptibility to falling and destabilizing the creek banks, the nine eucalyptus in proximity to the creek are proposed to be removed as part of this project to make way for large stature native trees like western sycamores and cottonwoods. The creek site would be re-vegetated with approximately 7,500 native plants including 550 trees. Three acres of native riparian floodplain habitat would be created as well as an acre of native planting within an adjacent oak woodland. Additionally, the project also includes measures such as onsite monitoring, exclusionary fencing, and fines imposed on the contractor for damage to fencing or trees to protect native trees and shrubs during construction. Additionally, all work performed would be
consistent with the Habitat Preservation, Restoration, Maintenance and Monitoring Plan (Exhibit D) including site maintenance and reporting criteria to ensure successful establishment of the restoration area. Therefore, the project is consistent with this section of the Coastal Act and associated regulations.

**LCP Policy 6.8**: The riparian resources, biological productivity, and water quality of the City’s coastal zone creeks shall be maintained, preserved, enhanced, and, where feasible, restored. The project site is one of the few parcels in the Coastal Zone that has not been developed and will be preserved as Open Space/Park. The purpose of the project is to enhance and restore the creek and adjacent habitat to a more natural state, therefore, the project is consistent with this LCP policy.

2. **RECREATION**

**Coastal Act Section 30213**: Lower cost visitor facilities which shall be protected and encouraged. Arroyo Burro Park provides a free pedestrian park for visitors. The purpose of the project is to protect and enhance the creek portion of the park by removing debris, restoring eroded creek banks, and providing native habitat. Visitor viewing areas will also be created along the creek. The project will enhance the park and encourage visitors to enjoy Arroyo Burro Creek in its natural state, and maintain public pedestrian trails in the area; therefore, the project is consistent with this LCP policy.

**LCP Policy 3.9**: The land surrounding and including Arroyo Burro Creek shall be considered protective open space. The eastern portion of Arroyo Burro Park has been owned by the City since 1998, and the western portion was acquired by the Creeks Division in March 2016, for the purpose of creek conservation, restoration, and passive recreation. A conservation easement over the property was granted in perpetuity to the granting partners. The conservation easement prohibits any use that would impair or interfere with public access or the conservation values of the property including its natural conditions, scenery, open space, and fish, plant, and wildlife habitat. The purpose of the project is to protect and enhance the creek portion of the park by removing debris, restoring eroded creek banks and providing native habitat; consistent with the conservation easement and this policy.

3. **CREEK ENVIRONMENTS**

**Coastal Act Section 30240**: Development in areas adjacent to environmentally sensitive habitat areas to be sited and designed to prevent impacts which would significantly degrade those areas, and to be compatible with the continuance of those habitat and recreation areas. As discussed above, the purpose of the project is to restore the creek and associated riparian and wildlife habitat to a more natural state and prevent further degradation. The restoration plan would enhance habitat and passive recreation in the park. Therefore, the project is consistent with this section of the Coastal Act.

**LCP Policy 6.11**: Substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) Necessary water supply projects; (2)
Flood control projects where necessary or; (3) Developments where the primary function is the improvement of fish and wildlife habitat. The purpose of the project is to restore the creek and adjacent habitat to a more natural state. The project also benefits flood control. Therefore, the project is consistent with this LCP policy.

LCP Policy 6.8: The riparian resources, biological productivity, and water quality of the City's coastal zone creeks shall be maintained, preserved, enhanced, and, where feasible, restored. If left untreated, the creek channel would continue to erode into the high terraces, resulting in increased downstream sedimentation and degraded floodplain functions (Waterways Consulting, Inc., 65% Design Report, February 26, 2018, Exhibit E). The removal of debris from the channel, reconfiguration of the floodplain, and installation of bank stabilization and native plantings would improve creek hydrology, water quality, and biological productivity. Therefore, the project is consistent with this LCP policy.

4. HAZARDS

Coastal Act, Section 30253: New development shall do all of the following:

(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.
(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.
(c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development.
(d) Minimize energy consumption and vehicle miles traveled.
(e) Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses.

The Earth Systems report determined that the proposed work would not destabilize existing landslides in the general vicinity west of the site, and would improve overall stability in the project area. The restoration project is designed to address and improve soil issues in and adjacent to Arroyo Burro Creek by correcting eroding creek banks and reestablishing floodplain terraces to reduce stream energy and downstream erosion and flood elevations. The reconfigured floodplains and revegetation would also support further development of riparian habitat along the creek, with root systems that assist in reducing erosion. The project would not generate long-term vehicle trips or increased energy use. Tree planting would benefit air quality and reduction of greenhouse gases. The project benefits flood control, water quality, and biological resources. Therefore, the project is consistent with LCP policies.
5. VISUAL QUALITY

Coastal Act Section 30251: The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting. The project would restore existing open space that is degraded from non-native vegetation and would establish pedestrian viewing areas along the creek, thereby improving views of the creek and riparian habitat within the park. Therefore, the project is consistent with this section of the Coastal Act.

LCP Policy 9.1: The existing views to, from, and along the ocean and scenic coastal areas shall be protected, preserved, and enhanced. The project site is isolated from ocean views, however the park has public trails with undeveloped open views of grasslands, specimen trees, and the Arroyo Burro Creek riparian corridor, and the project area is visible to travelers along Las Positas Road. The project would enhance views by restoring the existing open space that is degraded from non-native vegetation, and establishing pedestrian viewing areas along the creek. Therefore, the project is consistent with this LCP policy.

VII. ENVIRONMENTAL REVIEW

A. BIOLOGICAL RESOURCES

The restoration project site contains important creek, wetland, riparian, and upland habitats, and is also identified as a wildlife movement corridor. Assessment of the biological resources, including potential “sensitive” and “special status” plant and wildlife species, was conducted by Dudek, in the Arroyo Burro Open Space Restoration Biological Site Assessment report, November 2017 (Exhibit F). The project would benefit long-term biological resources by protecting 106 trees, and planting approximately three acres of native vegetation, and approximately one acre of native understory plantings within an existing oak woodland. Although the project would remove 54 arroyo willows, one western sycamore, and nine eucalyptus\(^2\) trees, the site would be revegetated with an estimated 7,500 native plantings, including 1,000 tree cuttings and 550 container trees.

Potential project impacts to important biological resources that were identified relate to grading, vegetation removal, and the potential for chemical spills (oil/gas). To address potential project impacts, the project work has been designed to avoid and protect existing trees to the extent

\(^2\) The eucalyptus trees proposed to be removed are not considered to be suitable wintering/roosting sites for monarch butterflies per Dudek, Biological Assessment (November 2017). There is a suitable wintering eucalyptus grove within the west portion of the park, however this eucalyptus grove is outside of the project area approximately 250 feet to the west. No impacts to this grove are proposed.
possible; minimize disruption to the stream channel; prevent disturbance of protected amphibians, reptiles, birds, fish, mammals and invertebrates through pre-construction surveys, avoidance, and relocation as permitted; and implement a storm water pollution management plan.

An on-site environmental coordinator is also proposed to monitor project construction to ensure that all protective measures are being implemented, including compliance with all City, State and Federal permits. The onsite environmental coordinator will be responsible for training all staff, contractors and sub consultants regarding the sensitivity of the creek environment, the purpose of the restoration, non-native and native plants on site, wildlife likely to be encountered, and the best management practices to be followed.

Ultimately, the restoration of native riparian habitat would create a wider, more diverse riparian zone, reduce stream bank erosion, benefit water quality, and improve food and shelter availability for birds, wildlife and aquatic organisms. As designed, the project would have less than significant temporary construction-related, and permanent impacts, to native habitat and special status plant and wildlife species. However, the project habitat restoration would have beneficial long-term effects to habitat and wildlife species.

B. HYDROLOGY AND WATER QUALITY

The City Master Environmental Assessment (MEA) Map for Flood Zones 2015 indicates portions of the Arroyo Burro Creek corridor through the project site are in the AE floodway and 100- and 500- year floodplain zones. The project is designed to correct eroding creek banks and reestablish floodplain terraces to reduce stream energy and downstream flood elevations. The project will remove debris such as metal and concrete from the channel, increase the area of the floodplain, and install bank stabilization and native plantings, thereby improving the creek hydrology. A hydrologic evaluation was prepared by Waterways Consulting, Inc. (Lower Arroyo Burro Creek Restoration Project 65% Design Report, February 26, 2018) and reviewed by the City Floodplain managers. The report concludes that the project’s expanded floodplain areas would allow for enhanced floodplain storage during large rain events which may attenuate downstream flood peaks. The analysis identifies that the restoration project site is hydraulically well-suited for further enhancement of floodplain function, which would help reduce channel velocities and lower water surface profiles within the project reach.

If left untreated, the creek channel would continue to erode into the high terraces, resulting in increased downstream sedimentation and degraded floodplain functions (Waterways Consulting, Inc., 65% Design Report). The removal of debris from the channel, reconfiguration of the floodplain, and installation of bank stabilization and native plantings would improve creek water quality by improving sediment filtration and nutrient uptake. City Best Management Practices for water quality protection would be implemented during grading and restoration activities. The project would not result in significant short-term or long-term adverse impacts to drainage or water quality, and would have substantial beneficial effects.
C. NOISE

The project would not increase long-term ambient noise or change the land use on the site, however the project would involve short-term temporary construction noise. Temporary construction noise may result in a significant impact when project construction is lengthy in duration (typically longer than one year), or involves extensive subsurface excavation or pile driving, and is in close proximity to noise-sensitive uses.

Residential land uses are considered noise-sensitive uses. The nearest residential uses at each end of the project site are located approximately 235 feet to the south (Alan Road neighborhood) and approximately 230 feet to the north (Stone Creek condominiums). The average ambient background noise level in the park and residential areas is in the range of 60-70 dBA Ldn, primarily due to vehicle traffic noise on Las Positas Road. Project grading work in Area 1 closest to the Allen Road neighborhood is estimated at one week. Grading work in Areas 8 and 9 closest to the Stone Creek neighborhood is estimated at three to four weeks, with additional heavy vehicle travel to access other work areas.

Temporary construction noise from heavy equipment and vehicles is intermittent and variable through the work period in duration and loudness, but may reach up to 85 dBA Leq (noise level at the time the noise is occurring) at a distance of 50 feet from the source. Loudness diminishes at a rate of 6 db with each doubling of distance. Intervening vegetation and structures such as fences, walls and buildings, further reduce the noise level at the receptor. It is estimated that noise levels at a 230 foot distance from the closest project grading operations could reach levels of up to 70 dBA Leq or more for short periods at the closest residences, and would be audible over ambient noise levels.

Noise from a heavy truck traveling at 15 mph is estimated at 65 dBA Leq at a distance of 50 feet. Homes are located at an average distance of 52 feet from the road on either side of Alan Road, and the noise from the truck trips would be audible over ambient noise levels. The total drive down Allen Road would take approximately 1 ½ minutes, and about four seconds to pass each house. This would occur for up to 25 round trips per weekday over a period of up to six weeks.

Because of its temporary and intermittent nature, short-term construction-related noise of less than one year in duration occurring during the day would not involve the potential for substantial health effects such as hearing loss, and is considered nuisance noise and an adverse but not significant environmental impact. However, to reduce the nuisance to the residences, the project proposes limiting the truck trips along Allen Road to occur only between the hours of 10:00 a.m. and 3:00 p.m.

D. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) DETERMINATION

The City environmental analyst determined that the creek habitat restoration project description qualifies for categorical exemption from CEQA under several categories:

- §15333, Class 33 Habitat Restoration exemption category, for a project of less than five acres for the maintenance, restoration, enhancement, or protection of habitat for fish, plants, or wildlife. The project entails creek bank, wetland, and riparian habitat restoration, including revegetation of disturbed areas with native plant species.
§15301(i), Class 1 Existing Facilities exemption category for repair, maintenance, and minor alteration of existing topographic features, existing wildlife habitat areas, and stream channels (clearing of debris). The project involves no expansion of an existing use.

§15307, Class 7 Agency Action for Protection of Natural Resources exemption category. The project would be funded by the City of Santa Barbara with matching funds from the California Department of Fish and Wildlife and California Coastal Conservancy.

The CEQA preliminary review confirmed that the project would not result in significant environmental impacts. Measures incorporated in the project, City ordinance requirements, City standard conditions, and regulatory provisions of State resources agencies would minimize potential adverse but less than significant environmental effects. The preliminary review also confirmed that the project would meet additional Class 33 exemption criteria, and that none of the exceptions to use of categorical exemptions apply.

The project is exempt from further environmental review under the provisions of CEQA.

VIII. DESIGN REVIEW

This project was reviewed by the Architectural Board of Review on March 12, 2018 (ABR Minutes, Exhibit G). On March 12, 2018, the ABR stated that project includes an appropriate amount of landscaping and the compatibility analysis criteria had been satisfied.

IX. FINDINGS

The Planning Commission finds the following:

A. COASTAL DEVELOPMENT PERMIT (SBMC §28.44.150)

1. The project is consistent with the policies of the California Coastal Act because it would improve native riparian vegetation, wildlife habitat, and low cost coastal recreational uses in the City, and maintain public access trails as described in Section VI of the Staff Report.

2. The project is consistent with all applicable policies of the City's Local Coastal Plan, all applicable implementing guidelines, and all applicable provisions of the Code because the project would improve native riparian vegetation and wildlife habitat. The water quality in the creek watershed will also be improved. The project would restore four acres and 1,400 linear feet of the creek which is degraded, eroded and populated with non-native plant species. Man-made debris including metal and concrete would be removed from the creek bed. New floodplain terraces would be created. Three acres of native riparian floodplain habitat would be created as well as one acre of native plantings in the oak woodland area. The creek site would be re-vegetated with approximately 7,500 native plans including 550 trees as described in Section VI of the Staff Report.

Exhibits:

A. Conditions of Approval
B. Site Plan
C. Applicant's Letter, dated April 5, 2018
D. Applicant’s Habitat Preservation, Restoration, Maintenance and Monitoring Plan, March 2018
E. Waterways Consulting, Inc., 65% Design Report, February 26, 2018
F. Dudek, Arroyo Burro Open Space Restoration Biological Site Assessment, November 2017
G. ABR Minutes, March 12, 2018
I. In consideration of the project approval granted by the Planning Commission, the following terms and conditions are imposed on the use, possession, and enjoyment of the Real Property:

A. Order of Development. In order to accomplish the proposed development, the following steps shall occur in the order identified:

1. Submit an application for and obtain a Building Permit (BLD) to perform grading. Comply with condition E “Project Implementation Requirements.”
2. Submit an application for and obtain a Public Works Permit (PBW) for all required public improvements and complete said improvements.
3. Submit an application for a Building/Flood Development Permit.
4. Submit an application for a potable water meter and a recycled water meter.
5. Obtain and submit copies of permits from Army Corps of Engineers, Regional Water Quality Control Board and California Fish and Wildlife Department, as required.

B. Conditions Agreement. In the design, construction and operation of the project, the City shall comply with the following conditions:

1. Approved Development. The development of the Real Property approved by the Planning Commission on May 3, 2018 is limited to a site of approximately four-acres including 1,400 linear feet of Arroyo Burro Creek within the Arroyo Burro Open Space Park. The project includes removal of debris from the creek channel, grading floodplain benches, stabilizing eroding banks, removal of exotic and invasive vegetation and revegetating the site with native plants and trees, and the improvements shown on the plans signed by the chairperson of the Planning Commission on said date and on file at the City of Santa Barbara.
2. Uninterrupted Water Flow. The Creeks Division shall allow for the continuation of any historic flow of water onto the Real Property including, but not limited to, swales, natural watercourses, conduits and any access road, as appropriate.
3. Landscape Plan Compliance. The Creeks Division shall comply with the Landscape Plan approved by the Architectural Board of Review (ABR). Such plan shall not be modified unless prior written approval is obtained from the ABR. The landscaping on the Real Property shall be provided and maintained in accordance with said landscape plan, including any tree protection measures.
4. Pesticide or Fertilizer Usage Near Creeks. The use of pesticides or fertilizer shall be prohibited within the project area, which drains directly into Arroyo Burro Creek except as approved by the State Water Resources Control Board, California Department of Fish & Wildlife, and the Santa Barbara Integrated Pest Management Advisory Committee.
5. **Recycled Water Use Requirements.** The State Water Resources Control Board, Division of Drinking Water (DDW), the Central Coast Regional Water Quality Control Board (RWQCB) and the Santa Barbara County Department of Environmental Health (SBCDEH) (“Regulatory Agencies”) regulate the use of recycled water. The Creeks Division shall abide by all statutes and regulations regarding recycled water use as set forth by the Regulatory Agencies and as may be subject to change from time to time. The Public Works Department, at its sole cost and expense, shall operate and maintain all facilities required for the use of recycled water on the Site.

C. **Design Review.** The project, including public improvements, is subject to the review and approval of the Architectural Board of Review (ABR). The landscape plan shall incorporate any mitigations and avoidance and minimization measures called out in the Arroyo Burro Open Space Creek Restoration Project Habitat Preservation, Restoration, Maintenance and Monitoring Plan, Erin Markey, April 2018, and the Memorandum to Jill Zachary, City Parks and Recreation Director, dated February 20, 2018 and approved by the Parks and Recreation Director on February 22, 2018 (Memorandum) addressing tree protection and replacement and shown on the plans approved by the Planning Commission on May 3, 2018. Landscaping under the trees shall be compatible with the preservation of the trees, as determined by the ABR.

D. **Requirements Prior to Permit Issuance.** The City shall submit the following, or evidence of completion of the following, for review and approval by the Department listed below prior to the issuance of any permit for the project. Please note that these conditions are in addition to the standard submittal requirements for each department.

1. **Public Works Department.**
   a. **Approved Public Improvement Plans.** Public Improvement Plans shall be submitted to the Public Works Department for review and approval.
   b. **Haul Routes Require Separate Permit.** Apply for a Public Works permit to establish the haul route for all project-related trucks with a gross vehicle weight rating of three tons or more entering or exiting the site.
   c. **Project-Related Truck Trips.** Project-related truck trips for trucks with a gross vehicle weight rating of three tons or more shall not be scheduled during peak hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) in order to help reduce truck traffic on adjacent streets and roadways. Truck trips shall be scheduled from 10:00 a.m. to 3:00 p.m. No more than 25 haul trucks shall be permitted per day.
   d. At submittal for Building Permit, show the floodplain and floodway boundaries on the Site Plan.

2. **Community Development Department.**
   a. Inclusion of Avoidance and Minimization Measures. The project shall incorporate all General and Project-Specific Avoidance and minimization
measures as well as all appropriate species-specific avoidance and minimization efforts as identified in the Final Arroyo Burro Open Space Restoration Biological Site Assessment, Dudek, November 2017 and in the Arroyo Burro Open Space Creek Restoration Project Habitat Preservation, Restoration, Maintenance and Monitoring Plan, Erin Markey, April 2018, and the Memorandum to Jill Zachary, City Parks and Recreation Director, dated February 20, 2018 and approved by the Parks and Recreation Director on February 22, 2018 (Memorandum) addressing tree protection and replacement and shown on the approved plans dated May 3, 2018, in addition to City guidelines and ordinance procedures for implementing City policies.

b. **Regulatory Agencies.** Permits issued for the project activities affecting biological resources and creek flow and associated measures identified in these permits shall be incorporated into the project.

c. **Project Environmental Coordinator Required.** The City’s Project Environmental Coordinator (PEC) shall be responsible for assuring full compliance with the provisions of all Conditions of Approval pertaining to environmental resource protections, including but not limited to air quality, noise, tree protections, as well as biological and archeological resource area protections.

d. **Requirement for Archaeological Resources.** The following information shall be printed on the grading plans if no grading plan:

If archaeological resources are encountered or suspected, work shall be halted or redirected immediately and the Planning Division shall be notified. A project archaeologist shall assess the nature, extent, and significance of any discoveries and develop appropriate management recommendations for archaeological resource treatment. Measures to protect any important resources shall be implemented, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List, documentation and collection of resources, etc.

If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission and consultation with a Barbareño Chumash representative.

If the discovery consists of possible prehistoric or Native American remains, or important artifacts or other materials, a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of
the find. Work in the area may only proceed after the Planning Division grants authorization.

e. **Tree Removal and Replacement.** The existing trees to be removed as listed and mapped in the Memorandum to Jill Zachary, City Parks and Recreation Director, dated February 20, 2018 and approved by the Parks and Recreation Director on February 22, 2018 (Memorandum) and shown on the plans approved May 3, 2018 shall be replaced on-site according to the restoration plans approved May 3, 2018 in order to maintain the site’s visual appearance and reduce the impacts resulting from the loss of trees.

f. **Tree Protection.** All trees not indicated for removal pursuant to the Memorandum and shown on the approved site plan/landscape plan shall be preserved, protected, and maintained, in accordance with the Memorandum and landscape plans/grading plans, and/or any related Conditions of Approval. Relocated trees shall also be fenced and protected during construction.

g. **Habitat Maintenance and Monitoring Plan.** Habitat protection, site maintenance, performance criteria, monitoring and reporting shall be consistent with the Arroyo Burro Open Space Creek Restoration Project Habitat Preservation, Restoration. Maintenance and Monitoring Plan, Erin Markey, March 2018.

h. **Protected Trees.** The following additional provisions shall apply to existing trees to be protected on site:

(1) No irrigation system shall be installed within three feet of the dripline of any oak tree.

(2) Oak trees greater than four inches (4”) in diameter at four feet (4’) above grade removed as a result of the project shall be replaced according to the landscaping plan, from South Coastal Santa Barbara County Stock.

(3) The use of herbicides or fertilizer shall be prohibited within the drip line of any oak tree.

(4) No storage of heavy equipment or materials, or parking shall take place within five (5) feet of the dripline of any oak tree.

(5) All protected trees within 25 feet of proposed construction activity shall be fenced three feet outside the dripline for protection.

(6) The Project Environmental Coordinator shall be present during any excavation beneath the driplines of the trees which are required to be protected. All excavation within the driplines of the trees shall be minimized and shall be done with hand tools.
(7) Any roots encountered shall be cleanly cut and sealed with a tree-seal compound.

(8) Any root pruning and trimming shall be done under the direction of a qualified Arborist.

(9) Oak seedlings and saplings less than four inches (4”) at four feet (4’) above the ground that are removed during construction shall be transplanted where feasible. If transplantation is not feasible, replacement trees shall be planted at a minimum one to one (1:1) ratio. Replacement trees shall be a minimum of one (1) gallon size derived from South Coastal Santa Barbara County stock.

i. **Tree Protection Monitoring.** The Project Environmental Coordinator shall monitor all work near protected trees during project implementation.

j. **Contractor and Subcontractor Notification.** The Creeks Division shall notify in writing all contractors and subcontractors of the site rules, restrictions, and Conditions of Approval. Submit a draft copy of the notice to the Planning Division for review and approval.

k. **Design Review Requirements.** Plans shall show all design, landscape and tree protection elements, as approved by the Architectural Board of Review as outlined in Section C “Design Review,” and all elements/specifications shall be implemented on-site.

l. **Conditions on Plans/Signatures.** The final Resolution shall be provided on a full size drawing sheet as part of the drawing sets. Each condition shall have a sheet and/or note reference to verify condition compliance. If the condition relates to a document submittal, indicate the status of the submittal. A statement shall also be placed on the sheet as follows: The undersigned have read and understand the required conditions, and agree to abide by any and all conditions which are their usual and customary responsibility to perform, and which are within their authority to perform.

Signed:

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E. **Project Implementation Requirements.** All of these requirements shall be carried out in the field by the City and/or Contractor for the duration of the project.
1. **Neighborhood Notification Prior to Project Initiation.** At least twenty (20) days prior to commencement of vegetation removal and grading, the applicant/contractor shall provide written notice to all property owners, businesses, and residents within 300 feet of the project area. The notice shall contain a description of the project, the construction schedule, including days and hours of construction, the name and phone number of the Project Environmental Coordinator (PEC) and Contractor, site rules and Conditions of Approval pertaining to construction activities, and any additional information that will assist Building Inspectors, Police Officers and the public in addressing problems that may arise during construction.

2. **Pre-Project Initiation Conference.** Not less than 10 days or more than 20 days prior to commencement of construction, a conference to review site conditions, construction schedule, construction conditions, and environmental monitoring requirements, shall be held by the General Contractor. The conference shall include representatives from the Public Works Wastewater and Water Resources Divisions, Transportation Division, Parks and Recreation Department and Creeks Division, Community Development Department, Building and Planning Divisions, Landscape Architect, Biologist, Hydrologist, Project Engineer, Project Environmental Coordinator, Contractor and each Subcontractor.

3. **Project Contact Sign.** Immediately after grading permit issuance, signage shall be posted at the park entry that list the contractor (PEC’s) name, telephone numbers, work hours, site rules, and project work-related conditions. The font size shall be a minimum of 0.5 inches in height. Said sign shall not exceed six feet in height from the ground if it is free-standing or placed on a fence. It shall not exceed 24 square feet. Creeks Division shall check periodically that signage is legible.

4. **Project Work Hours.** Project work (including preparation for construction work) shall only be permitted Monday through Friday between the hours of 7:00 a.m. and 5:00 p.m. with the exception of truck export of soil which is limited to the hours of 10:00 a.m. and 3:00 pm. No project work shall be done on weekends or the following holidays:

   - **New Year’s Day**
   - **Martin Luther King, Jr. Day**
   - **Presidents’ Day**
   - **Memorial Day**
   - **Independence Day**
   - **Labor Day**
   - **Thanksgiving Day**
   - **Following Thanksgiving Day**
   - **Christmas Day**

   - **January 1st***
   - **3rd Monday in January**
   - **3rd Monday in February**
   - **Last Monday in May**
   - **July 4th***
   - **1st Monday in September**
   - **4th Thursday in November**
   - **Friday following Thanksgiving Day**
   - **December 25th***

   *When a holiday falls on a Saturday or Sunday, the preceding Friday or following Monday, respectively, shall be observed as a legal holiday.
When, based on required work type or other appropriate reasons, it is necessary to do work outside the allowed, contractor shall contact the City to request a waiver from the above construction hours, using the procedure outlined in Santa Barbara Municipal Code §9.16.015 Construction Work at Night. Contractor shall notify all residents within 300 feet of the parcel of intent to carry out said construction a minimum of 48 hours prior to said construction. Said notification shall include what the work includes, the reason for the work, the duration of the proposed work and a contact number.

5. **Staging Area.** Prior to issuance of grading permit, provide note on Plan Sheet, “All equipment and materials shall be stored in designated staging/materials storage areas as shown on plans and not located over the water main.”

6. **Wetland and Riparian Protection.** All construction-related activities, including, but not limited to construction, storage areas, staging areas, and access routes shall be located at a maximum distance away from riparian habitat associated with Arroyo Burro, when possible. In locations where the construction activities encroach within this buffer, it is important to provide further protection to riparian vegetation and the wetland and aquatic habitats of Arroyo Burro to the greatest extent possible and implement Stormwater Pollution Management Plan measures (i.e., BMPs placement inside of the construction fencing) to protect wetland and riparian resources.

   a. The contractor shall establish a temporary barrier around staging areas and work areas to delineate work boundaries and prevent entrance into non-impact areas. The temporary barrier shall use highly visible construction fencing to ensure that trees and other vegetation outside of work areas are avoided during construction.

   b. When sizeable construction equipment is working near riparian vegetation, it is highly encouraged that flaggers are utilized to assist in equipment positioning to avoid impacts to non-impact riparian areas. (Dudek, BIO-5)

7. **Water Diversion/Dewatering Plan and Implementation.** Prior to the start of construction, the water diversion/dewatering plan shall be implemented as prepared to avoid and minimize impacts to special-status species and aquatic resources when the construction site is dewatered. Implementation of best management practices to prevent erosion and sedimentation during and after construction, and procedures for containing, cleaning up spills shall occur as identified. If special-status species are observed during pre-construction surveys the appropriate agencies (USFWS, NOAA NMFS, CDFW) shall be contacted immediately to discuss properly relocation of the species. (Dudek, BIO-3)

8. **Stormwater Pollution Prevention Plan (SWPPP).** Prior to the start of construction the applicant shall implement the approved SWPPP to minimize the potential for discharge of pollutants into habitat areas during construction activities. The contractor shall follow specifications, installation requirements, and locations of
BMPs to control sediment, coarse particles, concrete, and other materials exposed during construction and drilling to protect aquatic, wetland, and riparian habitats adjacent to construction site. Erosion control measures shall be installed to prevent runoff of these materials into Arroyo Burro. Silt fencing, straw bales, and/or sand bags shall be used in conjunction with other methods to prevent turbid waters from entering the creek. During construction activities, washing of concrete or equipment shall occur only in areas where polluted water and materials can be contained for subsequent removal from the site. Washing shall not be allowed in locations where the tainted water could enter Arroyo Burro. The SWPPP installation shall include both structural and non-structural best management practices (BMPs) including straw wattles around storm drains, silt fencing and or other physical controls to diver flows from exposed soil, spill prevention methods, and clean housekeeping methods for storing and refueling machinery. The Environmental Coordinator shall monitor the site’s SWPPP measures prior to the start of construction and throughout the duration of construction to ensure they continue to function properly. (Dudek, BIO-4)

9. **Habitat Preservation, Restoration, Maintenance and Monitoring Plan (HPRMMP).** The applicant shall implement all measures identified in the HRRMMP prepared by Erin Markey, dated March 2018, including habitat protection and avoidance measures as well as reporting requirements to all governing agencies. Shall other governing agencies require additional measures, those measures shall be incorporated into the HPRMMP and a copy provided to the Planning Division.

10. **Workers Educational Training.** Prior to the initiation of any site disturbance and/or construction activities, all personnel associated with the project shall attend a worker education training program conducted by a qualified biologist that covers the project limits, habitat preference(s), occupied habitat in the area, life histories, protection measures, potential direct and indirect construction impacts, law and regulations, consequences of non-compliance with those laws and regulations and a contact person (i.e. construction manager, biological monitor, and City’s Project manager) in the event that protected biological resources are affected. (Dudek, BIO-15)

11. **Pedestrian Pathway.** The upper western loop of the existing pedestrian path within the park shall remain accessible to park users at all times during the creek restoration project.

12. **Floristic Surveys.** Focused floristic surveys for special-status plant species shall be conducted on the project site in accordance with USFWS, CDFW, and CNPS guidelines. Floristic guidelines indicate that surveys are required to occur in the time(s) that plants are in identifiable condition; often, flowers and/or fruit are necessary for correct identification. Based on the blooming period of the special-status plant species with potential to occur, two survey passes would be required to observe the spring and summer blooming periods (one in April and one in June). All blooming plants encountered during the surveys shall be identified to subspecies or
variety, if applicable, to determine the sensitivity status. (Dudek, November 2017, Arroyo Burro Open Space Restoration Biological Site Assessment, BIO-1).

13. **Nesting Birds.** Birds and their eggs nesting on or near the project site are protected under the Migratory Bird Treaty Act and pursuing, hunting, taking, capturing, killing, or attempt to do any of the above is a violation of federal and state regulations, unless take permits are issued. No trimming or removing brush or trees shall occur if nesting birds are found in the vegetation. All care shall be taken not to disturb the nest(s). Removal or trimming may only occur after the young have fledged from the nests.

a. **Pre-Construction Nesting Bird Survey.** A pre-construction survey for nesting birds shall be conducted by a qualified biologist to determine if active nests of special-status birds, or common bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code, are present in the construction zone or within 300 feet of the construction zone for the entire length of the Project site. The survey shall be conducted within one week prior to construction or site preparation activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically March 1 through August 30). (Dudek, BIO-6)

b. **Nesting Bird Buffers and Requirements.** If active nests are found, a no-construction buffer shall be established at a minimum of 100-foot (this distance may be greater depending on the bird species and construction activity, as determined by the biologist) around the nest site where it overlaps with work areas. Clearing and construction within no-construction buffer shall be postponed or halted, at the discretion of the biologist, until the nest is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. In addition, all active nests shall be mapped with a GPS unit and nest locations with 100-foot buffers overlain on aerial photographs to provide regular updated maps to inform the Project manager/engineer and construction crew of areas to avoid. The City-appointed biologist shall also serve as a construction monitor during the breeding season to ensure that there are no inadvertent impacts to nesting birds. (Dudek, BIO-7)

14. **Southern Western Pond Turtle Surveys and Avoidance.** Prior to initiation of construction activities, focused surveys shall be conducted in aquatic habitat for western pond turtle. A minimum of four daytime surveys shall be conducted between April 1 and June 1. The survey schedule may be adjusted to reflect the existing weather or stream conditions. If western pond turtles are detected in or adjacent to the project, nesting surveys shall be conducted within the project footprint in suitable upland habitats within 1,300 feet of occupied aquatic habitat. A qualified biologist shall conduct focused, systematic surveys for western pond turtle nesting sites. Surveys will entail searching for evidence of pond turtle nesting, including remnant eggshell fragments, which may be found on the ground following nest depredation.
If a western pond turtle nesting area is found on site and would be adversely impacted by construction activities, the Applicant shall avoid the nesting area. If avoidance of the nesting area is determined to be infeasible, the authorized biologist shall coordinate with CDFW to identify whether it is possible to relocate the pond turtles. Eggs or hatchlings shall not be moved without written authorization from CDFW. (Dudek, BIO-8)

15. **California Legless Lizard, Coast Patch-Nosed Snake, and Two-Striped Gartersnake Surveys and Avoidance.** Pre-construction surveys for California legless lizard, coast patch-nosed snake, and two-striped gartersnake shall be conducted 30 days prior to the initiation of Project activities. Subject species of surveys may vary depending on timing and species’ activity patterns. At any time of year when Project activities are initiated, pre-construction surveys for California legless lizard shall be conducted in riparian habitats and areas with loose sand, coast patch nosed snake in open grassland, coastal sage scrub, and open chaparral habitats, and two-striped gartersnake in streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools. If these species are observed, a salvage and relocation plan would be implemented to allow a qualified biologist to capture and relocate the species away from ground disturbance and into protected open space. These survey and reporting measures are often a condition of the CDFW’s Streambed Alteration Agreement (SAA). (Dudek, BIO-9)

16. **Pre-Construction Bat Roosting Survey.** Conduct a preconstruction survey for roosting bats within 30 days of disturbance to existing trees. If roosting bats are present, appropriate avoidance measures shall be implemented to ensure that no impacts to roosting bats occur. (Dudek, BIO-10)

17. **Geotechnical Oversight.** An engineering geologist shall provide geotechnical and geologist oversight during the proposed bank repair process along the creek.

18. **Recycling Materials.** Concrete and pipe and wire shall be recycled if salvageable. Other debris that is not recyclable shall be disposed of at a suitable legal disposal site.

19. **Waste Material.** The contractor shall dispose of all project debris and waste materials in a safe and legal manner. Contractor shall not burn or bury waste materials on the project site. No dirt, refuse, excavated material, surplus mortar or any associated washings shall be disposed of on-site, onto City streets or into City manholes or storm drain systems.

20. **Air Quality and Dust Control.** The following measures shall be shown on grading and building plans and shall be adhered to throughout grading, hauling, and construction activities:

   a. During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning
and after work is completed for the day. Increased watering frequency shall be required whenever the wind speed exceeds 15 mph. Reclaimed water shall be used whenever possible.

b. Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.

c. If importation, exportation and stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.

d. Gravel pads shall be installed at all access points to prevent tracking of mud onto public roads.

e. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders so that dust generation will not occur.

f. The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include all periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to land use clearance for map recordation and land use clearance for finish grading of the structure.

g. All portable diesel-powered construction equipment shall be registered with the state’s portable equipment registration program OR shall obtain an APCD permit.

h. Fleet owners of mobile construction equipment are subject to the California Air Resource Board (CARB) Regulation for In-use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, § 2449), the purpose of which is to reduce diesel particulate matter (PM) and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles. For more information, please refer to the CARB website at www.arb.ca.gov/msprog/ordiesel/ordiesel.htm.

i. All commercial diesel vehicles are subject to Title 13, § 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.

j. Diesel construction equipment meeting the California Air Resources Board (CARB) Tier 1 emission standards for off-road heavy-duty diesel engines shall be used. Equipment meeting CARB Tier 2 or higher emission standards should be used to the maximum extent feasible.
k. Diesel powered equipment should be replaced by electric equipment whenever feasible.

l. If feasible, diesel construction equipment shall be equipped with selective catalytic reduction systems, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California.

m. Catalytic converters shall be installed on gasoline-powered equipment, if feasible.

n. All construction equipment shall be maintained in tune per the manufacturer’s specifications.

o. The engine size of construction equipment shall be the minimum practical size.

p. The equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.

21. **Sewer Infrastructure.**
   a. Prior to issuance of grading permit, add note to Plan Sheet, “Protect sewer infrastructure during construction and restore to previous condition.”
   b. Prior to start of grading, Contractor shall stake out sewer alignment.
   c. Prior to issuance of grading permit, add note to Plan Sheet, “No trees shall be placed within 3-feet of the sewer main or sewer structures to prevent issues for sewer maintenance in the future and to minimize disturbance to newly planted vegetation.”
   d. Prior to start of grading, Contractor shall verify dimensions of exposed metallic pipe and protect in place. (This pipe may be a host pipe for a section of 15-inch PVC.)

22. **Equipment Routing On-Site.** To protect root zones of existing oak trees at the north end of the project site, equipment shall be routed on the existing upper portion of the loop path to access project areas 6-9.

F. **General Conditions.**

1. **Compliance with Requirements.** All requirements of the City of Santa Barbara and any other applicable requirements of any law or agency of the State and/or any government entity or District shall be met. This includes, but is not limited to, the Endangered Species Act of 1973 [ESA] and any amendments thereto (16 U.S.C. § 1531 et seq.), the 1979 Air Quality Attainment Plan, and the California Code of Regulations.

2. **Approval Limitations:**
q. The conditions of this approval supersede all conflicting notations, specifications, dimensions, and the like which may be shown on submitted plans.

r. All restoration work, staging areas, existing pedestrian access, pedestrian path shall be located substantially as shown on the plans dated May 3, 2018, approved by the Planning Commission.

s. Any deviations from the project description, approved plans or conditions must be reviewed and approved by the City, in accordance with the Planning Commission Guidelines. Deviations may require changes to the permit and/or further environmental review. Deviations without the above-described approval will constitute a violation of permit approval.

3. **Site Maintenance.** The project site shall be maintained and secured during the grading and revegetation work.

II. **NOTICE OF COASTAL DEVELOPMENT PERMIT TIME LIMITS:**

The Planning Commission action approving the Coastal Development Permit shall expire two (2) years from the date of final action upon the application, per Santa Barbara Municipal Code §28.44.230, unless:

1. Otherwise explicitly modified by conditions of approval for the coastal development permit.

2. A Building permit for the work authorized by the coastal development permit is issued prior to the expiration date of the approval.

3. The Community Development Director grants an extension of the coastal development permit approval. The Community Development Director may grant up to three (3) one-year extensions of the coastal development permit approval. Each extension may be granted upon the Director finding that: (i) the development continues to conform to the Local Coastal Program, (ii) the applicant has demonstrated due diligence in completing the development, and (iii) there are no changed circumstances that affect the consistency of the development with the General Plan or any other applicable ordinances, resolutions, or other laws.
Exhibit B: The site plan for 1425 and 601 Las Positas Road has been distributed separately.

A copy of the plans is available for viewing at the Planning and Zoning Counter, 630 Garden Street, Santa Barbara, CA between the hours of 8:30 A.M and 4:30 P.M. Monday through Thursday, and every other Friday. Please check our website under City Calendar to verify closure dates.
April 5, 2018

City of Santa Barbara
Community Development Department
Planning Division
630 Garden Street
Santa Barbara, CA 93101

SUBJECT: Master Application for Creek Restoration at the Arroyo Burro Open Space Park

Attached is the Creeks Division’s Master Application for the restoration of the creek side portion of the Arroyo Burro Open Space Park. The Creeks Division is seeking a Coastal Development Permit (CDP) and CEQA review for creek restoration activities on the four parcels that make up the Arroyo Burro Open Space Park. The four city owned parcels (047-010-064, 047-010-009, 047-010-065, & 047-061-026) that comprise the open space park total 20.9 acres and contain approximately 1,700 linear feet of Arroyo Burro. The southern portion of the project site is within the appealable jurisdiction of the Coastal Zone.

Project Background and Development

Restoration of this portion of Arroyo Burro is a priority project for the Creeks Division. The proposed project is a restoration priority because the project site is degraded in terms of water quality and wildlife habitat. The historic riparian corridor has been greatly reduced in size due to channel incision and lack of access to floodplain habitat. In addition, a number of invasive plants have colonized disturbed areas within the riparian zone. The primary goals of the project are to restore natural stream function through the creation of floodplain habitat, improve aquatic and terrestrial wildlife habitat, improve water quality, and provide educational opportunities concerning restoration and water quality issues. The Creeks Division has received a $550,000 grant from the State Coastal Conservancy, and an additional $550,000 grant from the California Department of Fish and Wildlife for restoration of this portion of Arroyo Burro.

Development of the project included extensive review and participation by the Park and Recreation Commission, the Creeks Advisory Committee, as well as community meetings with stakeholder groups and members of the public. Beginning in October 2016, a number of public meetings were held and presentations were given to solicit public input on the project. Prior to design development a community meeting was held at the Open Space Park on October 18, 2016, and a separate stakeholder group meeting was held on October 19, 2016, to give community members and stakeholder groups an opportunity to voice what they would like to see included in the future restoration project. Over
the last year, various restoration options were investigated. Draft preliminary
design plans for the restoration project were completed in May 2017. Additional
public meetings were held on June 7 and 8, 2017. In addition the preliminary
plans were presented at the Creeks Advisory Committee meeting on July 19,
2017, and the Parks and Recreation Commission meeting on July 26, 2017. The
preliminary plans have been revised to reflect the input and comments received
at these public meetings. Overall, the various committees, commissions and
members of the public expressed overwhelming support for the project.

The planned creek restoration efforts would further improve conditions in the
watershed, building upon several other restoration and water quality
improvement projects undertaken in the watershed by the Creeks Division,
including the restoration of Mesa Creek and the Arroyo Burro Estuary,
Restoration of Upper Las Positas Creek at the Municipal Golf Course, and the
recently completed Upper Arroyo Burro Restoration Project at Barger Canyon.

Project Description
The proposed 4 acre restoration project is focused on the creek corridor within
the Open Space Park. The project will restore 1,400 linear feet of Arroyo Burro
which is currently in a degraded state with areas of significant erosion, deeply
incised creek banks, un-natural hard features, debris within the creek channel
and numerous non-native invasive species. The restoration project will create a
wider more diverse riparian zone, reduce stream bank erosion, and re-establish
floodplain connectivity. The total project disturbance area is 3 acres, and will be
permanently restored with a diverse assortment of local native riparian plants.
The total restoration project area is 4 acres, as an additional acre of creek side
and understory habitat will also be planted with native container plants to improve
habitat diversity and native vegetation cover at the site.

Key components of the restoration project include:
- Removal of all un-natural hydrologic features including 60 tons of
crunch, 320 linear feet of pipe and wire revetment and other debris,
- Re-grading portions of the stream channel to increase meanders and
improve access to over an acre of floodplain habitat,
- Restoration of eroding creek banks through the installation of bio-technical
methods of bank stabilization along 500 feet of creek banks,
- Removal of non-native vegetation, including 9 eucalyptus trees, arundo,
caster bean periwinkle, English ivy and cape ivy.
- Restoration of a diverse community of native riparian and upland plants,
- Protection and avoidance of existing trees and vegetation through
temporary exclusion fencing
- Instillation of temporary biodegradable erosion control measures including
coconut blanket, sterile rice straw mulch and straw wattles.

- Installation of over 7,500 locally sourced native container plants, native seed, and sterile erosion control seed to restore native habitat and stabilize disturbed areas.
- Installation of a temporary irrigation system (2-3 years) to ensure plants get established.
- Creation of defined access point to the creek with split rail fencing to limit social trail and vegetation trampling. Installation of interpretive signage.

Floodplain terraces and side channels have been designed to be accessed by the two year storm event. Improved floodplain access will reduce stream energy and flood elevations downstream, which will help to reduce future channel incision and bank erosion. Overbank flood flows will provide capture of sediment and nutrients from storm flows and improve infiltration during high flows. A wider more regularly accessed floodplain will also provide greater habitat diversity and widen the riparian zone. Creek water quality will be improved through increased shading, aeration, bio-filtration, and reduced sedimentation.

There will be two temporary construction equipment and material staging areas both on the west side of the creek and no access or staging from the east side of the creek. Proposed staging areas are flat and have no native vegetation. All equipment will be stored, maintained, and fueled a minimum of 50 feet from the creek. Contractor employee parking will be within the proposed staging areas. No equipment or materials will be parked/stored outside these areas. Access to creek restoration areas will be along an existing road/trail through the open space park, along creek banks with minimal native vegetation.

A portion of the upper stream channel will be dewatered using a temporary cofferdam to allow for the toe of the eroding creek bank to be rebuilt without work occurring in the wetted stream channel. Stream flows will be routed around the project work area through a flexible corrugated pipe. Additionally a temporary crossing will be installed to allow construction equipment access across the creek. These features are required for the project to be completed with minimal impacts to the stream channel and aquatic organisms.

Access points have been limited to the minimal number necessary to complete the project. Exclusionary fencing will be used to protect existing trees and areas located outside the project disturbance limit.

A Tree Protection Plan, has been provided (see plan sheets C10-C11). The Existing Tree Table summarizes the existing trees on site and those proposed to be protected or removed within and surrounding the project work area. Tim
Downey the City Arborist, has reviewed and approved the proposed tree protection measures. Project boundary/tree protection fencing will be installed in areas shown on the plans and maintained throughout construction to protect existing trees and vegetation. Orange construction fencing will be installed around the project work areas and/or 5 feet beyond the drip line of existing trees to be preserved, to prevent accidental disturbance of these areas. In the unlikely event a native tree is damaged during construction, the contractor will be fined for any damage to vegetation outside the project limits and required to replace such vegetation in kind.

The project would remove the following trees: nine blue gum eucalyptus (eucalyptus globulus) with trunk diameters at breast height (DBH) of 4, 6, 12, 40, 40, 41, 44, 45, and 54 inches. One 30 inch sycamore (Platanus racemosa) in poor condition will be used as a habitat feature on site, and a 4” sycamore previously shown to be removed will now be protected and preserved as part of the project. There will be no impacts to native Coast Live Oaks (Quercus agrifolia). Additional impacts to native shrubs include 54 native Arroyo Willows (Salix lasiolepis) and 2 blue elderberries (Sambucus nigra ssp caerulea). Where feasible root wads will be avoided or relocated, and above ground branches and trunks will be salvaged and re-used as stakes throughout the creek corridor. See attached Tree Impacts Memorandum which was approved by the Parks and Recreation Director, Jill Zachary for more detailed information.

Once graded the site will be temporarily stabilized with 100% bio-degradable erosion control materials including coconut fiber blankets and straw a wattles until revegetation efforts get established. The project site will be re-vegetated with over 7,500 native container plants, including over 550 trees. The plants will be irrigated for 1-2 years depending on rainfall. The total project disturbance area is 3 acres, and will be permanently restored with a diverse assortment of local native riparian plants. The total restoration project area is 4 acres, as an additional acre of creek side and understory habitat will also be planted with native container plants to improve habitat diversity and native vegetation cover at the site. The Arroyo Burro Open Space Creek Restoration Project Habitat Preservation, Restoration, Maintenance, and Monitoring Plan (February 2018) includes further details about the timing, materials and methods of the project re-vegetation plan. In addition to the maintenance requirements, performance criteria, monitoring methods and reporting requirements. The monitoring and reporting requirements have been included to meet the requirements of state and federal permitting and granting agencies and the recommendations by Dudek in the Biological Site Assessment (2017).

Project activities will take no more than 5 months to complete, and will be implemented in the dry season (July-December). The civil portions of the project involving heavy equipment and grading are expected to take 3 months to
complete. All construction activities within the top of bank will be limited to the period of (July-October). The landscape portion of the project is estimated to take 2 months to complete (November – December). Project phases will include the installation of protective fencing, clearing and grubbing of vegetation, demo and removal of concrete and pipe and wire revetment, installation of the temporary crossing and diversion dam, heavy equipment grading work and sediment movement. Heavy equipment (excavator, backhoe, front-end loader, end dump etc.) activity will be used to complete grading activities and rock placement. Grading of the floodplain terraces will generate approximately 13,000 cubic yards (CY) of material approximately 400 CY of which will be used on site. The rest, approximately 12,600 CY will be hauled off site. The Civil portion of the project will take approximately 3 months to complete. Trucks trips will be limited to no more than 25 trips per day, and trucks will be specified as 20 cubic yard end dump trucks to further minimize the number of truck trips and traffic impacts in the neighborhood. Trucking will take approximately 30 working days to complete assuming 20 truck trips a day. Once initial grading activities and off haul are complete the contractor will focus on finished grading, areas of fill and the removal of the temporary crossing and diversion structures. Once finished grading is complete the landscape contractor will begin working to install the temporary erosion control measures, followed by the installation of the irrigation system, the planting of native container plants, installation of split rail fencing, and interpretive signage. The landscape contractor will primarily use hand tools (shovels, picks, etc) but may choose to use a gas powered trencher or other mechanical piece of equipment to expedite trenching in the irrigation mainline and setting the split rail fencing posts.

The existing site has no habitable structures. No new structures are proposed as part of this application. There is no existing water service to the site. The applicant is requesting two 1 inch water meters be installed as part of the project to provide irrigation to the re-vegetation areas on either side of the creek. Two meters are being requested in order to not run recycled water lines over the creek channel. The east side of the creek is proposed to be irrigated with recycled water and the west side of the creek from a potable line. The two sides of the creek will be monitored for differences in growth and plant survival rates from the two different water sources.

The property is currently zoned Parks and Recreation with an Open Space Park Category. The park is currently open to the public for passive recreation. Public access to the park during construction will be limited to the west side of the open space including the upper loop trail which is outside our project area. The main access road will be fenced to keep the public out of the construction site.

The Creeks Division has applied for all other required federal and state permits including 404 permit from the Army Corp of Engineers, a 401 Certification from
the Regional Water Quality Control Board, and a 1600 permit from the California Department of Fish and Wildlife (CDFW). Permits will be obtained prior to issuance of a building permit. The project is planned to be taken out to bid in May 2018, The construction Contract as well as approval of the grant agreements will be taken to City Council in June 2018, with construction expected to begin in July or August 2018.

The primary goal of the project is to improve wildlife habitat at the site and improve water quality in the Arroyo Burro Watershed.

The following studies and requirements have been incorporated into the project:

The project will not result in any impacts to special status plants. An extensive survey of the vegetation present at the Open Space Park was completed by Dudek in August of 2017. No endangered or threatened plants were encountered as part of this survey effort. If any threatened or endangered plant species are observed during additional spring surveys prior to the onset of construction activities (April and June surveys) they will be fenced and avoided during construction, if necessary project activities will be re-designed to avoid any impacts to identified special status plants.

The project will not result in any impacts to special status wildlife species. An extensive survey of the Open Space Park was completed by Dudek in August of 2017. No threatened, endangered, or species of special concern were encountered during that effort. No listed threatened or endangered species were considered likely to occur on site. The biological site assessment recommended additional focused surveys for species of special concern that have the potential to occur on site, prior to the onset of construction activities to ensure no impacts. Recommendations included surveys for southwestern pond turtle, California legless lizard, two-striped garter snake, coast patch nosed snake, nesting birds and roosting bats. These surveys are scheduled to be completed in (April – July, 2018) if sensitive species are encountered a CDFW approved biological monitor shall be retained to monitor the project and oversee relocation activities associated with the project.

Prior to construction a Storm Water Pollution Prevention Plan (SWMPP) will be designed to be implemented during construction. During construction, silt fencing will be installed to prevent sediment from entering the creek channel and erosion control materials will be stored on site to temporarily stabilize the site in the unlikely event of a dry season rainstorm. Heavy equipment (excavator, backhoe, front-end loader etc.) will be used to complete grading activities and rock placement.

A Phase 1 Environmental Site Assessment and report was prepared by Campbell Geo Inc, in November 2015. The assessment was conducted in
accordance with the Phase 1 site assessment guidelines published by the American Society for Testing and Materials. The report documented no "recognized environmental conditions" on the property, as defined by ASTM E1527-13. The report noted that the property has had a documented, long history of being mostly open space and concluded based on an extensive historical record search, personal interviews and a site survey, did not indicate that significant quantities of hazardous or regulated chemicals were stored, previously used, or disposed on the property.

A detailed project Design Report has been prepared by Waterways Consulting, the project design engineers. The report explains the basis for the proposed design and a detailed hydraulic and hydrologic analysis of the existing and proposed stream channel conditions as well as a no-rise water surface elevation certification. A copy of the report will be provided to the Flood Plain Coordinator for review and approval. The County Flood Control District and the State Flood Control Coordinating Office of our proposed channel alterations and a copy of the design report. Confirmation of these notification will be provided to the City flood plain coordinator as a requirement for building permit issuance.

A Geotechnical analysis and memo was prepared for the project by Earth Systems, 2018. The report recommendations have been incorporated into the project designs as far as the placement of fill on the exposed sewer lines. The project will have no impacts to upland historic landslide zones and will stabilize/improve localized areas of creek bank erosion.

All equipment including generators will have the required air quality equipment (catalytic converters) and be subject to the City of Santa Barbara Standard Air Quality Avoidance and Minimization Measures, as well as the Santa Barbara County Air Pollution Control District’s (APCD) construction requirements.

Noise impacts to adjacent property owners will be avoided by limiting the work hours. No work will be allowed during the weekends or official City holidays. During the weekdays all work will be limited to the hours of 7:00 am to 5:00 pm. Truck hauling trips shall be limited to the hours of 10am-3pm. In addition, all construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers’ muffler and silencing devices.

To avoid traffic impacts, haul routes for large construction equipment (over 3 tons) and a traffic safety plan shall be approved by the Transportation Engineer prior to issuance of a building permit. All construction truck trips will be routed to and from the site outside of the morning and afternoon traffic peak hour to reduce the number of trips occurring during the peak traffic hours. Peak hours are defined as 7-10 am and 3-6 pm. Trucks trips will be limited to no more than 25 trips per day, and trucks will be specified as 20 CY end dump trucks to further
minimize the number of truck trips and traffic impacts in the neighborhood. Trucking will take approximately 30 working days to complete assuming 20 truck trips a day. Trucks transporting fill material to and from the site shall be covered from the point of origin.

During site grading and transportation of fill materials, water sprinkling shall occur or as needed to control dust. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust. Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph.

After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be temporarily stabilized to prevent wind pickup of soil. This may be accomplished by: Seeding and watering until vegetative cover is grown; Spreading of sterile mulch, and installation of erosion control blankets.

No archeological resources are expected to exist within the project area according to the included phase 1 archeological report completed by Dudek in October 2017. The report was reviewed and approved at the Historic Landmarks Commission (HLC) on December 13, 2017. However, if any archeological artifacts, exotic rock (non-native), or unusual amounts of shell or bone are uncovered during any on-site grading, trenching or construction activities, the on-site environmental coordinator will stop work immediately in the area and contact a City-approved archaeologist to evaluate the deposit. The City of Santa Barbara Environmental Analyst would be contacted for review of the archeological find(s).

The project landscape designs and restoration plan are scheduled to be approved by the Architectural Board of Review (ABR) on March 12, 2018. Any feedback or recommendations will be incorporated into the project.

The project site is within a mapped high fire hazard area, the project will remove area of non-native highly flammable vegetation. In addition the project construction activities will be shut down during red flag warning events as required by the City Fire Department during period of high fire risk to limit ignition sources.
Prior to construction, a biologist will perform a nesting bird survey. If any nesting birds are located within 100 feet of the active work site, project construction will be delayed until the birds have fledged. The on-site environmental coordinator (City Creeks Restoration Planner and Creeks Supervisor) will be responsible for monitoring during project construction. If wildlife species are encountered, they will be moved outside the construction site. In the unlikely event special-status species are encountered, construction will be stopped and the proper authorities will be notified. All construction will be conducted during the dry season, when stream flows are at their lowest to facilitate dewatering activities which will minimize impacts to aquatic organisms and sedimentation downstream.

The on-site environmental coordinator will monitor project construction to ensure that all environmental protection measures are being implemented including compliance with all City, State and Federal permits. The onsite environmental coordinator will be responsible for training all city staff, contractors and sub consultants completing project activities on site. Training will include an overview of the sensitivity of the creek corridor environment, the purpose of the restoration project, native and non-native plants on site, identification of native wildlife species that are likely to encounter on site and a summary of the environmental conditions and best management practices to be followed. The onsite environmental coordinator will be on site during all initial demolition activities, new grading, the installation of the temporary stream crossing and dewatering activities, and a minimum of once per day through the rest of construction activities are being conducted. In addition City Public Works staff will manage the construction contract. The Project Engineer and Inspector will also make regular site visits throughout construction to ensure the contractor is completing all project work in accordance with the detailed project specification and contract requirements.

The restoration of this portion of Arroyo Burro will improve wildlife access into the stream channel as well as up and down the watershed throughout the stream corridor. Food and shelter availability for birds, wildlife, and aquatic organisms will also be improved through the restoration of native riparian habitat. The project aims to improve public access and creek aesthetics while providing an opportunity for public outreach and education about the watershed, habitat restoration, and water quality. Two interpretive signs will be installed in key locations to educate the public about the importance of watershed protection and habitat restoration efforts. Project site will be maintained and monitored by the City following the completion of construction to ensure establishment of native plants.

If you have any questions, please do not hesitate to contact me at 805-560-7549.

Sincerely,
Erin Markey
Creeks Restoration Planner
City of Santa Barbara
620 Laguna Street
Santa Barbara, Ca 93101
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Arroyo Burro Open Space Creek Restoration Project

Habitat Preservation, Restoration, Maintenance and Monitoring Plan

April 2018

Prepared by:

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Project Location
The City of Santa Barbara’s Arroyo Burro Open Space Restoration Project (Project) is located at the north end of Alan Road along the mainstem of Arroyo Burro in Santa Barbara County. The project site encompasses the creek side portion of the four city owned parcels (APN 047-010-064, 047-010-009, 047-010-065, & 047-061-026).

Project Description
This restoration plan lays out the strategy and timing for restoring riparian, wetland and upland habitat in areas disturbed by the implementation of the restoration Project. The plan was designed to satisfy the recommendations by Dudek, in the 2017, Biological Site Assessment for the project. The report has been provided to the following permitting agencies as part of the project approvals, the California Department of Fish and Wildlife, the Regional Water Quality Control Board, the Army Corp of Engineers, and the City of Santa Barbara’s Community Development Department.

The Project will restore 1,400 linear feet of Arroyo Burro which is currently in a degraded state with areas of significant erosion, deeply incised creek banks, and numerous non-native species. The project will create a wider more diverse riparian zone with increased access to floodplain habitat through grading activities to create an acre of shallow floodplain benches designed to be accessed/inundated by the 2 year storm event. The total project disturbance area is approximately 3 acres. Additional native planting will occur in areas adjacent and upland of project disturbance activities bringing the total project area to 4 acres.

Key components of the restoration project include:
- Removal of all un-natural hydrologic features including 60 tons of concrete, 320 linear feet of pipe and wire revetment and other debris,
- Re-grading portions of the stream channel to increase meanders and improve access to over an acre of floodplain habitat,
- Restoration of eroding creek banks through the installation of bio-technical methods of bank stabilization along 500 feet of creek banks,
- Removal of non-native vegetation, including 9 eucalyptus trees,
- Restoration of a diverse community of native riparian and upland plants,
- Protection and avoidance of existing natural resources through temporary exclusion fencing
- Instillation of biodegradable erosion control measures including coconut blanket, sterile rice straw mulch and straw wattles.
- Installation of over 7,500 locally sourced native container plants, native seed, and sterile erosion control seed to restore native habitat and stabilize disturbed areas.
- Installation of a temporary irrigation system to ensure plants get established.
- Creation of defined access point to the creek with split rail fencing to limit social trail and vegetation trampling. Installation of interpretive signage.

Restoration Goals
- Remove non-native vegetation from the project area including 9 Eucalyptus trees and nearly an acre of Arundo.
• Mitigate the removal of 54 arroyo willows, 1 western sycamore, and 2 blue elderberries.
• Establish native vegetation to the 3 acre project disturbance area and 1 additional acre of creek side habitat through root wad relocation, tree staking, seeding, and planting of container plants.

Habitat Protection and Avoidance Measures
1. Construction staging has been identified on the plan sheets to take place in ruderal areas of the property at least 50 feet from the top of the creek bank.
2. Existing native trees and vegetation outside the project work limits will be protected during construction through the installation of temporary construction fencing. Orange construction fencing will be installed around the project work areas and/or 5 feet beyond the drip line of existing trees to be preserved to prevent accidental disturbance of these areas (see plan set for fence location details).
3. Prior to removal, each tree would be examined by a biologist to ensure that there are no active native bird nests sites in or adjacent to the target tree. If any activity nests are found, removal of that tree will be delayed until they have fledged.
4. A total of 54 native Arroyo Willows (Salix lasiolepis) are within in the project grading limits. Where feasible willow root wads will be avoided or relocated, and above ground branches and trunks will be salvaged and re-used as willow stakes throughout the creek corridor.
5. No impacts to special status plants will result due to the project activities. An extensive survey of the vegetation present at the Open Space Park was completed by Dudek in August of 2017. No endangered or threatened plants were encountered as part of this survey effort. If any threatened or endangered plant species are observed during surveys prior to the onset of construction activities (April and June surveys) they will be fenced and avoided during construction, if necessary project activities will be re-designed to avoid any impacts to special status plants.

Plant Materials and Installation Design
The attached species lists (page A) details the species, quantities, and relative spacing of plants that shall be used in the different re-vegetation zones. Planting zones are depicted on sheets R1 and R2 of the plan set. Nursery stock, contract grown from local sources by two local native plant nurseries, shall be planted into bare ground through the erosion control fabric or rice straw. Plants will be in 1-gallon containers or larger for native trees and in good condition. All nursery stock will be inspected by the project biologist to ensure plants are in good health (show vigor, proper growth form, and are free of common pests) prior to planting on site. Plantings shall be on average four-foot centers, and according to the planting zones. Exact locations will be determined in the filed by City Creeks Division staff. Native trees will be planted according to the habitat preference, so for example sycamores and cottonwoods will be associated with the stream corridor and oaks and black walnuts will be placed in more upland areas. If necessary, the use of herbivore protection enclosures shall be used to help trees and plants survive their first few years.
Tree stakes will be salvaged by the contractor according to the project specification. Stakes will be a minimum of ½ inch in diameter and 3 feet in length. Stakes will be cleaned of small branches and leaves and immediately soaked in water until they are installed. Stakes will be soaked in water for a minimum of 24 hours but no longer than a week.

Native seed will be collected throughout the project site and from within the watershed in January, April, and June of 2018. This seed will be cleaned and then frozen for 24 hours to kill any potential lingering pests. Seed will be stored in paper bags in a cool dry place until installed on site.

A sterile erosion control mix will be used in some areas to temporarily stabilize the site. A sterile triticale hybrid, known as quickguard, is a fast germinating species bread to be sterile so that they will not compete with the more desirable native plants in subsequent growing seasons.

**Actions and Techniques**

1. Implement temporary sediment control measures to stabilize all disturbed areas of the site until native plantings get established.
   - Newly graded creek banks or bare soils with slopes grater than 5% will be covered with biodegradable erosion control fabric. Slopes will be free of debris or rocks prior to the installation of erosion control blanket. Seed will also be installed prior to blanket installation.
   - Level areas including the floodplain terraces and staging areas will be mulched with sterile rice straw and seeded with a fast growing sterile erosion control seed mix.

2. Establish a diversity of native woody and herbaceous species on disturbed soil surrounding the newly constructed stream channel, banks and existing upland habitat from seed, nursery stock and cuttings.
   - Willow, sycamore and elderberry stakes will be salvaged from the trees are shown as impacted by the project activities. Stakes will be installed so that 2/3 of the stakes (minimum of 2 ft) is below ground with solid soil contact to keep the pole from drying out and allow for proper rooting. Once installed poles will be trimmed such that no more than 12 inches is sticking up above the soil surface. Installed stakes will be deeply soaked and trimmed back on the day of installation.
   - Direct seeding shall be done under the erosion control fabric or sterile rice straw. Seeds shall be hand broadcast and then gently raked in with rock rakes.
   - Container plants will be installed according to the project plans and specifications. Planting holes shall be excavated to a minimum of twice the width of the container and the same depth as the container. Container plants shall be placed by removing the entire plant from the container with the root ball intact. The rootball shall be placed without damaging the roots. The plant shall be set plumb and braced in position until the backfill has been tamped solidly around the rootball. The planting hole shall be filled with native soil so that the plant is level with the adjacent ground. Plants shall be watered
immediately after planting. Contractor must check each plant after watering to correct any soil settling during and after planting.

- All planting and seeding shall be done in the rainy season, or supplemental irrigation will be used to establish plantings.
- Woody non-native species will be removed from the project site

3. Replace, any native trees impacted by construction.
   - 54 arroyo willows (*Salix lasiolepis*) with a DBH ranging from 4 to 28 inches, will be salvaged to create 1,000 tree stakes to be used in re-vegetation efforts along the creek banks and root balls will be avoided or relocated where feasible.
   - 2 blue elderberry (*Sambucus nigra, ssp caerulea*) with a DBH of 5 and 30 inches will be salvaged to create tree stakes and will be replaced with more than 200 – 1 gallon nursery stock planted throughout the site.
   - 1 western sycamore (*Platanus racemos*) with a DBH of 30 inches, has been in very poor condition for over 2 years. The project proposes to remove the tree in order to create floodplain habitat, the tree will be preserved and used a woody debris habitat on the surface of the terrace. All other sycamores with in the project area will be protect. The removed sycamore will be replaced with 150 – 5 gallon nursery stock planted throughout the site.

4. A temporary irrigation system will be used to ensure rooting of cuttings and survival of nursery stock until establishment. Plants will be irrigated by a drip system through the dry season on a weekly basis during year one and less frequently during year two. A drip irrigation system will allow for a deep soaking to encourage downward root growth so plants eventually reach the shallow ground water at the site.

**Site Maintenance**

Invasive non-native plants shall be hand-pulled from the restoration areas according to the following schedule: Year 1 – twice monthly basis; Years 2&3 - monthly basis. Years 3+ quarterly or as needed to prevent non-native establishment and reach our performance criteria.

During the first year irrigation will be checked on a twice monthly basis during the dry season to ensure native plants are getting adequate water. Replacement plantings of cuttings, nursery stock or acorns shall be installed as needed to insure the performance criteria are met or exceeded. If average rainfall is received plants will be weaned of irrigation in year two and monitored for signs of water stress and survival. If drought conditions persist, then supplemental irrigation may be provided to help native plantings survive through their second summer.

Nursery stock shall be monitored in the first year for mortality. Replanting shall be conducted as necessary to account for mortality and to ensure the performance criteria are met.
Performance Criteria
At the end of five years, the project site shall achieve the following vegetation goals: 75% native cover, with no one native species representing more than 20% cover at the site. Native plantings shall survive at least two years without supplemental watering. The restoration areas will be devoid of any perennial non-natives and herbaceous non-natives will be less the 5% of the overall cover. The project will overall improve the percent cover of native vegetation at the end of five years.

Monitoring and Reporting
Monitoring at the project site will be consistent with the State’s Wetland and Riparian Area Monitoring Plan (WRAMP), and will include the following:
- Level 1 monitoring will include baseline areal mapping and a comparison of existing conditions to post project conditions.
- Level 2 monitoring will be done using the riverine California Rapid Assessment Method (CRAM) to evaluate the overall site condition pre and post project.
- Level 3 monitoring will include on the ground photo monitoring points, vegetation cover, surface water quality monitoring, and benthic macro-invertebrate (BMI) sampling to track changes that occur post project.

Monitoring Methods
1. CRAM
The riparian and wetland areas will be monitored using the CRAM methodology and data sheets to assess overall condition of the site pre and post project and track changes over time. The project site will be monitored in year 2 and 5 post project completion.

2. Native Plant Coverage and Non-Native Plant Coverage
Plant percent cover will be measured using ten linear transects established within the restoration area. Each transect will be at least 50 feet long. Photos are taken at each transect location to document plant cover and identify transect locations for future plant surveys. The photos are included in the report. Plant coverage along each transect will be surveyed at two foot point intercepts for species present by vegetation cover class (tree, shrub, basal cover, and/or bare ground). The species combination and cover class at each point will be used to estimate percent cover by each species combination, cover class, native and non-native plants, and to assess the cover by each species combination and cover class at each point to estimate percent cover. In addition, categories identifying bare ground, vegetative litter, rocks, and water will be used to assess points with no ground level vegetation (see attached data sheet on page C for more details). The ten transects will be marked in the field with posts at each end, GPS coordinates, lengths and bearings in order to be re-surveyed in subsequent years. The transects will adequately represent the restoration project area and cover the three major vegetation planting zones, upland transitional, upper bank riparian, lower riparian/floodplain terraces.

In addition to vegetation transect monitoring, qualitative monitoring is conducted during the monitoring. Qualitative monitoring documents the progress of native cover, death or mortality observed in installed plant species, natural recruitment progress and volunteer
native plant species, non-native cover estimates, and species that need to be targeted for removal.

3. Photographic Monitoring
Photographic monitoring shall include at least 10 fixed photo points, see attached map on page B for locations. The photos will be taken annually, at the same time (spring), and prior to the project commencement for comparison.

4. Surface Water Quality
Surface creek water quality will be monitored using grab samples. Samples will be either processed in house or sent to a certified laboratory within 24 hours (depending on which constituents are being sampled). Physical parameters (temperature, salinity, conductivity, etc.) will be measured and recorded in the field. Surface creek water quantity will be continuously monitored using a HOBO data logger. Surface grab samples will be taken quarterly and additional sampling will be conducted during storm events.

5. Benthic Macro-Invertebrate (BMI) sampling
BMI will be measured using the specific protocol developed for South Coast streams by Ecology Consultants Inc. The following is a basic outline of the methodology. A two member crew conducts the BMI sampling. GPS coordinates are utilized to locate the exact locations. One transect is sampled for each project site location. Transects are 100 meters long and measured using a hand held tape. Individual grab samples for BMI’s are taken using a hand held D-net. BMI samples are taken at 10 meter intervals. The crew starts from the downstream end and travels upstream during sampling. The net is swept along the stream floor to collect BMI’s by using your boot to disturb the substrate and sweeping the net along the creek floor to capture the dislodged BMI’s. The contents of the net are poured into the sample bottle to create one composite sample per transect. The sample is transported back to the lab for identification and processing. Photos of the site are taken. Environmental conditions are also recorded such as: stream widths, wetted creek parameter, native plant cover, riparian canopy/shade, wildlife observations, stream flow, etc. Once the BMI laboratory work is completed, the data is analyzed and incorporated into a final report by the consultant.

Reporting
Annual monitoring reports will focus on efforts to assess the establishment, cover and diversity of native vegetation at the project site. The annual monitoring report will provide a summary of maintenance activities and make recommendations for needed changes in order to meet the performance criteria during the 7-year maintenance and monitoring period as required by the Department of Fish and Wildlife. In addition photographic monitoring results will be included in each annual report. Additional monitoring results from CRAM, water quality sampling, BMI sampling will be included in the annual monitoring report when applicable based on timing of monitoring efforts and results. Relevant monitoring reports will be provide to granting and permitting agencies for compliance with their requirements.
**Timeline**
This timeline assumes construction will occur in summer 2018.

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<th>Timing</th>
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<tr>
<td>Seeding/Erosion Control Installation</td>
<td>Fall/Winter 2018</td>
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<tr>
<td>Plant Acorns, Nursery Stock and Cuttings</td>
<td>Fall/Winter 2018</td>
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<tr>
<td>Weeding</td>
<td>Bi-Monthly in 2019 &amp; 2020, Monthly through 2021, Quarterly or as needed through 2023</td>
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<tr>
<td>Plant/Irrigation Maintenance</td>
<td>Bi-Monthly in 2019 &amp; 2020, then Monthly through 2021</td>
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<tr>
<td>Vegetation Monitoring</td>
<td>Spring 2019 - 2023</td>
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<tr>
<td>Annual/Final Report</td>
<td>December of each year through 2023</td>
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**Arroyo Burro Open Space Re-vegetation Species List**

### PLANTING ZONE A: RIPARIAN LOWER BANK AND FLOOD PLAIN SPECIES

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<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
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<tr>
<td>CA blackberry</td>
<td>Rubus ursinus</td>
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<td>Giant rye</td>
<td>Leymus condensatus</td>
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<td>Toyon</td>
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<td>Humming bird sage</td>
<td>Salvia spathacea</td>
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<td>Canyon sunflower</td>
<td>Venegasia carpesioides</td>
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<td>Fuchsia-flowered goose</td>
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### PLANTING ZONE C: UPPER TERRACE AND UPLAND SPECIES

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<td>5 ft</td>
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**Total Container Plants:** 7475

**Note:** Exact species and quantities are estimates and may change slightly, over all the number of trees and container plants will stay the same.
Arroyo Burro Open Space Photographic Monitoring Points.
## Sample Data Sheet – Point Transects

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LOWER ARROYO BURRO CREEK RESTORATION PROJECT

65% Design Report

prepared for
City of Santa Barbara, Parks and Recreation

prepared by
WATERWAYS CONSULTING, INC.

February 26, 2018
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<td>Watershed Overview (with gage location)</td>
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<td>Project Work Areas by Number</td>
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<td>Arroyo Burro Hydrologic and Hydraulic Technical Memorandum</td>
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<td>Rock Slope Protection Calculations</td>
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1.0 PROJECT INTRODUCTION AND GOALS

Waterways Consulting is working with the Creeks Division of City of Santa Barbara Parks and Recreation Department to develop a restoration plan to enhance channel and floodplain areas along approximately 1,400 linear feet of Lower Arroyo Burro Creek. The proposed project site is located within the Arroyo Burro Open Space Park (Park), within the City of Santa Barbara, California. The park is bounded by residential development to the north and south and by Las Positas road to the east. The project site is accessed from the south by Alan Road. The property is currently zoned as Parks and Recreation, with an Open Space Park Category. Figure 1 shows an aerial overview of the project vicinity. Figure 2 shows an overview of the project location and contributing watershed area.

Arroyo Burro Creek within the project area has generally been impacted by channel incision due to human land use in the watershed, and is impaired by active bank erosion, disconnected floodplains, and extensive stands of exotic invasive vegetation. The primary goals of the proposed restoration work are to:

- Reduce the local bank erosion rate
- Expand and enhance native riparian vegetation
- Improve aquatic and terrestrial wildlife habitat
- Improve water quality
- Protect mature native trees that are threatened by bank erosion
- Maintain or improve current levels of flood protection
- Provide educational opportunities concerning restoration and water quality issues

Figure 3 shows an overview of proposed project and work areas labeled by number. The proposed project will address the goals stated above through multiple complementary approaches: excavating inset floodplain benches, removing debris (e.g., concrete rubble and fencing), planting native riparian vegetation, removing exotic invasive vegetation, and stabilizing banks where necessary to protect existing critical infrastructure. Fencing and interpretive signage have also been included to enhance recreational and educational opportunities. A central component of the project is the creation of inset floodplain benches (Green areas in Figure 3) which accomplishes multiple benefits: the wider floodplain will provide an improved riparian habitat zone, and the dense vegetation on this surface will strengthen banks, reducing erosion and downstream sedimentation, and contributing to water quality through biofiltration and shading. Figure 4 shows a typical cross section of a proposed floodplain bench excavation.

This report was prepared to summarize work performed to date in support of the project design and to present the 65% complete Design Drawings (Drawings), cost estimate, and supporting calculations. The Drawings have been included for reference within Appendix A. The design is in progress at the time of this report’s preparation. Where work items or quantities have been modified since development of the 65% Drawings, the changes are included in parentheses for reference.
TYPICAL ARROYO BURRO CHANNEL RESTORATION SECTION

SCALE: 1" = 10'

- Protect (E) vegetation to remain
- Revegetate with a native erosion control seed mix and native container plants
- Install erosion control fabric and coir roll at the toe to stabilize slope
- Remove (E) concrete debris (where present)
- Varies (4'-6')
- Protect (E) vegetation to remain
- Create continuous low bench to relieve pressure from opposite bank
- Install willow stake (typ)
2.0 PROJECT SETTING
Arroyo Burro Creek drains a watershed area of over 10 square miles, from the divide of the south-facing Santa Ynez Range and extending downstream to the Pacific Ocean at Arroyo Burro Beach (Figure 2). The watershed and channel have been highly modified by human influence since the introduction of cattle grazing during Spanish settlement of the era. Some of the actions that have created impairments have included:

- Clearing of vegetation on the channel, floodplain and hillsides of the watershed
- Straightening of the channel
- Armoring of channel banks with concrete or rip rap
- Narrowing of channel and floodplains with fill
- Hydromodification from urbanization, with increased area of impervious surfaces and efficient storm drainage systems

These actions have greatly altered the geomorphic and hydrologic setting by increasing peak flood flows, sediment loads and erosional forces. The channel within the project area has responded through channel incision and subsequent bank erosion of oversteepened channel banks. These conditions have led to the establishment of exotic and invasive vegetation species such as giant reed (*arundo donax*) and eucalyptus.

2.1.1 Existing Channel Conditions
Arroyo Burro Creek within the project site is incised and experiencing active bank erosion at numerous locations. The channel incision has abandoned former floodplains along much of the channel, and these are now inaccessible to regular flood events. As a result, the floodplains are disconnected and unable to effectively provide typical floodplain benefits including attenuation of flood peaks, sediment retention, nutrient uptake, and support of a healthy riparian ecosystem. Channel incision below the rooting depth of riparian trees has in many places resulted in the bank toes lacking root strength, another factor that has accelerated erosion of the high banks. Where the channel has historically migrated laterally, there exist a few smaller inset floodplain benches that are at grade with the channel and inundated by moderate floods (Photo #1).
The Arroyo Burro channel exhibits pool/riffle morphology within the project reach, with an average slope of 0.65%. The channel gradient in the project reach has likely decreased as a result of the incision, because the downstream base level of the stream profile is fixed by a large concrete grade control structure positioned approximately 225 linear feet downstream of the project limits.

Riffles are typically composed of cobbles and gravel with coarse concrete debris providing grade control at discrete locations. Several of the pools maintain year round water depths of more than two feet, and tend to be deepest at locations where the channel is impinging on resistant bank materials such as old sacked-concrete or post and wire revetments.

Although there is active bank erosion throughout the site, three specific locations warrant mention due to the threats that ongoing erosion pose to existing resources. Starting from the upstream end of the project, the first site is on river left between Stations 14+10 and 15+60, as shown on sheet C4 of the Drawings (work area 9 in Figure 3). At this location, the channel has formed a long meander bend that has begun to undermine the slope supporting Las Positas Road. Although the pavement is still fifty feet away from the toe of the channel, the bank height is approximately thirty feet at this location. Additional retreat of the toe would begin to threaten the road. A second area of concern is located just downstream on river right, at station 13+00 and is also visible on Sheet C4 of the Drawings (work area 7 in Figure 3). Bank erosion here is threatening to undermine a very large (over 60 inch dbh) oak tree.

The last area of concern is on river right at station 6+50 (work area 3 in Figure 3). A previous bank failure here has exposed a section of the City’s sewer main. The main was locally repaired and cased in
steel protective conduit, but the area remains unstable due to active erosion of the overly steepened banks adjacent to the repair.

2.1.2 Existing Structures and Improvements
Concrete rubble was observed at many locations throughout the project area, both on the banks and in the creek bed. Generally, the concrete does not appear to be providing any functional role in stabilizing the creek, though it has contributed to stable riffle formations in some locations (Photo #2). Where feasible, rubble was identified during the topographic mapping and has been depicted in the Drawings (Appendix A). We anticipate that additional buried concrete rubble may be discovered during the restoration work, and this will be removed where feasible.

Approximately 350 linear feet of the channel banks are currently lined with post and wire-revetment, as shown in Photo 3. This type of revetment was a standard practice in the area in decades past, supported by the NRCS and others. These structures have exceeded their design life and, in most cases, have degraded through corrosion of the wire mesh and no longer function as intended. Additionally, the creek has incised several feet since their installation and left many of the structures perched well above the bed of the channel.

Photo 2. Concrete rubble in channel.
City water and sanitary sewer lines run through the park, generally beneath or immediately adjacent to the existing dirt road that starts at the end of Alan Road and runs along the western side of the creek. The water line crosses above the creek just upstream of the project area. As discussed above, the sewer line was compromised by bank erosion in at least one location. This is shown as work area 3 on Sheet C2 of the Drawings. It appears that the erosion was caused by surface drainage that was concentrated on the road surface and discharged over the bank.

Work area 10, shown on Sheet C2 of the Drawings, comprises an abandoned dirt bicycle motor cross track or “pump track” that was illicitly constructed on a terrace on the eastern side of the creek. The area has been mostly cleared of vegetation and graded - presumably using hand tools – to create a track with depressions, jumps, and berms.

2.1.3 Biological Resources
Though the site has been greatly altered by human impacts, there remain significant biological resources, including sensitive aquatic and riparian habitat along the channel, dispersed and variable avian habitat all through the park, and a high number and variety of mature native and ornamental trees. The Final Arroyo Burro Open Space Restoration - Biological Site Assessment (Dudek, 2017) provides a thorough list of documented biological resources.

Wildlife
No threatened, endangered or special status wildlife was observed during Dudek’s field surveys. The following wildlife species of special interest have not been observed on site but were identified as having the potential to occur based on suitable habitat and known nearby occurrences:
- southern western pond turtle,
- California legless lizard,
- Cooper’s hawk,
- white-tailed kite,
- yellow warbler,
- pallid bat

Vegetation
The stream channel and terraces are primarily characterized as riparian willow woodland. Native trees found on site mostly comprise coast live oak, willow, western sycamore and elderberry. Dominant native shrubs include poison oak, California rose, Douglas nightshade, blackberry, wild cucumber, coyote brush, giant wild rye, and morning glory. Native shrubs along the banks have been mostly replaced by invasive species such as giant reed, nasturtium, and cape ivy. The City has been aggressively removing giant reed, and much of the lower bank and floodplain areas had been recently cleared at the time of our mapping (summer 2017). Several groves of eucalyptus are also found within the work area.

One of the goals of the project is to protect mature native trees that are threatened by bank erosion. Several large oak trees and sycamores appear to be at risk if channel migration and bank erosion continue unchecked. Photograph #4 shows an example of one such oak tree located on the west side of the creek that is threatened by continued bank erosion. Individual trees are located on the design drawings.
2.1.4 Hydrology
Arroyo Burro is a perennial creek, draining approximately ten square miles of watershed off the west slope of the Santa Ynez Mountains. The watershed experiences a Mediterranean climate with relatively dry summers and rainfall typically occurring between the months of November and March. Summer base flows within Arroyo Burro Creek are derived from urban runoff, groundwater seepage, and springs. Peak flows occur in the winter months, driven by local high intensity rainfall events. Yearly rainfall averages approximately 22 inches in the City of Santa Barbara, but can be highly variable both temporally and with location, with higher elevations typically receiving substantially more rain.

A stream gage was operated on Arroyo Burro Creek by the USGS for over 30 years (1970 through 1993). The gage was located upstream of the site near Hope Avenue (Figure 2) where the tributary area draining to the channel is 6.65 square miles (about 67 percent of the total watershed area, and 77 percent of the watershed above the project site).

Several studies have been performed to evaluate peak flows within the Arroyo Burro Watershed. Waterways has evaluated these studies and adopted the FEMA published values for large events (i.e., 10-, 50-, and 100-year storms year and above) and used the historic USGS gage data to evaluate low flows. Our analysis is summarized within a report included as Appendix B (Waterways, 2018). The drainage area contributing runoff to the gage is 6.65 square miles, while the drainage at the project site...
is 8.6 square miles. Gage data were scaled by watershed size to develop values suitable for our site. Hydrology calculations can be found in Appendix C.

Table 1. Summary of Peak Flow Estimates

<table>
<thead>
<tr>
<th>Recurrence Interval</th>
<th>Peak Flood Values at the Project Site (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-year</td>
<td>5950</td>
</tr>
<tr>
<td>50-year</td>
<td>4390</td>
</tr>
<tr>
<td>10-year</td>
<td>1590</td>
</tr>
<tr>
<td>2-year</td>
<td>771</td>
</tr>
</tbody>
</table>

2.1.5 Geology and Soils
Numerous studies have been performed to evaluate the project area’s geologic conditions. Section 3.2.1.2 “Regional and Site Geology” of The Final EIR for the Veronica Meadows Specific Plan provides a summary of the soils: the creek banks, floodplain, and terraces are generally considered Quaternary (younger than 2.6 million years) stream terrace deposits along with dormant and active landslides and earthflows (URS, 2005). Some of the sediments in the valley floor at the project site may be landslide and debris materials emanating from the triangular shaped debris fan formed by a small tributary entering the project from the northwest. The debris fan is thought to have pushed the creek’s alignment about 200 feet easterly towards Las Positas Road (URS, 2005).

3.0 OVERVIEW OF WORK PERFORMED
Tasks performed by Waterways in support of the project design process include the following:

- Review of background data sources;
- Several planning and review meetings on site with City Staff;
- Topographic mapping, cross sectional and long profile surveys;
- Hydrologic and hydraulic modeling of existing and proposed conditions,
- Development of concept level designs and cost estimates, and
- Development of 65% complete design drawings and cost estimates.

3.1 Site Reconnaissance, Data Collection & Analysis

3.1.1 Background Data Collection and Review
The City purchased the property that includes the project site in February of 2016. The City previously owned approximately six acres of adjacent public park space, and this purchase increased the total quantity to approximately 20.7 acres. The previous owner of the land had considered creek restoration in association with a proposed residential development known as “Veronica Meadows”. Restoration plans for the creek were developed by Swanson Hydrology + Geomorphology (SH+G) under contract
with the previous owner as early as 2005. Previous work by SH+G and others in support of the Veronica Meadows project were reviewed during the development of the current designs. The Final EIR for the Veronica Meadows project (URS, 2005) was a primary source of background information on existing resources and site characteristics. Additional key background data sources included past hydrologic studies (referenced in Appendix B), ground based topographic mapping completed by Waterways in 2016 and 2017, and tree location surveys. Our incorporation of each of these work products is discussed in the related sections of this report.

3.1.2 Geotechnical Investigation

Earth Systems, a local geotechnical firm, was hired to review the concept level design drawings and previous geologic studies to evaluate the need for geotechnical review or design services in support of restoration final plan preparation and implementation.

Although previous studies have identified “active landslides” within the project footprint, a focused geotechnical investigation was not recommended, due to the project’s low level of complexity or risk. Earth Systems agreed that the proposed work would do nothing to destabilize existing failures. In fact, the bench excavations would remove loose material, lay back steep slopes, and revegetate these areas to improve overall stability.

However, two project components were identified by the City and the design team as warranting qualitative geotechnical review and consideration. These components include the exposed sewer line (work area #3, Sheet C2 of the Drawings) and the bank erosion site near Las Positas Road. Mr. Todd Tranby of Earth Systems visited the project with Waterways in the fall of 2017 to review the concept designs for these areas and provide recommendations. The outcome of the meeting was an agreement that the only area that would require geotechnical oversight was the proposed fill slope at the sewer line. Because of access constraints and the presence of concrete debris in the work area, it was determined that the most cost effective approach to develop fill slope design criteria would be for the geotechnical engineer to perform his investigation during the work, and to provide any necessary recommendations as field directives. The geotechnical engineer will also be on site to evaluate and approve potential borrow sources for engineered fill.

Also as a result of the geotechnical site visit, the proposed repair to the bank erosion along Las Positas Road was revised to show placement of rock slope protection outboard of the existing bank, without disturbing the bank. The goal of this work is not to stabilize the existing slope, which has been steepened by the stream cutting at the toe, but to prevent further advancement of the erosion at the toe of the slope. A slope stability assessment of the existing embankment was not performed, as this would be outside the scope of the stream restoration project.

A plan review letter is not included here, but will be provided by Earth Systems prior to finalization of the designs. Earth Systems will be contracted by the City to observe construction of the earth embankment fill at the sewer line repair area and provide necessary compaction testing.
3.1.3 Topographic Mapping
The existing conditions topography used for the 65% designs is derived from LiDAR data provided by the City, which was collected by Compass Data, Inc. in February of 2016 (elevation datum is NAVD 88). The LiDAR data was supplemented by topographic mapping, tree surveys, and cross-sectional data collected by Waterways in 2016 and 2017.

In some locations, topography was supplemented with linework and tree locations from a ground based survey by Penfield and Smith Surveyors, dated April 1997. This survey was performed for the previous owners in support of the Veronica Meadows project and made available to us by SH+G Engineering.

3.1.4 Hydraulic modeling
The existing and proposed conditions hydraulic characteristics of the site were evaluated through hydraulic modeling of peak flows to determine flood conveyance, inundation depth and area, and erosive forces. Modeling was conducted using HEC-RAS 5.0 river analysis software, developed by the United States Army Corp of Engineers (USACE). The model extends from just downstream of Cliff Drive to just downstream of the Highway 101/Modoc Road culvert.

A detailed description of the methods and results of the modeling exercise is provided as a separate technical memorandum attached as Appendix B (Waterways, 2018). Relevant results are summarized below.

Existing Conditions
The existing conditions model shows that flow has limited access to floodplain, even in the 100-year event. For instance, Table 2 shows that the wetted top width of the channel within the project area averages 34 feet in a two year event, but is only 49.3 feet in a ten year event. Figure 5 demonstrates this condition by showing a typical cross section under existing and proposed geometries at 2, 10, and 100-year recurrence interval flood events.

Table 2. Comparison of Existing and Proposed Conditions through the project reach

<table>
<thead>
<tr>
<th></th>
<th>Existing Conditions</th>
<th>Proposed Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Velocity (2-yr)</td>
<td>5.8 ft/s</td>
<td>4.9 ft/s</td>
</tr>
<tr>
<td>Average Velocity (10-yr)</td>
<td>6.7 ft/s</td>
<td>5.7 ft/s</td>
</tr>
<tr>
<td>Average Velocity (100-yr)</td>
<td>9.5 ft/s</td>
<td>8.5 ft/s</td>
</tr>
<tr>
<td>Average Wetted Top Width (2-yr)</td>
<td>34 feet</td>
<td>60.9 feet</td>
</tr>
<tr>
<td>Average Wetted Top Width (10-yr)</td>
<td>49.3 feet</td>
<td>72.1 feet</td>
</tr>
<tr>
<td>Average Wetted Top Width (100-yr)</td>
<td>103 feet</td>
<td>104.9 feet</td>
</tr>
</tbody>
</table>

Despite the low slope of the channel (0.65% average within the project area), the existing conditions velocities are relatively high due to the entrenched condition reflected in Figure 5. Table 2 presents average velocities within the entire project reach, over a range of flows while Appendix B presents similar data at individual cross sections.
**Proposed Conditions**
Review of water surface profiles (Figure 6) clearly shows that steady-state flood capacity is improved through the site through the expansion of cross sectional area available for conveyance. The 100-year water surface within the project area is lowered under proposed conditions by more than one foot at several locations.
TYPICAL CROSS SECTION

SCALE: 1" = 20 ft, 1"=10 ft

EXISTING GROUND

PROPOSED 2-YEAR WATER SURFACE ELEVATION
EXISTING 2-YEAR WATER SURFACE ELEVATION
PROPOSED 10-YEAR WATER SURFACE ELEVATION
EXISTING 10-YEAR WATER SURFACE ELEVATION
PROPOSED 100-YEAR WATER SURFACE ELEVATION
EXISTING 100-YEAR WATER SURFACE ELEVATION

FINISHED GRADE
FIGURE 6

Existing and Proposed Water Surface Profiles for the 100-year Flood Event
Figure 7 shows a plan view comparison of existing and proposed conditions inundation areas during a 100-year event. Note that while the 2-year and ten-year inundation areas are greatly expanded, the 100-year floodplain is actually somewhat reduced for two reasons:

1. Water surfaces are slightly lowered, as noted above, and
2. Our limits of excavation typically do not extend to the existing 100-year flood extents (Figure 5).

The most notable change in hydraulic characteristics is the increase in floodplain inundation during the more regular (e.g., two and ten year) flood events. As shown in Table 2, floodplain inundation areas during these events expand by 80% and 45%, respectively.

The proposed conditions assessment shows that the restoration project site is hydraulically well-suited for further enhancement of floodplain function, which will help reduce channel velocities and lower water surface profiles within the project reach (Figure 6). Further, the expanded floodplain areas will allow for enhanced floodplain storage during large events which may attenuate downstream flood peaks.

In addition to these hydraulic improvements, the greatly expanded area of shallow floodplain inundation in smaller floods such as the 2-year event will provide water quality benefits commonly associated with natural vegetated floodplains, including sediment filtration and nutrient uptake.

Based upon the proposed condition model results, the project will not increase flood surface elevations and therefore is not anticipated to impact FEMA’s regulatory floodway or base flood elevations. Likewise, revisions to FEMA’s insurance mapping are not anticipated to be required in association with the proposed restoration project.

4.0 DESIGN DEVELOPMENT

4.1.1 Project Kickoff Meeting with City Staff

Waterways staff met with the City on several occasions during the course of the work. A project kickoff meeting was held in August of 2016, prior to the start of data collection or concept design development. The kickoff meeting was used to refine goals and objectives for the project and to discuss available background data resources and project schedule. The result of the meeting was written summary of project goals, objectives and constraints. Waterways’ minutes from the meeting are provided as Appendix C.

4.1.2 Concept Level Design Development

The original concept level designs were developed in stages, allowing for City input and field verification of preliminary products prior to completion. Waterways met with City staff at the project site to review preliminary concept designs, discuss data gaps, and allow an opportunity for the City to provide focused direction for incorporation into a revised concept design submittal. At this time, it was apparent that the original aerial mapping product used as a basis for the concept designs was inadequate within the channel, and that the tree location survey was incomplete. A significant outcome of the meeting were decisions (a) to use a new LiDAR basemap (to be provided by the City) for subsequent design phases and
(b) to perform additional ground-based surveys to locate trees and to confirm mapping in densely vegetated areas. Additional feedback included direction from the City to avoid work near downstream neighbors, increase the area of some floodplain benches, and to avoid disturbance to native trees (specifically a few select sycamore trees). Additional eucalyptus trees were also recommended for removal to be incorporated as habitat elements within the proposed toe stabilization area.

A few of the project features originally discussed as alternatives were removed from the plans at that time, including work to remove or enhance the downstream grade control. The project designs were reviewed to ensure they would not limit the potential future modification or removal of the downstream grade control structure.

Concept plans for the restoration project were revised following this meeting and resubmitted to the City in June 2017. The revised Concept designs are attached as Appendix D.

4.1.3 65% Design Development

Waterways was awarded a contract for the development of final designs in August of 2017, which included budget for the additional field survey work to supplement the 2016 LiDAR. Waterways surveyed the channel along the entire project reach, collecting cross section data and locating trees not already shown on existing mapping product. A control survey was performed to allow for proper orientation with the new LiDAR mapping and previous ground-based topography by others. The revised basemap was compiled from these sources and used to develop refined grading plans that better reflected current conditions in the field and avoided disturbing significant native trees (where feasible).

The revised grading plan allowed for improvement of grading quantities and limits of disturbance to better optimize opportunities for floodplain creation without unnecessary temporary impacts to existing resources such as mature sycamore and oak trees. Options for local disposal of excess soil were investigated at a field review with the City staff in January 2018. There did not appear to be sufficient space to dispose of all the excess material without undesirable impacts to the site. As a result, the project currently proposes to off-haul and dispose of all excess soils.

Additional project details that have been incorporated into the 65% submittal include:

- Interpretive signage
- Split rail fencing along perimeter of work area on west side of project, and
- Temporary access, erosion control, and diversion details.
- Recontouring of the “pump track” area (work area #10 on sheet C2 of the Drawings)

4.1.1 Public Outreach

Development of the project included extensive review and participation by the Park and Recreation Commission, the Creeks Advisory Committee, as well as community meeting with stakeholder groups and members of the public. Beginning in October 2016, a number of public meetings were held to solicit community input on the project. Over the last year, various restoration options were investigated. Additional public meetings were held in June 2017, and the draft preliminary plans were revised to
reflect the input and comments received from the public, the Creeks Advisory Committee meeting on July 19, and the Parks and Recreation Commission on July 26. Overall, the various committees, commissions and members of the public expressed overwhelming support for the project. Suggestions for minor modifications to the project have been incorporated into the plans.

5.0 PROPOSED PROJECT DETAILS (65% DESIGNS)
The project has currently been designed to the 65% level of completion. The 65% Design Drawings (Drawings) are included as Appendix A. The following section briefly describes the features and project work areas depicted on the Drawings.

5.1 Floodplain Bench Excavations
The project includes six distinct areas where the existing terraces will be excavated to create inset floodplain benches (Figures 3 and 4). The excavation will generate approximately 13,000 cubic yards of material. Most of this will hauled off site. Benches were generally positioned on the inside of channel meanders and located to minimize disturbance to existing mature native vegetation. The proposed bench locations are shown in green on Figure 3, with design grades and typical sections provided on the grading sheets within the Drawings. Figure 4 is a typical cross section showing bench excavation and revegetation elements. The individual bench areas vary between 2,000 and 16,000 square feet, totaling approximately one full acre of new active floodplain surface. Each bench would be excavated to an elevation four to six feet above the average elevation of the riffles within the reach, with bench elevations decreasing from 36 feet at the upstream bench feature (work area 8) to 28.4 feet at the downstream one (work area 1). The floodplain benches are expected to be inundated at floods of two-year recurrence interval or greater. The benches tie to the existing terraces with cut slopes of maximum 2h:1v inclination. The cut slopes cover an area of approximately 28,000 square feet.

The larger benches are shown with some gentle cross slope towards the channel, though this is not critical to their function. The Engineer will flag the location where bench grading daylights onto the existing streamside bank at the time of construction to avoid unnecessary disturbance to existing vegetation.

The benches will be initially protected from erosion by use of 16-inch diameter biodegradable coir logs placed along their perimeter on the stream side, at regular intervals within the interior of the benches, aligned perpendicular to flow. The purpose of these logs is to temporarily create areas of low energy in their wakes that will induce deposition of sediment, further reducing the likelihood of bank erosion prior to the establishment of vegetation on the floodplain surfaces. Additional protection will be provided by the use of biodegradable slope protection fabric on the cut slopes and the downstream perimeter of the benches.

Benches would initially be vegetated with transplanted willow trees, live stakes, and container plants, in addition to a dense erosion control grass.
5.2 Toe Stabilization Areas

Two specific areas have been identified where additional measures are warranted to provide a higher level of protection against ongoing bank erosion.

The first of these areas is designated as work area 7 on Figure 3 (Sheet C4 of the Drawings). Work area 7 consists of approximately 75 linear feet of eroding bank on river right where a 60-inch diameter oak tree is located at the top of bank, approximately sixteen feet above the bed of the channel (Photo #4). The bank is overly steepened and it appears the oak tree would be threatened by additional retreat of the toe due to lateral migration. There is a desire to protect this uniquely large and otherwise healthy tree. Unfortunately, the low flow channel cannot be realigned here due to the presence of several sycamore trees located low on the opposite bank. Floodplain benching is proposed immediately upstream and downstream of the oak, but cannot be provided in the immediate vicinity due to the sycamore trees. Hard armoring of the bank with rock slope protection or large woody debris was evaluated, but considered to be too aggressive an approach to protect the tree, given the level of risk observed at this time. Instead, a biomechanical approach is proposed, using biodegradable coir logs and live cuttings. A coir roll will be anchored at the toe of the slope and live willow stakes will be placed at approximately three feet on center spacing on over the lower six feet of the bank. We anticipate that this treatment will add strength to the bank and that adjacent floodplain benching will reduce erosive forces to some degree. This site will be monitored closely after construction to ensure success of the plantings. The approach may warrant adaptive management if these measures prove insufficient to provide the desired level of protection.

The second area of proposed toe stabilization is work area 9 (Figure 3), also shown on sheets C4 and C6 of the Drawings. Work area 9 comprises a thirty foot tall and actively eroding bank below Las Positas Drive. The erosional feature is about 140 feet long and located on river left at the outside of a meander bend. The channel appears to have recently advanced toward the bank, undercutting it and leaving a near vertical bank in some areas.

We have recommended rock slope protection at this site due to the proximity to Las Positas and the height of the embankment. The rock would be keyed below anticipated scour and extended up the bank to a height of approximately eight feet above the bed of the channel. To aid in revegetation, the interstitial spaces within the rock would be backfilled with water-jetted stream substrate composed of on-site sands and gravels. Live riparian shrub cuttings would be placed within rock voids prior to backfill and water jetting.

A one-ton rock size was calculated using methods recommended by the U.S Department of Transportation (USDOT, 1989). This method predicts the theoretical minimum rock size that will remain stable based on channel velocity, depth, side slope, and the degree of flow impingement. The rock is designed to remain stable during the 100-year flood event. Calculations for rock slope protection design are summarized in Appendix E.
Logs salvaged from the project site would be incorporated at the toe of the embankment to add hydraulic roughness and habitat complexity. The logs would be cabled to ballasting boulders to prevent floatation or translation from high flows.

5.3 Sewer Line Protection

Work area 3 on Figure 3 (sheet C5 of the Drawings) shows the location of a fill slope that would provide cover over an exposed portion of sewer line located immediately adjacent to the existing dirt road. The sewer line appears to have been exposed due to surface erosion from runoff that was routed along the existing dirt road and discharged over the streambank.

A pipeline repair was performed after the failure, and the sewer line was encased in steel conduit. The conduit is currently exposed for approximately 40 feet where it traverses the slope failure.

The proposed repair consists of an earth fill slope constructed on a 2h:1V inclination to fill the void left by the previous bank failure. Existing loose material and debris will be removed under the observation of the geotechnical engineer and a keyway will be excavated at the toe of the proposed repair. Select locally derived fill will be placed in moisture conditioned lifts and compacted to raise the grade over the pipe to conform to adjacent slopes, as shown cross section on sheet C5 of the Drawings. A small berm will be constructed at the top of slope to direct future surface water away from the repair. A key drain and/or back drains may be installed to relieve groundwater if directed by the geotechnical engineer in the field.

5.4 Interpretive Signage

Interpretive signage will be designed by others under separate contract and placed at the locations selected by the City and sheet C2 of the Drawings). The intent of the signage will be to educate the public about the importance of watershed protection and habitat restoration efforts.

5.5 Fencing

Approximately 1,460 linear feet of cedar split rail fencing will be used to delineate public access paths and discourage access into the restoration areas. Fence alignment is shown on sheet C2 of the Drawings and generally follows the water side edge of the existing dirt access road that runs along the river right terrace on the western side of the channel. At the southern end of the project the fencing will guide pedestrians to an overlook and interpretive sign placed directly adjacent to one of the proposed bench excavations.

5.6 Pump Track Restoration

Work area 10 depicts an area of approximately 6,500 square feet of illicitly constructed “pump track” (BMX bicycle trail with jumps and berms). The area appears to have been cleared of vegetation and graded using hand tools to provide a series of jumps, berms and troughs. The area seems to have
remained unused for some time. Restoration of this area will include removal of exotic plants, recontouring to match pre-disturbance grades, and revegetation with native species.

5.7 Debris Removal
Concrete debris and relic post and wire revetments are found scattered throughout the site. These are proposed to be removed where found. We have attempted to locate the occurrences of some of these elements on the Drawings (Sheets C3 and C4) but assume that more will be found over the course of the work. Where debris is located within the wetted channel or outside of areas designated as accessible by equipment, the debris will be broken (concrete) or dismantled (post and wire) and removed by hand. Posts will either be cut to six inches below ground surface or extracted using hand operated jacks.

5.8 Tree Removals
The design team has exercised great care to avoid damage to existing riparian resources, particularly the oak and sycamore trees. However, some native trees will need to be removed along with the non-native invasive species. The trees proposed for removal are shown on sheets C3 and C4 of the Drawings and include:

- 4 Elderberry
- 6 Eucalyptus
- 1 Sycamore (dead)
- 61 willow

Where willow trees are removed, they will be re-incorporated into the project as live stakes and transplanted rootwads. In addition to those trees required to be removed due to proposed grading, the project proposes removal of several eucalyptus trees at the perimeter of the work.

5.9 Revegetation Plan
The City of Santa Barbara has already grown a collection of native riparian trees and shrubs in anticipation of this project. Sheet R1 of the Drawings provides a detailed planting plan that was prepared in coordination with the City to take advantage of this source of locally derived and native planting stock. The plan calls for installation of over 8,500 plants, including 1,000 live stakes and 500 trees. Grasses, herbs, and shrubs will primarily be installed as one gallon containers, while trees will be installed in tree-pots or as 5-gallon specimens.

The disturbed areas have been divided into three distinct planting zones, based on their elevation relative to the channel. The zones are described as follows:

- Riparian Lower Bank and Floodplain
- Riparian Upper Bank and Floodplain Transition
- Upper Terrace and Upland

Irrigation
The revegetated areas will be maintained with an above-ground drip irrigation system served by buried mainlines installed along each side of the channel. One or more new water meters will be installed to
provide service from existing recycled and possibly potable water sources near the site. The system has not yet been designed, but is anticipated to include drip emitters at each plant and hose bibs for hand watering during maintenance events and to assist with establishment of erosion control grasses. We anticipate that the initial plantings would be irrigated for one to two years, pending rainfall amounts and timing.

6.0 PROJECT IMPLEMENTATION PLAN

6.1 Schedule
The City currently plans to complete 100% designs in the spring of 2018 and construct the work in the summer and fall of 2018, when stream flow is at the lowest. The work will be divided into two contracts with a general engineering contractor performing the major earthwork and a landscape contractor installing the permanent erosion control and revegetation components. The earthwork is anticipated to be completed prior to October 15th.

The landscape contractor would be retained for several years to perform vegetation establishment and maintenance activities.

6.2 Temporary Resource Protection Measures
A Storm Water Pollution Protection Plan (SWPPP) will be prepared to define best management practices (BMP’s) that should be employed over the course of the work, including inspection, monitoring, and reporting. In addition to the SWPPP, the work will be controlled by the conditions of approval of the various resource agencies that will issue permits for the work. These include, but are not limited to the Department of Fish and Wildlife, Army Corps of Engineers, Regional Water Quality Control Board, and the City of Santa Barbara.

Specific measures currently specified on the 65% Drawings to reduce temporary impacts include the following:

1. Temporary stream diversion will be installed along in-water work areas
2. Temporary culverted stream crossing will be installed to allow access across creek
3. Tree protection fencing will be used to delineate work areas and protect trees to remain
4. Staging and work areas will be isolated from the creek using silt fencing or fiber rolls.
5. Stockpiled materials will be covered while piles are inactive and excess soils will be hauled off site
6. Water trucks will be used to maintain dust control
7. Erosion control seed and mulch will be applied to areas once grading is completed.

Additional protection measures will be identified and incorporated into the Drawings prior to their completion.

6.3 Construction Monitoring
Projects of this nature require construction observation by a civil and geotechnical engineer with relevant project experience, who understands the overall goals and objectives of the project. We
recommend that observation or direction from the Engineer be provided at the following stages of the work:

1. Approval of pre-construction BMP installations (e.g., tree protection, tracking control)
2. Materials submittals review
3. Diversion and dewatering
4. Development of temporary access and limits of disturbance
5. Excavation and subgrade preparation
6. Limits of debris removal
7. Compaction of engineered fill placements
8. Final grading inspection, prior to placement of erosion control
9. Keyway of rock slope protection
10. Log placement and anchoring
11. Final Inspection of civil work prior to removal of diversion or crossing
12. Plant and live cutting layout and installation
13. Irrigation layout, installation, and testing
14. As-built surveying

7.0 PROJECT RISKS & UNCERTAINTIES

Though the project approach is relatively straightforward, it does hold some risk and uncertainty.

The primary risk involves the potential for erosion of the newly excavated floodplain benches. The ultimate goal is for these surfaces to be densely vegetated and accessible to flood events. We also wish to allow for natural channel adjustments to occur over time, through bank erosion and bar deposition. For these conditions to be met, the floodplains cannot be armored and must be constructed at an elevation that is low enough to be regularly inundated by floods. This initially puts the floodplains at heightened risk of erosion during very large storms, until mature vegetation can become established on their surfaces to provide rooting strength and hydraulic roughness to dissipate energy.

To mitigate this risk, we have provided slope stabilization fabric on high risk areas and specified 16 inch diameter coir logs be placed perpendicular to flow across the benches. The combined effect of these elements will be to mimic the hydraulic roughness and soil protection that will ultimately be provided by a riparian forest. We have also specified a dense revegetation plan that includes trees and live stakes that will contribute greatly to bench stability after a few years of growth.

Uncertainties include the potential for unforeseen subsurface conditions (e.g. rock, debris, or groundwater) and the chance for large flood events in the years immediately after implementation. The project design and construction approach have mitigated for these uncertainties to a reasonable extent.

8.0 ANTICIPATED PROJECT SITE EVOLUTION

The intent of the project is to create additional floodplain area and to realize the associated habitat, water quality, and flood protection benefits, as outlined above. These benefits will not be fully realized
until a mature riparian canopy is established, which will take decades. During this time, the newly planted trees and shrubs will have improved access to groundwater and should exhibit accelerated growth rates relative to the existing vegetation on the terraces.

While vegetation matures and erosion resistance of the floodplains is increasing, we anticipate that the low-flow channel may continue to erode banks and migrate through some of these new floodplain areas at rates that would exceed those observed in a mature riparian setting. This should not be considered a failure. Eventually, the rate of erosion of the terraces will slow as the root cohesion becomes established.

For perspective, the possibility of continued bank erosion post-project should be considered relative to the anticipated long-term trajectory of the site under existing conditions. If left untreated, channel migration would continue to occur and erode into the high terraces, releasing much larger volumes of sediment and endangering road, sewer line, and mature native oak and sycamore trees. Meanwhile, the existing terraces would remain high and relatively dry, sparsely vegetated, with root systems incapable of effectively stabilizing the high channel banks. If left alone, the channel would eventually create its own inset floodplain through the process of erosion and deposition, on which mature vegetation would eventually become established. The short-term result of this trajectory would be increased downstream sedimentation and an extended duration of time with degraded floodplain functions; the long-term trajectory would likely be eventual stabilization and establishment of a lower, discontinuous set of vegetated floodplain bench features.

The project as proposed would accelerate this sequence, avoiding the shorter term detrimental phase, and immediately improve habitat value.

9.0 CONSTRUCTION COST ESTIMATE
We estimate a construction cost of between 1.5 and 2.3 million dollars, based on recent bid prices for similar work. Actual costs may vary considerably, given the significant number of unknowns at this point. A detailed construction cost estimate will be provided with the completed design documents.
10.0 REFERENCES

Dudek, 2017. Final Arroyo Burro Open Space Restoration Biological Site Assessment.
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November 2017


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January 2005.

Technical Memorandum prepared for City of Santa Barbara. February, 2018. Included as Appendix B of this design report.
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The proposed Arroyo Burro Open Space Restoration project (Project) has the potential to impact sensitive biological resources. No special-status plant species were observed; however, Dudek recommends focused floristic surveys for special-status plant species during the appropriate blooming periods and an arborist survey. Since the Project is within Arroyo Burro channel and riparian habitat, recommendations to avoid and minimize impacts to hydrology and aquatic habitat include a water diversion/dewatering plan and implementation, a stormwater pollution prevention plan, and wetland and riparian protection measures. No special-status wildlife species were observed but there is potential to occur; therefore, survey recommendations for nesting birds, southern western pond turtle, California legless lizard, Cooper’s hawk, white-tailed kite, yellow-breasted chat, loggerhead shrike, yellow warbler, tidewater goby, southern steelhead, pallid bat, and Townsend’s big-eared bat are included. Sensitive vegetation community California sycamore woodland and ESHA riparian habitat occur within the Project site and a wetland and upland habitat restoration and monitoring plan, jurisdictional delineations, and associated permits are recommended to avoid, minimize, and mitigate for impacts. Lastly, worker education, monitoring, and reporting are recommended to document compliance with the previously stated recommendations and to provide documentation to the appropriate agencies.

1 INTRODUCTION

Dudek has prepared this Biological Site Assessment on behalf of the City of Santa Barbara (City) to identify the potential for biological resources to occur within and adjacent to the proposed Arroyo Burro Open Space Restoration project (Project). The Project involves the restoration of 1,600 linear feet of Arroyo Burro and the creation of over an acre of floodplain habitat as part of the overall enhancement and restoration of Arroyo Burro. The report’s primary intent is to support the City’s California Environmental Quality Act (CEQA) and Local Coastal Plan (LCP) reporting and review process and for the proposed Project. The report also provides recent observations, analyses, and avoidance and minimization recommendations that will be useful in future consultation and/or permit application review, if required, by applicable regulatory resource agencies, including the Department of Fish and Wildlife (CDFW; formerly California Department of Fish and Game; CDFG), the U.S. Army Corps of Engineers (USACE), the Central Coast Regional Water Quality Control Board (RWQCB), the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the California Coastal Commission (CCC).

1.1 Site Location and Surrounding Area

The Project is located in the Arroyo Burro Open Space at 1425 Las Positas Road, as shown in Figure 1. The Project will occur within 4.5 acres of creek side habitat within two City owned parcels that equal 20 acres. Existing land uses to the north of the Project site include a combination of open space and residential
development. To the east is Las Positas Road and the recreational open space of Elings Park. To the south is residential development including that which is occurring on Alan Road. Areas to the west include continuous open space.

1.2 Proposed Project Description

The City is proposing creek restoration efforts along 1,600 feet of Arroyo Burro to remove anthropogenic structures in the creek, regrade portions of the channel to increase floodplain habitat, install bio-technical methods of bank stabilization, remove non-native vegetation, and install native plants to reestablish diverse native riparian and upland habitats. Restoring this creek section will significantly increase the overall creek hydrology and habitat; promoting the return and increase in native wildlife and native plant species diversity and health. The City proposes to use the open areas to the west of Arroyo Burro as access routes as well as the main construction equipment and supply staging area. Equipment will be stored, maintained and fueled a minimum of 50 feet from the creek channel.
FIGURE 1
Project Location

Biological Site Assessment for the Arroyo Burro Open Space Restoration Project

SOURCE: NAIP 2016 IMAGERY
Surface water is perennial in the creek channel, therefore, water diversion will be required during construction to realign a portion of the channel. A catchment basin will be constructed and water will be conveyed via pipes to a settling basin downstream of the work area. Semi-trailer end dump trucks will be used to import large rock, cobble, and gravel to construct portions of the channel. An excavator, backhoe, scraper, and front-end loader will be used to grade and place the rock materials.

To prevent sediment from entering the creek channel, silt fencing will be installed. After construction, areas of disturbance on the creek banks will be covered with coconut fiber fabric and planted with native plant species. Restoration will include installment of approximately 8,000 native plant species and a drip irrigation system. Boulder weirs and biotechnical planting will be used in the creek bed and lower banks for stabilization.

During construction, protective fencing will be installed around existing native trees to protect them from heavy equipment. A total of 16 non-native eucalyptus trees and one blue elderberry (*Sambucus nigra ssp. caerulea*) are proposed for removal. A total of 71 willows (*Salix* sp.) will be disturbed; however, when feasible, willow root wads will be avoided and above ground branches and trunks will be re-used as willow stakes during revegetation. Approximately 1,000 willow stakes will be installed along the channel toe. Additional non-native plant removal will include giant reed (*Arundo donax*), Cape-ivy (*Delairea odorata*), English ivy (*Hedera helix*), and castor bean (*Ricinus communis*)

2. **REGULATORY FRAMEWORK**

This section outlines the federal, state, and local regulations pertinent to the biological resources located on the Project site. Some of the biological resources that would be affected by the proposed Project are regulated by resource agencies, which often overlap in jurisdiction. This section identifies and discusses the various programs regulating state- and/or federally listed threatened or endangered plants and wildlife and jurisdictional aquatic/ hydrological features, such as drainages, streambeds, riparian habitat, and wetlands.

2.1 Sensitive Vegetation Communities Defined

For the purpose of this Biological Assessment, sensitive vegetation communities are those plant communities or habitats that are defined as:

- Alliances on CDFW’s Natural Communities List with a State rank of S1, S2, or S3 (CDFG 2010);
- Terrestrial natural communities in Holland (1986) receiving an asterisk (*);
- Vegetation communities or habitats listed in the California Natural Diversity Database (CDFW 2017a); or
• Considered locally sensitive.

2.2 Special-Status Plant Species Defined

For the purpose of this Biological Assessment, special-status plant species are those plants with the following designations:

• Designated as either rare, threatened, or endangered by CDFW or the USFWS and are protected under either the California Endangered Species Act (CESA) (Fish & Game Code, § 2050 et seq.) or federally Endangered Species Act (ESA) (16 U.S.C. § 1531 et seq.), or meet the CEQA definition for endangered, rare, or threatened (Cal. Code Regs., tit. 14, § 15380(b),(d));

• Are candidate species being considered or proposed for listing under these same acts; or

• Are of expressed concern to resource/regulatory agencies or local jurisdictions. This includes plants included on the CDFW *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2017b) as well as species with a California Rare Plant Ranking (CRPR) of 1, 2, or 4 in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2017). Plants included on the CNPS Inventory are classified as follows:
  - CRPR 1A: plants presumed extinct in California;
  - CRPR 1B: plants rare, threatened, or endangered in California and elsewhere;
  - CRPR 2: plants rare, threatened, or endangered in California, but more common elsewhere; and
  - CRPR 4: plants of limited distribution – a watch list (Not usually protected under CEQA unless a locally rare plant species; however CRPR 4 included for consideration under CEQA and CCA).

2.3 Federal Endangered Species Act (1973)

The federal Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, is administered by the United States Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration National Marine Fisheries Service. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. The ESA defines an endangered species as “any species that is in danger of extinction throughout all or a significant portion of its range.” A threatened species is defined as “any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Under the provisions of
Section 9(a)(1)(B) of the ESA (16 U.S.C. 1531 et seq.), it is unlawful to “take” any listed species. Take is defined in Section 3(19) of the ESA as, “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” A Final Rule published in the Federal Register on November 8, 1999 (64 FR 60727–60731), further defines “harm” as any act that kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns (e.g., nesting or reproduction) of fish or wildlife. Further, the USFWS, through regulation, has interpreted the terms “harm” and “harass” to include certain types of habitat modification that result in injury to or death of species, which therefore are defined as forms of take. These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species.

In a case where a property owner seeks permission from a federal agency for an action that could affect a federally listed plant or wildlife species, the property owner and agency are required to consult with USFWS. Take prohibitions in Section 9 of the ESA (16 U.S.C. 1531 et seq.) do not expressly encompass all plants. Property owners may take listed plant species without violating the take prohibition if:

- The proposed development is private and does not require federal authorization or permit.
- There are no special federal regulations under Section 4(d) that prohibit take of the plant species.

Section 9(a)(2) of the ESA (16 U.S.C. 1531 et seq.) addresses the protections afforded to listed plants. Unlike the CESA, the ESA provides protection to invertebrate species by listing them as threatened or endangered.

### 2.4 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was originally passed in 1918 as four bilateral treaties, or conventions, for the protection of a shared migratory bird resource (16 U.S.C. 703–712). The primary motivation for the international negotiations was to stop the “indiscriminate slaughter” of migratory birds by market hunters and others. Each of the treaties protects selected species of birds and provides for closed and open seasons for hunting game birds. The MBTA protects over 800 species of birds, which are listed in the Code of Federal Regulations (50 CFR 10.13).

The MBTA prohibits the “take” of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, take is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so. Additionally, Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds” (Executive Order no. 13186) requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations. The Executive Order requires federal agencies to work with the USFWS to develop a memorandum of understanding. The USFWS reviews actions that might affect these species.
2.5 California Department of Fish and Wildlife Jurisdiction

CDFW asserts jurisdiction over rivers, streams, lakes, and riparian vegetation associated with these features. The CDFW jurisdiction is defined to the bank of the streams/channels or to the limit of the adjacent riparian vegetation (California Fish and Game Code 1600-1617), whichever extends further.

2.6 California Coastal Act

Under the California Coastal Act (CCA), the CCC regulates impacts to wetlands in the “coastal zone” and requires a coastal development permit for almost all development within this zone. From three miles seaward the coastal zone generally extends approximately 1,000 yards inland. In less developed areas, it can extend up to 5 miles inland from the mean high tide line, but can also be considerably less than 1,000 yards inland in developed areas.

The CCA also protects designated sensitive coastal areas by providing additional review and approvals for proposed actions in these areas. Section 30121 of the CCA defines wetlands as “...lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, swamps, mudflats, and fens...” The CCA allows diskig, filling, or dredging of wetlands for certain uses, such as restoration. The CCA also directs each city or county within the coastal zone to prepare a Local Coastal Program (LCP) for Coastal Commission certification (CCC 2014).

2.7 Local Laws, Ordinances, Regulations, and Standards

In addition to the federal and state regulations identified above, the following local laws, ordinances, regulations, and standards apply to the environmental review of potential impacts on biological resources as a result of the proposed project.

2.7.1 City of Santa Barbara's General Plan

The City of Santa Barbara’s General Plan (City of Santa Barbara 1979, amended 2004, last amended 2011) identifies goals, policies, and implementation actions to protect the City’s natural resources including air quality, biology, surface and ground water resources, noise, and visual resources. Policies are set forth for the protection of these resources accordingly. The general relevant General Plan policies are as follows.

City of Santa Barbara's General Plan 2011

Biological Resources Policies

ER11. Native and Other Trees and Landscaping. Protect and maintain native and other urban trees, and landscaped spaces, and promote the use of native or Mediterranean drought-tolerant species in landscaping to save energy and water, incorporate habitat, and provide shade.
ER12. **Wildlife, Coastal and Native Plant Habitat Protection and Enhancement.** Protect, maintain, and to the extent reasonably possible, expand the City’s remaining diverse native plant and wildlife habitat, including ocean, wetland, coastal, creek, foothill, and urban-adapted habitats.

**ER13. Trail Management.** Existing and future trails along creeks in other natural settings shall be managed for both passive recreational use and as native species habitat and corridors.

**Hydrology, Water Quality and Flooding Policies**

**ER19. Creek Resources and Water Quality.** Encourage development and infrastructure that is consistent with City policies and programs for comprehensive watershed planning, creeks restoration, water quality protection, open space enhancement, storm water management, and public creek and water awareness programs.

**ER21. Creek Setbacks, Protection, and Restoration.** Protection and restoration of creeks and their riparian corridors is a priority for improving biological values, water quality, open space and flood control in conjunction with adaptation planning for climate change.

### 2.7.2 City of Santa Barbara's Local Coastal Plan 2004

The California Coastal Commission regulates coastal development in the City of Santa Barbara through the certified local coastal plan (City of Santa Barbara 1981, amended 1994, last amended 2004). A local coastal plan is a document which describes local government’s land use plans, zoning ordinances, zoning district maps, and implementing actions which, when taken together, meet the requirements of and implement the provisions of the Coastal Act at the local level. Policies are set forth for the protection of these resources. General relevant Local Coastal Plan policies are as follows.

**General Biotic Resources**

**Policy 6.1** The city, through ordinance, resolutions, and development controls, shall protect, preserve, and, where feasible, restore the biotic communities designated in the City’s Conservation Element of the General Plan and any future annexations to the City, consistent with PRC Section 30240.

**Creek Environments**

**Policy 6.8** The riparian resources, biological productivity, and water quality of the City’s coastal zone creeks shall be maintained, preserved, and, where feasible, restored.

**Policy 6.9** The City shall support the programs, plans, and policies of all governmental agencies, including those of the Regional Water Quality Control Board with respect to best management practices for Santa Barbara's watersheds and urban areas.
Policy 6.10  The City shall require a setback buffer for native vegetation between the top of bank and any proposed project. This setback will vary depending upon the conditions of the site and the environmental impact of the proposed project.

3  METHODOLOGY

3.1  Literature Review

The location of documented sensitive vegetation communities, special-status plant species, and special-status wildlife species present near the Project site and that have potential to occur on-site were identified through a query of the California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service (USFWS) database to a distance of 3.5-mile from the Project site (CDFW 2017). Additional data sources were also referenced including the California Native Plant Society’s online Inventory of Rare and Endangered Plants (CNPS 2017), and the on-line database Calflora: Information about California Plants for Education, Research and Conservation (Calflora 2017). A 3.5-mile radius from the Project site was queried for sensitive biological resources instead of the standard nine U.S. Geological Survey 7.5-minute quadrangle maps since the habitats north of the Santa Barbara foothills vary greatly from the Project site. Additional literature reviewed includes review of Existing Conditions Study of the Arroyo Burro, Mission, Sycamore, and Laguna Creek Watersheds (Questa 2005).

3.1.1  Project Information from the City of Santa Barbara

The following plans, technical reports, project descriptions, and computer aided design (CAD) files were provided by the City of Santa Barbara for use in this Biological Site Assessment:

- Lower Arroyo Burro Restoration Project, Draft Concept Level Design (Waterways Consulting 2017)
- Biological Resources Analysis, Riparian Restoration and Management Plan, Las Positas Valley (Rachel Tierney Consulting 2000)
- Eucalyptus Grove (Althouse and Meade 2000a)
- Final Environmental Impact Report, Veronica Meadows Specific Plan (URS Corporation 2005)
- Monarch Butterfly habitat at Las Positas Valley Development (Althouse and Meade 2000b)
- Monarch Butterfly Site Assessment (Althouse and Meade 2000c)
- Riparian corridor edge (Althouse and Meade 2000d)
- Riparian setbacks (Althouse and Meade 2000e)
• Tidewater Goby, Red-Legged Frog, and Southwestern Pond Turtle focused survey results (Hunt 1999)

• CAD: Surrounding parcels, creek wetland habitats, project outline, and limits of grading

3.2 Field Surveys

Dudek conducted two separate site visits on August 31 and September 5, 2017 (Table 1) to assess the existing biological conditions, conduct vegetation mapping, conduct a habitat assessment for special-status plant and special-status wildlife species, and map California Department of Fish and Wildlife jurisdiction. The surveys consisted of documenting biological resources within Arroyo Burro and the potential staging/storage areas. During the surveys Dudek biologist Heather Moine documented occurrences of plant and wildlife species occurring within Arroyo Burro and at the staging/storage areas. Identification of birds was assessed both visually (using binoculars [8x42 mm]) and by sound via vocalizations.

Table 1. Survey Dates, Times, and Conditions

<table>
<thead>
<tr>
<th>Date / Time</th>
<th>Site Conditions</th>
<th>Biologists</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 31, 2017</td>
<td>Clear, 0-10% cloud cover, 2-3 mile per hour winds, 74-87 degrees Fahrenheit</td>
<td>Heather Moine</td>
</tr>
<tr>
<td>7:55 am – 11:45 am</td>
<td>Clear, 0% cloud cover, 3 mile per hour winds, 74-78 degrees Fahrenheit</td>
<td>Heather Moine</td>
</tr>
<tr>
<td>September 5, 2017</td>
<td>Clear, 0% cloud cover, 3 mile per hour winds, 74-78 degrees Fahrenheit</td>
<td>Heather Moine</td>
</tr>
<tr>
<td>12:15 pm – 3:15 pm</td>
<td>Clear, 0% cloud cover, 3 mile per hour winds, 74-78 degrees Fahrenheit</td>
<td>Heather Moine</td>
</tr>
</tbody>
</table>

3.2.1 Biological Survey Area

The field surveys for the Project site were conducted within accessible natural areas where potential habitat for the sensitive vegetation communities, special-status plant species, and special-status wildlife species were present. This resulting biological survey area (BSA) included the greatest extent of the two associated City parcels totaling 20 acres, limits of grading, and project outline, as shown in Figure 1.

3.3 Vegetation Community Mapping

Vegetation mapping was performed in the field, through interpretation of field maps with a high quality aerial photographic base (CIRGIS 2017). A Dudek GIS technician later digitized the delineated vegetation boundaries from field efforts. Vegetation mapping covered all areas within the 20-acre City Park, beyond the project boundaries.

In September 2010, the CDFW, Vegetation Classification and Mapping Program, published the List of Vegetation Alliances and Associations (CDFG 2010) and Natural Communities List, which replaces all other lists of terrestrial natural communities and vegetation types developed for the California Natural Diversity Database.
(CNDDB). The “list” uses the scientific name of the dominant species in that alliance as the alliance name based on the *Manual of California Vegetation*, Second Edition (MCV2; Sawyer et. al 2009), which is the California expression of the National Vegetation Classification. This vegetation classification system focuses on a quantified, hierarchical approach that includes both floristic (plant species) and physiognomic (community structure and form) factors as currently observed (as opposed to predicting climax or successional stages). This system replaced the naming system in a *Preliminary Description of the Terrestrial Natural Communities of California* (Holland 1986), which until 2010 was the standard vegetation community nomenclature for the CNDDB and many other State and local agencies and plans. The nomenclature for on-site vegetation communities reflects the MCV2 and NCL classification system. It should be noted that portions of the site contained an alliance or vegetation community not included in as part of MCV2 or NCL vegetation classification systems. In these areas, the vegetation was mapped and identified by the dominant plant species.

### 3.4 Habitat Assessment

Habitat characteristics observed in the field were compared with characteristics of habitat known to be occupied by special-status plant species and special status wildlife species potentially occurring on the Project site. All plant and wildlife species detected within the Project site were documented during the survey. Scientific names of plant species followed *the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2017) and common names follow the List of Vegetation Alliances and Associations (CDFW 2010) or the United States Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2017). Scientific and common names of animals follow Crother (2012) for reptiles and amphibians, American Ornithologists’ Union (AOU) (2017) for birds, Wilson and Reeder (2005) for mammals, North American Butterfly Association (NABA) (2016) or SDNHM (2002) for butterflies, and Moyle (2002) for fish. A list of plant and wildlife species identified during the surveys was created and photographs were taken to document site conditions.

### 3.5 California Department of Fish and Wildlife Jurisdiction

CDFW jurisdiction was delineated based on watercourse characteristics present in the field, which include surface flow, sediment transportation and sorting, physical indicators of channel forms, channel morphology, and riparian habitat associated with a streambed. CDFW jurisdiction was identified as the furthest extent of the feature from top of bank to top of bank or where a predominance of riparian vegetation was associated with the stream channel.

### 3.6 Survey Limitations

Field surveys were general in nature and did not follow established guidelines or focus on a particular species. Additionally, responsible or trustee agency developed protocol surveys were not conducted as part of this biological assessment survey. The field surveys focused on vegetation mapping and habitat suitability,
however, observed special-status species and the habitat(s) utilized were documented. All surveys were conducted during daylight hours under weather conditions that did not preclude observation of special-status plant species (e.g., surveys were not conducted during heavy fog or rain).

4 RESULTS

A total of 11 vegetation communities, as identified in MCV2 (Sawyer et al. 2009), and two additional land cover types were identified during the surveys. Arroyo Burro existing conditions are described in Section 4.1. Vegetation communities and wildlife habitats are described in Section 4.2. Habitat suitability for special-status plant species is discussed in Section 4.3. Habitat suitability for special-status wildlife species is described in Section 4.4. Sensitive vegetation communities are discussed in Section 4.5. CDFW jurisdiction is described in Section 4.6.

4.1 Lower Arroyo Burro Existing Conditions

The Project site is located within the Arroyo Burro Watershed (Questa 2005). The Arroyo Burro Watershed is the least developed of the Santa Barbara Watersheds and has the least amount of impervious surface (Questa 2005). Arroyo Burro Watershed has an average of slightly over 8% impervious surface area (including areas within the U.S. Forest Service). The creek often has year-round water flow in the upper San Roque tributary, along portions of the creek north of highway 101, and in the Las Positas Valley (Questa 2005).

The Arroyo Burro headwater is located in the Santa Ynez Mountains and travels south (approximately seven miles), through the Project site, until it discharges into a tidal estuary and lagoon located at Arroyo Burro Beach County Park. The lagoon at Arroyo Burro and downstream of Cliff Drive Bridge is an ecologically important aquatic habitat supporting a variety of special-status wildlife species.

As shown in Figure 1, the section of Arroyo Burro within the BSA is oriented north south and parallel to Las Positas Road and is dominated by riparian vegetation. Flowing water was present in the stretch of Arroyo Burro within the BSA during 2017 field surveys. The creek along the Project site includes a natural earthen bottom and the creek banks are composed of a dense canopy and dense riparian understory arroyo willow thickets, coast live oak woodland, California sycamore woodland, giant reed breaks, and eucalyptus groves. This well-developed riparian corridor would be suitable for special-status plant species special-status wildlife species, riparian nesting birds, migrating birds, fish, and common reptiles and amphibians.

4.2 Vegetation Communities and Wildlife Habitats

Vegetation communities and land cover vary greatly within the BSA. The vegetation within the riparian corridor is dominated by arroyo willow, California sycamore (Platanus racemosa), giant reed, coast live oak (Quercus agrifolia), and Tasmanian bluegum (Eucalyptus globulus), as shown in Figure 2. Ruderal non-native
vegetation including non-native grasses, black mustard (*Brassica nigra*), castorbean (*Ricinus communis*), and prickly lettuce (*Lactuca serriola*) compose the land cover within the western portion of the BSA within the proposed equipment storage and construction staging areas.

A total of 11 vegetation communities, as identified in MCV2 (Sawyer et al. 2009), were identified during the surveys of the 20-acre City property: coast live oak woodland, California sycamore woodland, eucalyptus groves, myoporum groves, arroyo willow thickets, arroyo willow thickets-giant reed breaks, blue elderberry stands, coyote brush scrub, coyote brush scrub-poison oak scrub, lemonade berry scrub, and poison oak scrub. Two additional land cover types, ruderal and ornamental, were mapped. The vegetation communities and other land cover types are listed in *Table 2* and further described below. *Figure 2* displays vegetation communities and wildlife habitats within the BSA. Photograph documentation of the vegetation communities and land cover types is provided in *Appendix A*. 
Table 2. Summary of Vegetation Communities and Land Cover Types in the BSA

<table>
<thead>
<tr>
<th>Physiognomic Category</th>
<th>General Habitat</th>
<th>Vegetation Communities</th>
<th>Rarity Ranking Global/State</th>
<th>Within Project Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodland and Tree Clusters</td>
<td>Woodlands and Tree Clusters (Planted or Naturally Occurring)</td>
<td>Coast Live Oak Woodland (CLOW)</td>
<td>G5/S4</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>California Sycamore Woodland (CSW)</td>
<td>G3/S3</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eucalyptus Groves (Semi-natural Stand) (EG[SNS])</td>
<td>NA</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Myoporum Groves (Semi-natural Stand) (MP[SNS])</td>
<td>NA</td>
<td>No</td>
</tr>
<tr>
<td>Shrubland Alliances and Stands (Wetland)</td>
<td>Riparian Scrub</td>
<td>Arroyo Willow Thickets (AWT)</td>
<td>G4/S4</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arroyo Willow Thickets-Giant Reed Breaks (Semi-natural Stand) (AWT/GRB[SNS])</td>
<td>G4/S4</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Giant Reed Breaks (Semi-natural Stand) (GRB[SNS])</td>
<td>NA</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cut - Giant Reed Breaks (Semi-natural Stand) (GRB[SNS])</td>
<td>NA</td>
<td>Yes</td>
</tr>
<tr>
<td>Shrubland Alliances and Stands (Upland)</td>
<td>Coastal Scrub</td>
<td>Blue Elderberry Stands (BES)</td>
<td>G3/S3</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coyote Brush Scrub (CYS)</td>
<td>G5/S5</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coyote Brush Scrub-Poison Oak Scrub (CYS-POS)</td>
<td>G5/S5</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lemonade Berry Scrub (LBS)</td>
<td>G3/S3</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ornamental Plantings (ORN)</td>
<td>NA</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Poison Oak Scrub (POS)</td>
<td>G4/S4</td>
<td>No</td>
</tr>
<tr>
<td>Herbaceous Alliances and Stands</td>
<td>Grassland/Forb Dominated</td>
<td>Ruderal (RUD)</td>
<td>NA</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Notes:
- NA – Not identified as a vegetation community in Sawyer et al. (2009) or non-native species with no ranking
- Status Definitions:
  - Global Ranking - The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range.
  - State Ranking - The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.
  - G1, S1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.
  - G2, S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.
  - G3, S3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.
  - 0.1: very threatened
  - 0.2: threatened
Vegetation Communities and Wildlife Habitats

Biological Site Assessment for the Arroyo Burro Open Space Restoration Project

Vegetation Communities
- AWT - Arroyo willow
- AWT/GRB(SNS) - Arroyo willow-giant reed (semi-natural stand)
- BES - Blue elderberry stands
- CLOW - Coast live oak woodland
- CSW - California sycamore woodlands
- CYS - Coyote brush scrub
- CYS-POS - Coyote brush-poison oak
- EG(SNS) - Eucalyptus groves (SNS)
- GRB(SNS) - Giant reed breaks (SNS)
- Cut GRB(SNS) - Cut giant reed breaks (SNS)
- LBS - Lemondae berry scrub
- MP(SNS) - Myoporum groves (SNS)
- ORN - Ornamental plantings
- POS - Poison oak scrub
- RUD - Ruderal

FIGURE 2

SOURCE: BING MAPS IMAGERY
Date: 10/25/2017  -  Last saved by: nisaieva  -  Path: Z:\Projects\j1060600\MAPDOC\BSA Figures\Figure 2_Vegetation Communities.mxd
4.2.1 Coast Live Oak Woodland

The coast live oak woodland (CLOW) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) as state rank 5 (not sensitive) and could be considered ESHA under the CLUP if this vegetation community is associated with wetlands or riparian habitat. Coast live oak woodland includes coast live oak as the dominant or co-dominant species in the tree canopy. The coast live oak woodland alliance has an open to continuous canopy less than 30 meters (98 feet) in height. The shrub layer is sparse to intermittent, and the herbaceous layer is sparse or grassy. The coast live oak woodland vegetation community occurs on alluvial terraces, canyon bottoms, streambanks, slopes, and flats (Sawyer et al. 2009).

4.2.2 California Sycamore Woodland

The California sycamore woodlands (CSW) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) as state rank 3 (sensitive) and could be considered ESHA under the CLUP if this vegetation community is associated with wetlands or riparian habitat. California sycamore woodland includes California sycamore as the dominant or co-dominant tree in the canopy. This alliance forms an open to intermittent tree canopy less than 35 meters (115 feet) with an open to intermittent shrub layer and sparse or grassy ground layer. The California sycamore woodlands vegetation community occurs in gullies, intermittent streams, springs, seeps, stream banks, and terraces adjacent to floodplains that are subject to high-intensity flooding (Sawyer et al. 2009).

4.2.3 Eucalyptus Groves (Semi-Natural Stand)

The eucalyptus grove (semi-natural stand) (EG[SNS]) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010). Eucalyptus groves do not have a rarity ranking as it is a non-native plant community that is widespread; therefore, it is not considered sensitive. Eucalyptus woodland is a distinct "naturalized" vegetation type that is considered a woodland habitat. It typically consists of monotypic stands of introduced Australian eucalyptus trees (Eucalyptus spp.). The understory is either depauperate or absent owing to shade and the possible allelopathic (toxic) properties of the eucalyptus leaf litter.

4.2.4 Myoporum Groves (Semi-Natural Stand)

The myoporum groves (semi-natural stand) (MP[SNS]) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) but does not have a state rank as it is composed of non-native species. Myoporum groves contain myoporum (Myoporum laetum) as the dominant species in the tree canopy. Myoporum groves occur where myoporum comprises greater than 60 percent relative cover in the tree layer. The groves have an open to continuous tree canopy less than 18 meters (59 feet) in height. Understory shrubs are infrequent or common and the herbaceous layer is simple to diverse. Throughout central and southern California, myoporum groves semi-natural woodland stands occurs in coastal canyons, washes, slopes, riparian areas, and roadsides. Myoporum trees form dense single-species stands in coastal areas (Sawyer et al. 2009).
4.2.5 Arroyo Willow Thickets

The arroyo willow thickets (AWT) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) as state rank 4 (not sensitive) and could be considered ESHA under the CLUP if this vegetation community is associated with wetlands or riparian habitat. Arroyo willow thickets have an open to continuous shrub canopy cover less than 10 meters (33 feet) in height and variable herbaceous layer. Arroyo willow thickets communities are found in stream banks and benches, slope seeps, and stringers along drainages (Sawyer et al. 2009).

4.2.6 Arroyo Willow Thickets-Giant Reed Breaks (Semi-Natural Stand)

The arroyo willow thickets-giant reed breaks (semi-natural stand) (AWT-GRB[SNS]) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) as state rank 4 (not sensitive) and could be considered ESHA under the CLUP if this vegetation community is associated with wetlands or riparian habitat. Arroyo willow thickets-giant reed break (semi-natural stand) have a co-dominance of arroyo willow and giant reed (Sawyer et al. 2009).

4.2.7 Giant Reed Breaks (Semi-Natural Stand)

Giant reed breaks (semi-natural stand) (GRB[SNS]) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) but does not have a state rank as it is composed of non-native species. Giant reed is dominant in the herbaceous layer and emergent trees may be present at low cover. Giant reed break (semi-natural stand) occur in riparian areas, along low-gradient streams, ditches, and coastal marshes (Sawyer et al. 2009).

4.2.8 Cut Giant Reed Breaks (Semi-Natural Stand)

Cut giant reed breaks (semi-natural stand) consists of recently cut and removed giant reed. The areas are void of other vegetation communities as re-establishment or plant installation have not occurred.

4.2.9 Blue Elderberry Stands

The blue elderberry stands (BES) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) as state rank 3 (sensitive) and could be considered ESHA under the CLUP if this vegetation community is associated with wetlands or riparian habitat. Blue elderberry stands include blue elderberry (Sambucus nigra ssp. caerulea) as the dominant species (greater than 50 percent cover) in the shrub canopy. The herbaceous ground layer is variable and usually grassy. Throughout California, the blue elderberry stand shrubland alliance occurs on stream terraces and in bottomlands; localized areas occur in upland settings (Sawyer et al. 2009).
4.2.10 Coyote Brush Scrub

The coyote brush scrub (CYS) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) as state rank 5 (not sensitive). The coyote brush scrub alliance includes coyote brush (*Baccharis pilularis*) as the dominant or co-dominant shrub in the canopy. Coyote brush scrub has a variable shrub canopy less than 3 meters (10 feet) in height and a variable ground layer. Throughout California, the coyote brush scrub alliance occurs on stream sides, stabilized dunes of coastal bars, river mouths, spits along the coastline, coastal bluffs, open slopes, ridges, and terraces. Soils are moderately deep to deep, well-drained sandy loams and sandy clay loams (Sawyer et al. 2009).

4.2.11 Coyote Brush Scrub-Poison Oak Scrub

The coyote brush scrub-poison oak scrub (CYS-POS) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) as state rank 4 (not sensitive). Coyote brush scrub-poison oak scrub vegetation community have a co-dominance of coyote brush and poison oak (*Toxicodendron diversilobum*) (Sawyer et al. 2009).

4.2.12 Lemonade Berry Scrub

The lemonade berry scrub (LBS) alliance is listed in MCV2 (Sawyer et al. 2009) and NCL (CDFG 2010) as state rank 3 (sensitive). Lemonade berry scrub contains lemonade berry (*Rhus integrifolia*) as the dominant or co-dominant species in the shrub canopy. This alliance includes a shrub canopy that is open to continuous, two tiered, and less than 5 meters (16 feet) in height and an open herbaceous layer. Lemonade berry scrub often occurs on gentle to abrupt slopes and coastal bluffs of variable aspect in loam and clay soils (Sawyer et al. 2009).

4.2.13 Ornamental Plantings

The ornamental plantings (ORN) land cover type is not listed in MCV2 (Sawyer et al. 2009) or NCL (CDFG 2010) and it does not have a rarity ranking as it is comprised of non-native plants that is widespread; therefore, it is not considered sensitive.

4.2.14 Ruderal

The ruderal (RUD) land cover type is not listed in MCV2 (Sawyer et al. 2009) or NCL (CDFG 2010) and it does not have a rarity ranking as it is comprised of non-native plants that is widespread; therefore, it is not considered sensitive. The ruderal land cover consists of non-native vegetation including non-native grasses, black mustard, castorbean, and prickly lettuce.
4.3 Special-Status Plant Species

The CNDDB, CNPS Rare and Endangered Plant Inventory, and USFWS queries returned 12 special-status plant species that have been documented within 3.5-miles of the Project, as shown in Figure 3. During literature review of documents prepared for the Arroyo Burro Open Space area a total of three additional special-status plants were identified as having the potential to occur within the BSA. Based on Dudek’s habitat suitability analysis, one plant species has a high potential to occur, seven have moderate potential to occur and four have low potential to occur within the BSA, as described Table 3 and text below.

One special-status plant species was observed in the field. Monterey cypress (Hesperocyparis macrocarpa) is a CNPS CRPR 1B.2 species that occurs in closed-cone coniferous forest areas. This perennial evergreen tree is found native in Monterey County at elevations of 33 to 98 feet. Monterey cypress on the Project site are not natural and have been planted. Additionally, the Monterey cypress are outside the range of where the species naturally occurs, in Monterey County. Therefore, the Monterey cypress individuals on the Project site are not considered special-status and further discussion of this resource, including impacts to the species, are not included. No other special-status plant species were observed.

During the surveys, 61 plant species were observed of which 18 species (30 percent) are native to the region and 43 species (70 percent) are non-native. The list of plant species identified during the 2017 surveys is provided as Appendix B.

Table 3. Special-Status Plant Species and their Potential to Occur within the BSA

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Regulatory Status</th>
<th>Habitat Requirements/life form/blooming period/elevation (feet)</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atriplex coulteri</td>
<td>Coulter's saltbush</td>
<td>None/None/1B.2</td>
<td>Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/5–1,510</td>
<td>Suitable coastal scrub and valley and foothill grassland present. Site lacking alkaline soils. Not observed. Low potential to occur.</td>
</tr>
<tr>
<td>Atriplex serenana var. davidsonii</td>
<td>Davidson's saltscale</td>
<td>None/None/1B.2</td>
<td>Coastal bluff scrub, Coastal scrub; alkaline/annual herb/Apr–Oct/30–655</td>
<td>Suitable coastal scrub habitat present. Site lacking alkaline soils. Not observed. Low potential to occur.</td>
</tr>
<tr>
<td>Baccharis plummerae ssp. plummerae</td>
<td>Plummer's baccharis</td>
<td>None/None/4.3</td>
<td>Broadleaf upland forests, chaparral, Cismontane woodland, and Coastal scrub; rocky/perennial deciduous shrub/May-October/16-1,394</td>
<td>Suitable coastal scrub habitat present. Site lacking rocky soils. Not observed. Low potential to occur.</td>
</tr>
<tr>
<td>Calochortus late-flowered</td>
<td>None/None/1B.3</td>
<td>Chaparral, Cismontane</td>
<td>Suitable riparian</td>
<td></td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Habitat</td>
<td>Presence</td>
<td>Potential</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
<td>---------</td>
<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td><em>Fimbriatus</em></td>
<td>mariposa lily</td>
<td>woodland, Riparian woodland; often serpentine/perennial bulbiferous herb/June–Aug/900–6,250</td>
<td>woodlands present. Site lacking serpentine soils. Not observed. Low potential to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Calystegia sepium ssp. binghamiae</em></td>
<td>Santa Barbara morning-glory</td>
<td>Marshes and swamps (coastal)/perennial rhizomatous herb/Aug/15–15</td>
<td>No suitable coastal marsh or swamp habitat present. Not observed. Not expected to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Centromadia parryi ssp. australis</em></td>
<td>southern tarplant</td>
<td>Marshes and swamps (margins), Valley and foothill grassland (vernally mesic), Vernal pools/annual herb/May–Nov/0–1,575</td>
<td>Suitable valley and foothill grassland present. Not observed. Moderate potential to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Echinodorus berteroi</em></td>
<td>upright burhead</td>
<td>Freshwater wetlands, wetland-riparian/perennial aquatic herb/mid-summer–fall/0–984</td>
<td>Suitable wetland-riparian habitat present. Not observed. Moderate potential to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Horkelia cuneata var. puberula</em></td>
<td>mesa horkelia</td>
<td>Chaparral (maritime), Cismontane woodland, Coastal scrub; sandy or gravelly/perennial herb/Feb–July(Sep)/225–2,655</td>
<td>Suitable coastal scrub habitat present. Not observed. Low potential to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Lonicera subspicata var. subspicata</em></td>
<td>Santa Barbara honeysuckle</td>
<td>Chaparral, Cismontane woodland, Coastal scrub/perennial evergreen shrub/May–Aug(Dec–Feb)/30–3,280</td>
<td>Suitable coastal scrub habitat present. Not observed. High potential to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Monardella hypoleuca ssp. hypoleuca</em></td>
<td>white-veined monardella</td>
<td>Chaparral, Cismontane woodland/perennial herb/(Apr)May–Aug(Sept–Dec)/160–5,005</td>
<td>No suitable chaparral or cismontane woodland habitat present. Not observed. Low potential to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Nasturtium gambelii</em></td>
<td>Gambel's water cress</td>
<td>Marshes and swamps (freshwater or brackish)/perennial rhizomatous herb/Apr–Oct/15–1,085</td>
<td>No suitable freshwater or brackish marsh or swamp habitat present. Not observed. Not expected to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Quercus dumosa</em></td>
<td>Nuttall's scrub oak</td>
<td>Closed-cone coniferous forest, Chaparral, Coastal scrub; sandy, clay loam/perennial evergreen shrub/Feb–Apr(May–Aug)/45–1,310</td>
<td>Suitable coastal scrub habitat present. Not observed. Moderate potential to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Samolus</em></td>
<td>seaside brookweed</td>
<td>Coastal sage scrub,</td>
<td>Suitable wetland-riparian habitat present. Not observed. Moderate potential to occur.</td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Status</td>
<td>Habitats</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
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<td>----------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><em>parviflorus</em></td>
<td>Rare²</td>
<td>Chaparral, wetland-riparian/perennial herb/spring–summer/0–4,265</td>
<td>Habitat present. Not observed. Moderate potential to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Scrophularia atrata</em></td>
<td>None/None/1B.2</td>
<td>Closed-cone coniferous forest, Chaparral, Coastal dunes, Coastal scrub, Riparian scrub/perennial herb/Mar–July/30–1,640</td>
<td>Suitable coastal scrub and riparian scrub habitat present. Not observed. Moderate potential to occur.</td>
<td></td>
</tr>
<tr>
<td><em>Thelypteris puberula var. sonorensis</em></td>
<td>None/None/2B.2</td>
<td>Meadows and seeps (seeps and streams)/perennial rhizomatous herb/Jan–Sep/160–2,000</td>
<td>Suitable stream habitat present. Not observed. Moderate potential to occur.</td>
<td></td>
</tr>
</tbody>
</table>

Notes
1. Status Definitions: Federal / State / CRPR
   FE = Federally endangered
   ST = State threatened
   CRPR = California Rare Plant Rank
   1A (formerly List 1A): Plants presumed extirpated in California and either rare or extinct elsewhere
   1B (formerly List 1B): Plants that are rare, threatened, or endangered in California and elsewhere.
   2B (formerly List 2): Plants that are rare, threatened, or endangered in California, but more common elsewhere
     0.1: Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
     0.2: Fairly threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)
2. Rare Plants of Santa Barbara County (SBBG 2012)
4.3.1 Coulter's saltbush (*Atriplex coulteri*)

Coulter's saltbush (*Atriplex coulteri*) is a perennial herb in the goosefoot family (Chenopodiaceae) that is included on the CDFW list as a rank S2 (imperiled) and is identified as a CNPS CRPR 1B.2 (rare threatened, or endangered in California and elsewhere, fairly endangered in California). The Coulter’s saltbush is known from one occurrence within 3.5 miles of the site (CDFW 2017). Coulter’s saltbush occurs in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill vegetation communities and blooms from March to October (CNPS 2017). There is no suitable habitat within the Project site have the potential to support this species. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.2 Davidson's Saltscale (*Atriplex serenana var. davidsonii*)

Davidson’s saltscale (*Atriplex serenana var. davidsonii*) is an annual herb in the goosefoot family (Chenopodiaceae) and is identified as a CNPS CRPR 1B.2. Davidson’s saltscale is known from one occurrence within 3.5 miles of the site (CDFW 2017). Davidson’s saltscale occurs in coastal sage scrub and wetland-riparian vegetation communities and blooms April through October (CDFW 2017). There is no suitable habitat within the Project site have the potential to support this species. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.3 Plummer’s baccharis (*Baccharis plummerae ssp. plummerae*)

Plummer’s baccharis (*Baccharis plummerae ssp. plummerae*) is a CRPR 4.3 species that has a limited distribution in California, but is not very endangered in California. Plummer’s baccharis occurs in coastal areas of Santa Barbara County, Ventura County, and Los Angeles County, including occurrences on the Channel Islands, and in Riverside County, and San Luis Obispo County. It is a perennial deciduous shrub that occurs in broadleaf upland forests, chaparral, cismontane woodland, and coastal scrub habitats at elevations of 5 to 425 meters (16 to 1,394 feet) amsl. The blooming period of Plummer’s baccharis is from May through October. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.4 Late-Flowered Mariposa Lily (*Calochortus fimbriatus*)

Late-flowered mariposa lily (*Calochortus fimbriatus*) is a CRPR 1B.3 species that is rare or endangered in California and elsewhere, not very endangered in California. It is a perennial bulbiferous herb that occurs in chaparral, cismontane woodland, and riparian woodland habitat and often serpentine soils at elevations of 900–6,250 feet amsl. The blooming period for late-flowered mariposa lily is June through August. No individuals were observed; however, the surveys were limited and did not include surveying the entire site and were not performed during the blooming period of this species.
4.3.5 Santa Barbara Morning-Glory (*Calystegia sepium* ssp. *binghamiae*)

Santa Barbara morning-glory (*Calystegia sepium* ssp. *binghamiae*) is a perennial in the morning-glory family (Convolvulaceae) that is included on the CDFW list as a rank SX and is identified as a CNPS CRPR 1A. The Santa Barbara morning-glory is known from one occurrence within 3.5 miles of the site (CDFW 2017). Santa Barbara morning-glory is found in coastal marshes and swamps and blooms in August. There is no suitable habitat within the Project site have the potential to support this species. No individuals were observed; however, the surveys were limited and did not include surveying the entire site and were not performed during the blooming period of this species.

4.3.6 Southern Tarplant (*Centromadia parryi* ssp. *australis*)

Southern tarplant (*Centromadia parryi* ssp. *australis*) is an annual in the sunflower family (Asteraceae) that is included on the CDFW list as a rank S2 and is identified as a CNPS CRPR 1B.1. The southern tarplant is known from one occurrence within 3.5 miles of the site (CDFW 2017). Southern tarplant is found at the margins of marshes and swamps, in vernally mesic valley and foothill grassland, and in vernal pools and blooms from May to November. Southern tarplant is also found on the margins of riparian habitat dominated by non-native grasses. There is no suitable habitat within the Project site have the potential to support this species. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.7 Upright Burhead (*Echinodorus berteroi*)

Upright burhead (*Echinodorus berteroi*) is perennial aquatic herb in the water-plantain family (Alismataceae) that is included on the Rare Plants of Santa Barbara County list (SBBG 2012). In 1962 and 1963, upright burhead was documented and collected along Las Positas Road near Veronica Springs (Tierney Consulting and Hunt 2000). Upright burhead is found within freshwater wetlands, wetland-riparian habitat and blooms from mid-summer through fall. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.8 Mesa Horkelia (*Horkelia cuneata* var. *puberula*)

Mesa horkelia (*Horkelia cuneata* var. *puberula*) is a perennial herb in the rose family (Rosaceae) that is included on the CDFW list as a rank S1 (critically imperiled) and is identified as a CNPS CRPR 1B.1 (rare, threatened, or endangered in California and elsewhere, seriously endangered in California). The mesa horkelia is known from three occurrences within 3.5 miles of the site; of which one occurrence encompasses the Project area (CDFW 2017). Mesa horkelia is found in chaparral (maritime), cismontane woodland, and coastal scrub and blooms from February to September (CNPS 2017). No individuals were observed; however, the surveys were limited and did not include surveying the entire site.
4.3.9  Santa Barbara Honeysuckle (Lonicera subspicata var. subspicata)

Santa Barbara honeysuckle (Lonicera subspicata var. subspicata) is a perennial evergreen shrub this is identified as CNPS CRPR 1B.2. Santa Barbara honeysuckle occurs in chaparral, cismontane woodland, and coastal scrub habitats at elevations 30-3,280 feet amsl. It blooms from May through August and sometimes December through February. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.10  White-Veined Monardella (Monardella hypoleuca ssp. hypoleuca)

White-veined monardella (Monardella hypoleuca ssp. hypoleuca) is a perennial herb in the mint family (Lamiaceae) that is included on the CDFW list as a rank S2S3 and is identified as a CNPS CRPR 1B.3. The white-veined monardella is known from one occurrence within 3.5 miles of the site (CDFW 2017). White-veined monardella is found in chaparral and cismontane woodlands and known to bloom from April to December. There is no suitable habitat within the Project site have the potential to support this species. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.11  Gambel's Water Cress (Nasturtium gambelii)

Gambel’s water cress (Nasturtium gambelii) is a perennial herb in the mustard family (Brassicaceae) that is a federally endangered and state threatened species. This specie is also included on the CDFW list as a rank S1 and is identified as a CNPS CRPR 1B.1. Gambel's water cress is known from one occurrence within 3.5 miles of the site (CDFW 2017). Gambel’s water cress is found at the margins of marshes and swamps (freshwater or brackish) and blooms from April to October. There is no suitable habitat within the Project site have the potential to support this species. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.12  Nuttall's Scrub Oak (Quercus dumosa)

Nuttall’s scrub oak (Quercus dumosa) is perennial evergreen shrub in the oak and beech family (Fagaceae) that is included on the CDFW list as a rank S3 (vulnerable) and is identified as a CNPS CRPR 1B.1 (rare, threatened, or endangered in California and elsewhere, seriously endangered in California). Nuttall’s scrub oak is known from two occurrences within 3.5 miles of the site (CDFW 2017). Nuttall’s scrub oak is found in closed-cone coniferous forests, chaparral, and coastal scrub and blooms from February to August. The riparian vegetation and adjacent habitat along Arroyo Burro have moderate potential to support this species. The surveys were conducted outside the blooming period for this species; however, the species is a perennial and could be identifiable year round. No Nuttall’s scrub oak were observed during the survey, nor expected to occur on-site.
4.3.13  **Seaside Brookweed** (*Samolus parviflorus*)

Seaside brookweed (*Samolus parviflorus*) is a perennial herb in the primrose family and is included on the Rare Plants of Santa Barbara County list (SBBG 2012). Seaside brookweed is found in coastal sage scrub, chaparral, wetland-riparian habitat and blooms from spring through summer. Nuttall’s scrub oak is found in closed-cone coniferous forests, chaparral, and coastal scrub and blooms from February to August. Seaside brookweed was previously found near Veronica Springs (Tierney Consulting and Hunt 2000). No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.14  **Black-Flowered Figwort** (*Scrophularia atrata*)

Sonoran maiden fern (*Thelypteris puberula var. sonorensis*) is perennial rhizomatous herb in the fern family (Thelypteridaceae) that is included on the CDFW list as a rank S2 (imperiled) and is identified as a CNPS CRPR 2B.2 (endangered in California, fairly endangered in California). The Sonoran maiden fern is known from one occurrence within 3.5 miles of the site (CDFW 2017). Sonoran maiden fern is found in meadows and seeps (seeps and streams) and blooms from January to September. The riparian vegetation and adjacent habitat along Arroyo Burro have the potential to support this species. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.3.15  **Sonoran Maiden Fern** (*Thelypteris puberula var. sonorensis*)

Sonoran maiden fern (*Thelypteris puberula var. sonorensis*) is perennial rhizomatous herb in the fern family (Thelypteridaceae) that is included on the CDFW list as a rank S2 (imperiled) and is identified as a CNPS CRPR 2B.2 (endangered in California, fairly endangered in California). The Sonoran maiden fern is known from one occurrence within 3.5 miles of the site (CDFW 2017). Sonoran maiden fern is found in meadows and seeps (seeps and streams) and blooms from January to September. The riparian vegetation and adjacent habitat along Arroyo Burro have the potential to support this species. No individuals were observed; however, the surveys were limited and did not include surveying the entire site.

4.4  **Special-Status Wildlife Species – Including Critical Habitat**

The CNDDB and USFWS queries returned nine special-status wildlife species that have been documented within 3.5-miles of the Project site. 14 additional special-status wildlife species (California red-legged frog, western pond turtle, California legless lizard, coast-patch snake, sharp-shinned hawk, northern harrier, white-tailed kite, yellow-breasted chat, loggerhead shrike, yellow warbler, southern steelhead, pallid bat, San Diego desert woodrat, and big free-tailed bat) without CNDDB occurrences within 3.5-miles of the Project site were added based on potential for occurrence described in local reports reviewed (see *Section 3.1.*, Literature Review). Based on Dudek’s habitat suitability analysis, 10 of the wildlife species have moderate potential to occur and three have low potential occur within the Project site, as described in *Table 4* and the text below. No special-status wildlife species were observed in the field.
During the survey, 15 wildlife species were observed, including 13 bird species (American crow \([\textit{Corvus brachyrhynchos}]\), Anna’s hummingbird \([\textit{Calypte anna}]\), Bewick’s wren \([\textit{Thryomanes bewickii}]\), bushtit \([\textit{Psaltriparus minimus}]\), California scrub-jay \([\textit{Aphelocoma californica}]\), California towhee \([\textit{Melozone crissalis}]\), Cassin’s kingbird \([\textit{Tyrannus vociferans}]\), Eurasian collared-dove \([\textit{Streptopelia decaocto}]\), house finch \([\textit{Haemorhous mexicanus}]\), northern mockingbird \([\textit{Mimus polyglottos}]\), red-tailed hawk \([\textit{Buteo jamaicensis}]\), song sparrow \([\textit{Melospiza melodia}]\), and turkey vulture \([\textit{Cathartes aura}]\)), one mammal species (California ground squirrel \([\textit{Spermophilus (Otospermophilus) beecheyi}]\)), and one reptile species (western fence lizard \([\textit{Sceloporus occidentalis}]\)). No special-status wildlife species were observed. The list of wildlife species identified during 2017 surveys is provided as \textit{Appendix C}.

### Table 4. Special-Status Wildlife Species and their Potential to Occur within the BSA

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Regulatory Status</th>
<th>Primary Habitat Associations</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amphibians</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>\textit{Rana draytonii}</td>
<td>California red-legged frog</td>
<td>FT/SSC</td>
<td>Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands.</td>
<td>Suitable lowland streams and riparian woodland habitat present. Not observed, but protocol surveys were not conducted. Low potential to occur.</td>
</tr>
<tr>
<td><strong>Reptiles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>\textit{Actinemys pallida}</td>
<td>southern western pond turtle</td>
<td>None/SSC</td>
<td>Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter.</td>
<td>Suitable slow-moving streams with emergent vegetation and basking sites. Not observed. However focused surveys were not conducted. Moderate potential to occur.</td>
</tr>
<tr>
<td>\textit{Anniella pulchra}</td>
<td>California legless lizard</td>
<td>None/SSC</td>
<td>Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and sandy or loose, loamy soils.</td>
<td>Suitable habitat within the upland areas and floodplain. Not observed. However, the species lives mostly underground and is difficult to detect. Moderate potential to occur.</td>
</tr>
<tr>
<td>\textit{Salvadora hexalepis}</td>
<td>coast patch-nosed snake</td>
<td>None/SSC</td>
<td>Open grassland, coastal sage scrub, and open chaparral habitats.</td>
<td>Suitable open grassland and coastal sage scrub habitat present. Not observed. However, surveys were conducted outside the period when the species is most active (May and June), and may</td>
</tr>
</tbody>
</table>
Table 4. Special-Status Wildlife Species and their Potential to Occur within the BSA

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<thead>
<tr>
<th>Scientific Name</th>
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<th>Regulatory Status</th>
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<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thamnophis hammondii</td>
<td>two-striped gartersnake</td>
<td>None/SSC</td>
<td>Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools.</td>
<td>Suitable habitat is present, and the species is known to occur elsewhere along the south coast. Not observed. Low potential to occur.</td>
</tr>
<tr>
<td>Birds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accipiter cooperii</td>
<td>Cooper's hawk</td>
<td>None/WL (nesting)</td>
<td>Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water.</td>
<td>Suitable nesting habitat present within the mature trees. No raptor nests observed, and no Cooper’s hawks observed. Moderate potential to occur.</td>
</tr>
<tr>
<td>Accipiter striatus</td>
<td>sharp-shinned hawk</td>
<td>None/WL (nesting)</td>
<td>Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats.</td>
<td>Known from the area from fall to early spring, but not known to nest. Not expected to nest in the area.</td>
</tr>
<tr>
<td>Charadrius (alexandrinus) nivosus</td>
<td>(western) snowy plover</td>
<td>FT, BCC/SSC (nesting)</td>
<td>On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds.</td>
<td>No suitable dune nesting habitat required for this species. Not observed. Not expected to occur.</td>
</tr>
<tr>
<td>Circus hudsonius</td>
<td>northern harrier</td>
<td>None/SSC (nesting)</td>
<td>Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open</td>
<td>Limited foraging habitat is present in the open portions of the site, and the species is not known to nest in southern Santa Barbara County. Not observed. Low potential to occur; not expected to nest.</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Regulatory Status</td>
<td>Primary Habitat Associations</td>
<td>Potential to Occur</td>
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<tr>
<td><em>Elanus leucurus</em></td>
<td>white-tailed kite</td>
<td>None/FP (nesting)</td>
<td>Nests in woodland, riparian, and individual trees near open lands; forages opportunistically</td>
<td>Suitable nesting habitat present within the mature trees. Suitable foraging habitat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands.</td>
<td>available in open portions of the Project site Not observed, but focused raptor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>surveys not conducted. Moderate potential to occur.</td>
</tr>
<tr>
<td><em>Icteria virens</em></td>
<td>yellow-breasted chat</td>
<td>None/SSC (nesting)</td>
<td>Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine</td>
<td>Suitable nesting habitat present in riparian woodland on site. Very rare breeder</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>tangles, and dense brush.</td>
<td>in southern Santa Barbara County. Not observed, but surveys were not conducted at</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>an appropriate season for detecting this species. Low potential to occur.</td>
</tr>
<tr>
<td><em>Lanius ludovicianus</em></td>
<td>loggerhead shrike</td>
<td>BCC/SSC (nesting)</td>
<td>Nests and forages in open habitats with scattered shrubs, trees, or other perches.</td>
<td>Suitable nesting habitat present within the mature trees, however not considered</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>common in the area. Not observed. Low potential to nest.</td>
</tr>
<tr>
<td><em>Laterallus jamaicensis coturniculus</em></td>
<td>California black rail</td>
<td>BCC/ST, FP</td>
<td>Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations.</td>
<td>No suitable marsh or wet meadow habitat required for this species is present. Although CNDDB includes a historical occurrence from the Santa Barbara waterfront, this species is presumed extirpated in Santa Barbara County. Not expected to occur.</td>
</tr>
<tr>
<td><em>Riparia riparia</em></td>
<td>bank swallow</td>
<td>None/ST (nesting)</td>
<td>Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with</td>
<td>No suitable nesting vertical banks, bluffs, or cliffs. Extirpated from southern</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>sandy soils; open country and water during migration.</td>
<td>California as nesting species, although still occurs rarely as a migrant, especially</td>
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<td></td>
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<td></td>
<td>over areas with open water. Not observed. Not expected to nest.</td>
</tr>
<tr>
<td><em>Setophaga petechia</em></td>
<td>yellow warbler</td>
<td>BCC/SSC (nesting)</td>
<td>Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa</td>
<td>Suitable nesting riparian habitat present. Uncommon breeder on the south coast, but</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>very common migrant. Not observed,</td>
</tr>
</tbody>
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<tbody>
<tr>
<td><strong>Fishes</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><em>Eucyclogobius newberryi</em></td>
<td>tidewater goby</td>
<td>FE/SSC</td>
<td>Brackish or freshwater in bays, sounds, and lagoons and creeks along the coast from Del Norte County south to San Diego County.</td>
<td>Suitable freshwater present and tidewater gobies have been observed downstream in the lagoon at the mouth of Arroyo Burro (Ambrose et al 1993). USFWS critical habitat within the Arroyo Burro mouth downstream. Not observed, but focused surveys were not conducted. Low potential to occur.</td>
</tr>
<tr>
<td><em>Oncorhynchus mykiss irideus</em></td>
<td>southern steelhead – southern California DPS</td>
<td>FE/SSC</td>
<td>Spawns in freshwater streams and spends much of life at sea. Requires streams without barriers along stream course that obstruct access to spawning areas. Juveniles may spend months in coastal lagoons while sand bars block access to the ocean.</td>
<td>Suitable habitat present, however a large barrier is present upstream of Cliff Drive and downstream of the Project site. No recent observations and additional conditions in the lagoon downstream limit habitat suitability (Questa 2005, Stoecker 2002). Not observed, but focused surveys were not conducted. Low potential to occur.</td>
</tr>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Antrozous pallidus</em></td>
<td>pallid bat</td>
<td>None/SSC</td>
<td>Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and tree hollows.</td>
<td>Suitable foraging habitat present, but no suitable roosting habitat. Not observed, but bat surveys not conducted. Moderate potential to forage.</td>
</tr>
<tr>
<td><em>Corynorhinus townsendii</em></td>
<td>Townsend's big-eared bat</td>
<td>None/SSC</td>
<td>Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes,</td>
<td>Suitable foraging habitat, but no suitable roosting habitat, present. Not observed. Low potential to roost, low potential to forage.</td>
</tr>
</tbody>
</table>
Table 4. Special-Status Wildlife Species and their Potential to Occur within the BSA

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Regulatory Status</th>
<th>Primary Habitat Associations</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neotoma lepida intermedia</td>
<td>San Diego desert woodrat</td>
<td>None/SSC</td>
<td>Coastal scrub, desert scrub, chaparral, cacti, rocky areas.</td>
<td>Suitable coastal scrub habitat present, however the site is generally lacking rocky areas. Not observed. Low potential to occur.</td>
</tr>
<tr>
<td>Nyctinomops macrotis</td>
<td>big free-tailed bat</td>
<td>None/SSC</td>
<td>Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water.</td>
<td>Suitable foraging habitat present, but roosting habitat absent. Although CNDDB includes an occurrence for this species in Santa Barbara, the specimen record for the Museum of Vertebrate Zoology includes the notation “unconfirmed.” The site is well outside the species’ known range. Not observed. Low potential to occur.</td>
</tr>
<tr>
<td>Danaus plexippus</td>
<td>monarch</td>
<td>None/None (over wintering populations)</td>
<td>Wind-protected tree groves with nectar sources and nearby water sources.</td>
<td>The site lacks appropriate configuration of eucalyptus trees to provide suitable over-wintering microclimate habitats. Not observed. Low potential to roost; likely forages.</td>
</tr>
<tr>
<td>Coelus globosus</td>
<td>globose dune beetle</td>
<td>None/SA</td>
<td>Inhabits coastal sand dune habitat from Sonoma County south to Ensenada, Mexico. It burrows beneath the sand and is most common underneath dune vegetation.</td>
<td>No suitable dune habitat required for this species. Not observed. Not expected to occur.</td>
</tr>
</tbody>
</table>

*Status Definitions:*
FE = Federally Endangered
FP = Fully Protected
FT = Federally Threatened
SA = State Special Animal
SE = State Endangered
SR = State Rare
ST = State Threatened
BCC = U.S. Fish and Wildlife Birds of Conservation Concern
SSC = California Department of Fish and Wildlife Species of Special Concern
SC = California State Candidate for Threatened Listing
WL = California Department of Fish and Wildlife Watch List
4.4.1 Amphibians

4.4.1.1 California Red-Legged Frog

The California red-legged frog (Rana draytonii) is federally endangered and a California Species of Special Concern (SSC) that is found in ephemeral ponds or permanent streams and ponds, but populations probably cannot persist in ephemeral streams (Jennings and Hayes 1985). Red-legged frogs breed during the winter and early spring from as early as late November through April and May. Red-legged frog breeding occurs in streams, deep pools, backwaters within streams and creeks, ponds, marshes, sag ponds, dune ponds, lagoons, and stock ponds. Breeding adults often use deep still or slow-moving water and dense, shrubby riparian or emergent vegetation (Hayes and Jennings 1988), but frogs have been observed in shallow sections of streams and ponds that are devoid of vegetative cover. California red-legged frogs also use non-aquatic terrestrial habitats for refuge and dispersal. They rest and feed in riparian vegetation, and the moisture and cover of the riparian zone may facilitate dispersal.

California red-legged frogs are known from most of the streams along the south coast of Santa Barbara County between Carpinteria and Gaviota (Questa 2005); however, there are no CNDDB occurrences within 3.5 miles of the Project site (CDFW 2017a). Generally, suitable aquatic and upland habitat for this species is present along the middle portions of the Arroyo Burro (Questa 2005). The following text is from the Final Environmental Impact Report, Veronica Meadows Specific Plan (URS Corporation 2005) and was confirmed in October 2017 by the Santa Barbara County Flood Control District to still be true.

The California red-legged frog (Rana aurora draytonii) is a federal threatened species that occurs in only a few South Coast streams such as Tecolote Creek in western Goleta, and Arroyo Paradon in Summerland. It has not been recorded on Arroyo Burro Creek, nor in other Santa Barbara creeks. Frogs are typically found in slow-moving or pooled water (i.e., runs or pools at least 12 inches deep) that have overhanging banks, aquatic emergent vegetation, and/or overhanging bankside vegetation that contacts the surface of the water creating cover and retreat sites. Adults and subadults frequently overwinter along the margins of the riparian corridor, in burrows or in dense leaf litter. Habitat for this species is poor along Arroyo Burro Creek at the project site. Surveys for this species at the project site in 2001 were negative, as were surveys conducted in 2004 for the EIR. The red-legged frog has not been observed in the annual creek surveys by the Santa Barbara County Flood Control District.

Since there are no known occurrences of California red-legged frogs within 3.5 miles of the Project site (CDFW 2017a) and there have been no documented occurrences during recent surveys of Arroyo Burro there is low potential to occur.
4.4.2  Reptiles

4.4.2.1  Southern Western Pond Turtle

The southern western pond turtle (*Actinemys pallida*) is a SSC that is found throughout the Pacific slope of California. It is highly associated with water, occurring in permanent ponds, lakes, streams, and irrigation ditches in forest, open woodlands, and grassland. They require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or mud banks. Females lay eggs in nests constructed on dry land as far as 100 meters (325 feet) from water. The southwestern pond turtle feeds on aquatic plant material, beetles, aquatic invertebrates, fishes, and frogs.

The only natural breeding population of southwestern pond turtles within the City of Santa Barbara limits is within the Laguna Channel between Yanonali Street and Cabrillo Boulevard. This population of southwestern pond turtles is completely isolated from other populations. Individuals attempting to move upstream to natural habitats likely results in significant mortality due to the culverted and underground existence of the channel (Questa 2005). Additionally, southwestern pond turtles have been documented in El Estero Drain downstream of Calle Cesar Chavez (URS 2006). This species has the potential to occur in portions of the upper Arroyo Burro watershed (Questa 2005).

Although there are no known CNDDB occurrences within 3.5 miles of the Project site (CDFW 2017a), it is possible for this species to occur in the Arroyo Burro adjacent to and downstream of the Project site. Suitable aquatic habitat (i.e., permanent ponds and streams) are located within Arroyo Burro adjacent and directly downstream of the Project site. Moderate potential to occur.

4.4.2.2  California Legless Lizard

The California legless lizard (*Anniella pulchra pulchra*) is a SSC found from central California (Contra Costa County) south to Baja California, Mexico (Stebbins 2003). This species is fossorial (i.e., burrowing) and is found primarily in areas with sandy or loose soils where they typically are found beneath leaf litter (Holland and Goodman 1998; Zeiner et al. 1988). This species may be found in sparsely vegetated areas in a variety of habitats, including beach dunes; chaparral; California sagebrush scrub; oak woodlands; pine forests; pine–oak woodland; sandy washes; and stream terraces with sycamores, cottonwoods, or oaks (Zeiner et al. 1988; Stebbins 2003; Holland and Goodman 1998). The species may forage in leaf litter by day for insects, insect larvae, and spiders and emerge on the surface at dusk or at night (NatureServe 2017; Stebbins 2003). The species is also found under or in the close vicinity of logs, rocks, old boards, and the compacted debris of woodrat nests (Jennings and Hayes 1994). Soil moisture is considered essential for legless lizards to conserve energy at high temperatures and to allow shedding to occur (Jennings and Hayes 1994). Legless lizards burrow deeper in the soil in the summer in order to avoid high soil temperature at the surface (Hunt 1997).
There are no known CNDDB occurrences within 3.5 miles of the Project site (CDFW 2017a); however, documented occurrences exist in the area of the Project site. Specifically, in Santa Barbara County an east-west trending band of Arnold sand (Shipman, 1981) traversing the Arroyo Burro Watershed is known to support most of the known records of this species in the Santa Barbara area (Questa 2005). These sands are generally located south of Highway 101. Suitable habitat (including friable soils and suitable leaf litter) is present along the banks of the Arroyo Burro adjacent to the Project site. No focused surveys for this species were conducted as part of this report. Moderate potential to occur.

4.4.2.3 Coast Patch-Nosed Snake

The coast patch-nosed snake (Salvadora hexalepis) is a SSC that is found in California from Monterey County south to the Mexico border. It is found in open grassland, coastal sage scrub, and open chaparral habitats. Additionally, found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland, and coniferous forest. The coast patch-nosed snake is primarily aquatic, is diurnal and is also active at night and dusk during hot weather in some areas. Is known to be active from January to November depending on weather conditions. Although CNDDB includes no occurrences near the Project site, museum records include an occurrence in Santa Barbara (Thomson et al. 2016). The closest museum record to the Project site is approximately 2.1 miles to the northeast and was documented in 1939. The other museum records are in the Santa Barbara foothills. Low potential to occur.

4.4.2.4 Two-Striped Garter Snake

The two-striped garter snake (Thamnophis hammondii) is a SSC that is found in coastal California near the southeast slope of the Diablo Range and the Salinas Valley south along the Coastal and Transverse ranges to Rio Rosario in Baja California, Mexico. It is found in a variety of perennial and intermittent freshwater streams within oak woodlands, shrublands, and sparse coniferous forests from sea level to 2,400 meters (7,874 feet) amsl (Stebbins 2003; Zeiner et al. 1988). They are restricted to streams, vernal pools, lakes, and stock and artificial ponds with good adjoining riparian vegetation (Jennings and Hayes 1994; Schwenkmeyer 2007) and are commonly found within wetlands and streams having rocky or sandy beds with willows (Salix sp.) or dense vegetation (Zeiner et al. 1988). Two-striped garter snakes stay close to water in the warmer months but may occur farther from water during cooler months. They are generally active aquatic hunters during the day, but retreat into crevices, mammal burrows, or other upland shelters at night. The two-striped garter snake generally retreats to communal hibernation burrows as the days shorten, generally in October but depending on latitude and elevation (Jennings and Hayes 1994). They prey on small fish, fry, and eggs, frogs and toads, newts, leeches, earthworms, and insect larvae (Jennings and Hayes 1994).

There are no known CNDDB occurrences within 3.5 miles of the Project site (CDFW 2017a); however, it is possible for this species to occur in the Arroyo Burro adjacent to and downstream of the Project site. Low potential to occur.
4.4.3 Birds

4.4.3.1 Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is a CDFW Watch List species for its nesting period and is resident in most of the more wooded parts of the state. It most frequently nests in dense stands of live oak, riparian deciduous, or other forest habitats near water, including suburban habitats. There are two CNDDB occurrence within 3.5 miles of the Project site (CDFW 2017a).

This species is a relatively common breeder in southern Santa Barbara County (Lehman 2013, D. Compton, personal observations). Suitable nesting habitat is present in Arroyo Burro within the Project site. This species is likely to nest and winter in the riparian habitat. Although this species is tracked in CNDDB, it is not a special-status species. No focused surveys for this species were conducted as part of this report. Moderate potential to occur.

4.4.3.2 White-Tailed Kite

The white-tailed kite (*Elanus leucurus*) is a State Fully Protected raptor species. Along the West Coast, it is a permanent resident from Washington State south to Baja California, with the core of its range in California (Dunk 1995). Some seasonal movements do occur, resulting in an expansion of the species’ range in winter. It nests in treetops with dense foliage, including orchards, and forages in open grasslands, meadows, farmlands, and emergent wetlands. It hunts mostly by hovering, detecting prey visually, and diving on its prey. White-tailed kites feed mostly on small mammals, and may be specialized in their prey preference at any one location. They may forage miles from their night roosts during winter, but their home range during the nesting season averages only one-eighth of a square mile, according to one study (Dunk 1995). The white-tailed kite is an uncommon resident near the coast and in interior valleys of Santa Barbara County. As elsewhere within the species’ range, white-tailed kite numbers have fluctuated dramatically in southern Santa Barbara County. Numbers declined in the area beginning in the 1970s through the early 1990s, but subsequently rebounded, based on annual Santa Barbara Audubon Society Christmas Bird Count data and annual monitoring of kite populations by local biologists (NAS 2001, Holmgren 2011).

Suitable nesting habitat present within the mature trees. Suitable foraging habitat available in open portions of the Project site. Not observed, but focused raptor surveys were not conducted. Moderate potential to occur.

4.4.3.3 Yellow-Breasted Chat

The yellow-breasted chat (*Icteria virens*) is a CSC for nesting. It is an uncommon summer resident species occurring in coastal California, the foothills of the Sierra Nevada, in northern California inland to the Cascades, and in scattered, isolated riparian areas in the southern deserts. Spring migrants from Mexico and
Central America pass through southern California from mid-April through May; fall passage is mainly from late August to late September (Dunn and Garrett 1997). Yellow-breasted chats require riparian thickets of willow and other brushy tangles near watercourses for cover. This species is an uncommon migrant in southern Santa Barbara County and nests very rarely.

There are no CNDDB occurrences within 3.5 miles of the Project site (CDFW 2017a). Suitable nesting habitat present in riparian woodland on site. Very rare breeder in southern Santa Barbara County. Not observed, but surveys were not conducted at an appropriate season for detecting this species. Low potential to occur.

4.4.3.4 Loggerhead Shrike

The loggerhead shrike (Lanius ludovicianus) is a CSC during its nesting period that can be found in lowlands and foothills throughout California. It is year-round throughout most of its range in the state, which includes the entire state exclusive of the higher mountains of southern California, the Coast Ranges of central California, the Sierra Nevada, the White Mountains, the Cascade Range, and the north coast. Breeding populations in the north are migratory. Loggerhead shrikes begin nesting in southern California as early as January or February. They nest in densely foliated shrubs or trees. They prefer open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches, and require impaling sites, such as thorns, sharp twigs, or barbed wire, for skewering and manipulating their prey. They feed on arthropods and on small vertebrates, including reptiles, amphibians, small birds, and small mammals. In Santa Barbara County, this species breeds in the Cuyama Valley, on the coast north of Point Conception, and in the Santa Ynez Valley (Lehman 2011). On the south coast, it is largely absent during the nesting season, begins to return during the summer, and is uncommon in fall and winter. Breeding has been recorded on the south coast once in recent years, at Carpinteria in 2004 (SBMNH rare bird records). Suitable nesting habitat is present within the mature trees; however, loggerhead shrikes rarely breed in the area and are uncommon visitors the remainder of the year the area. Not observed during. Low potential to occur.

4.4.3.5 Yellow Warbler

The yellow warbler (Setophaga petechia) is a CSC during its nesting period. It breeds widely across California, but is absent from the high Sierras, most of the southern deserts, and most of the Central Valley. The species is largely absent from the state in winter. Spring migrants pass through from April through early June, and fall migrants occur from late July to mid-October. Yellow warblers breed primarily in deciduous riparian woodlands, including those dominated by cottonwoods, willows, and alders, up to 8000 feet; they also breed in montane chaparral and open conifer forests. This species is recorded widely as a migrant, but nests very locally in southern Santa Barbara County, including several riparian areas in Goleta.

There are no CNDDB occurrences within 3.5 miles of the Project site (CDFW 2017a). Suitable nesting riparian habitat present. Uncommon breeder on the south coast, but very common migrant. Not observed
during 2017 surveys, but surveys conducted after the nesting season. Moderate potential to nest; likely occurs commonly during migration.

4.4.4 Fish

4.4.4.1 Tidewater Goby

The tidewater goby (*Eucyclogobius newberryi*) is listed as federally endangered and a SSC. It is found in brackish or freshwater in bays, sounds, and lagoons and creeks along the coast from Del Norte County south to San Diego County. Half-grown and adult tidewater gobies move upstream in summer and fall, usually up to 1 kilometer (0.62 miles) from the estuary, but in some areas from 5 to 8 kilometers (3.1 to 5.0 miles). Reproduction occurs at all times of year, but peak spawning occurs during spring and late summer (USFWS 2005). The USFWS identifies Arroyo Burro (directly downstream of Cliff Drive) as critical habitat unit SB-10 and is considered to be currently occupied (78 FR 8746-8819).

Suitable freshwater present and tidewater gobies have been observed downstream in the lagoon at the mouth of Arroyo Burro (Ambrose et al 1993). USFWS critical habitat within the Arroyo Burro mouth downstream. Not observed, but focused surveys were not conducted. The portion of creek within the Project site and directly south of Cliff Drive Bridge has suitable habitat; however, there is a large barrier present upstream of Cliff Drive and downstream of the Project site. The large barrier likely prevents tidewater gobies from moving upstream to the Project site. Low potential to occur.

4.4.4.2 Southern Steelhead

The southern steelhead (*Oncorhynchus mykiss irideus*) distinct population segment (DPS) is a federally endangered species and SSC species. It is an anadromous species of fish (living much of its life at sea and spawning in rivers and streams) that spawns in California watersheds from the Santa Maria River in southern San Luis Obispo and northern Santa Barbara County southward (NMFS 2009). Juveniles of the species rear in fresh water for one to three years before migrating out to sea, where they reach maturity and live for two to four years, before returning to their natal stream to spawn. Juvenile steelhead will spend months in coastal lagoons prior to outmigrating. Adults may migrate from miles to hundreds of miles up their natal stream before spawning. Steelhead streams have sufficient winter flow that sands berms at the mouths of streams that can be breached (Titus et al. 2010).

Arroyo Burro downstream of Cliff Drive has been known to support steelhead trout (Questa 2005). The middle and lower stretches of Arroyo Burro is federally designated critical habitat (70 FR 52488-52627). The portion of creek within the Project site and directly south of Cliff Drive Bridge has suitable deep pools to serve as suitable habitat; however, there is a large barrier present upstream of Cliff Drive and downstream of the Project site (Stoecker 2002). Additionally, there are no modern records of southern steelhead within Arroyo Burro (Questa 2005). Low potential to occur.
4.4.5  Mammals

4.4.5.1  Pallid Bat

The pallid bat (*Antrozous pallidus*) is an SSC. This species is rare in California and the primary habitat associations are mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels.

The Project site has suitable foraging habitat and roosting habitat present. There are no CNDDB occurrences within 3.5 miles of the Project site (CDFW 2017a). Moderate potential to occur.

4.4.5.2  Townsend’s Big-Eared Bat

The Townsend’s big-eared bat (*Corynorhinus townsendii*) is a state candidate threatened species and SSC. The big-eared bat is primarily associated with mesic habitats characterized by coniferous and deciduous forests, although it also occurs in xeric areas (Kunz and Martin 1982). This species requires caves, mines, tunnels, buildings, or other human-made structures for roosting (Zeiner et al. 1990b). However, this species prefer open roosting areas in large areas and do not tuck themselves into cracks and crevices (NPS 2017). Big-eared bats take a variety of prey on the wing from the edge of forested habitats but also glean prey from vegetation to forage, including small moths, beetles, flies, lacewings, wasps, bees, and ants. Big-eared bats fly in the immediate vicinity of vegetation, both when foraging and when traveling from the roost to foraging areas, with foraging activity mainly concentrated primarily along the edges of riparian vegetation (Fellers and Pierson 2002). This species is apparently widely distributed throughout San Luis Obispo, Ventura, and Santa Barbara Counties with a large colony of over 100 individuals known to roost under old Highway 154 bridge over the Santa Ynez River (1980s record, SBMNH sight record files, cited in Questa 2005). This species is considered to occasionally roost and forage in the Arroyo Burro Watershed, which is dependent upon roosting and foraging habitat (Pierson, et al. 2002, Questa 2005).

Suitable foraging habitat present, but no suitable roosting habitat. There is one CNDDB occurrence within 3.5 miles of the Project site (CDFW 2017a). Low potential to roost, low potential to forage.

4.4.6  Invertebrates

4.4.6.1  Monarch Butterfly

The monarch butterfly (*Danaus plexippus*) follows a pattern of seasonal migration. The regional summer grounds of the species are located in the northern Rocky Mountains. This population then migrates southwest to wintering grounds along the California coast. Monarch butterfly wintering sites are considered special status by CDFW (2017c). Wintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine) with nectar and water sources nearby, generally near the coast. A
few California sites (e.g., Ellwood Grove) support concentrated numbers of overwintering adults, but adults often winter as scattered individuals or in small clusters (Emmel and Emmel 1973).

There is a suitable wintering eucalyptus grove within the western portion of the Project site. Therefore, monarchs have a moderate potential to roost/winter in this area. However, this eucalyptus grove is outside the Project area approximately 250 feet to the west. No Project impacts are proposed within this eucalyptus grove.

4.5  Sensitive Vegetation Communities – Including Environmentally Sensitive Habitat Areas

The literature review identified one sensitive vegetation community that has been recorded within the CNDDB query: southern coastal salt marsh. No southern coastal salt marsh was observed within the BSA. Three state rank 3 (sensitive) vegetation communities were observed and mapped within the BSA: blue elderberry stands, California sycamore woodlands, and lemonade berry scrub. However, only one of these state rank 3 vegetation communities, California sycamore woodlands, occurs within the Project limits. Several vegetation communities that occur on site within the riparian habitat may be identified as ESHA under the City of Santa Barbara LCP (City of Santa Barbara 2004. The riparian habitat comprised of arroyo willow thickets, California sycamore woodlands, coast live oak woodlands, giant reed breaks (semi-natural stands), blue elderberry stands, and eucalyptus groves (semi-natural stands) and is potentially habitat for special-status species or receives special protection under the California Coastal Act or other regulations or agencies. The results of the literature review and field surveys for sensitive vegetation communities to occur on-site is summarized in Table 5.

Table 5. Occurring Sensitive Vegetation Communities

<table>
<thead>
<tr>
<th>Vegetation Community</th>
<th>Status</th>
<th>Within Project Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Elderberry Stands</td>
<td>G3/S3</td>
<td>No</td>
</tr>
<tr>
<td>California Sycamore Woodlands</td>
<td>G3/S3</td>
<td>Yes</td>
</tr>
<tr>
<td>Lemonade Berry Scrub</td>
<td>G3/S3</td>
<td>No</td>
</tr>
<tr>
<td>Riparian Habitat</td>
<td>ESHA</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Notes:
- Status Definitions:
  - Global Ranking - The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range.
  - State Ranking - The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.
  - G1, S1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.
  - G2, S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.
  - G3, S3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.
  - 0.1: very threatened
  - 0.2: threatened
  - ESHA (Environmentally Sensitive Habitat Area) – City of Santa Barbara Local Coastal Plan (City of Santa Barbara 2004)
4.6 California Department of Fish and Wildlife Jurisdiction

During the 2017 surveys, a CDFW jurisdictional delineation was performed; however, the surveys did not include mapping of USACE, RWQCB or CCC jurisdictions. The majority of the Project is proposed within Arroyo Burro. In the vicinity of the BSA, the creek includes a primary channel with permanent flow with associated riparian vegetation dominated by arroyo willows, California sycamores, coast live oaks, giant reed, and eucalyptus and a natural bottom creek. CDFW jurisdiction was documented as the riparian vegetation associated with Arroyo Burro, as documented in Figure 4 and photographs in Appendix A.
5 IMPACTS AND RECOMMENDED MEASURES

The proposed Arroyo Burro Open Space Restoration project (Project) will extend approximately 1,600 linear feet of Arroyo Burro from Alan Road to Rebecca Lane/Richell Lane/Stonecreek Road. The Project is mostly situated within and adjacent to Arroyo Burro (Figure 4). In addition, a catchment basin, site access and temporary construction staging area will be located within disturbed ruderal vegetation in the western portion of the BSA. Sensitive biological resources within the Project site are located in the aquatic habitat of Arroyo Burro and adjacent riparian habitat, and are the focus of our impact analysis and recommended measures.

5.1 Impact Analysis and Recommended Measures

Construction of the proposed Project has the potential to impact approximately 4.5 acres of natural riparian vegetation, aquatic habitat, downstream areas, and the creek channel (bank to bank). Impacts related to dewatering, grading, vegetation removal, and potential concrete, oil/gas, or other chemical spills from construction activities would have the greatest impact to Arroyo Burro. Potentially impacted species include, but are not limited to, the federally listed tidewater goby, southern steelhead and many common species that inhabit Arroyo Burro Lagoon. Accidental pollutant/chemical spills or discharge of material may involve both temporary and/or permanent impacts (depending on the extent of impact). Temporary, indirect impacts (i.e., noise, traffic, construction activities, ground vibrations, etc.) are expected to affect wildlife species within Arroyo Burro and its riparian habitat, especially to nesting birds. The following sections describe the sensitive biological resources and include recommended measures to avoid and minimize impacts to these biological resources.

5.1.1 Special-Status Plant Species

Construction of the Project has the potential to impact special-status plant species protected under either the California Endangered Species Act (CESA) (Fish & Game Code, § 2050 et seq.) or federally Endangered Species Act (ESA) (16 U.S.C. § 1531 et seq.), or meet the CEQA definition for endangered, rare, or threatened (Cal. Code Regs., tit. 14, § 15380(b),(d)) including CNPS CRPR plants. Therefore, the following avoidance and minimization measures are highly recommended:

**BIO-1 Floristic Surveys.** Focused floristic surveys for special-status plant species should be conducted on the Project site in accordance with USFWS, CDFW, and CNPS guidelines. Floristic guidelines indicate that surveys are required to occur in the time(s) that plants are in identifiable condition; often, flowers and/or fruit are necessary for correct identification. Based on the blooming period of the special-status plant species with potential to occur, two survey passes would be required to observe the spring and summer blooming periods (one in April and one in June). According to the guidelines, all blooming plants encountered during
the surveys will be identified to subspecies or variety, if applicable, to determine the
sensitivity status.

**BIO-2 Arborist Survey.** A certified arborist or certified forester should perform a physical
inventory, collecting tree location and arboricultural attribute information for each tree that
is special-status or that meets the minimum size requirements to be a City of Santa Barbara
protected tree. The tree height, canopy spread to drip line, trunk diameter, and tree
health/structural condition should be collected. If needed, each mapped and assessed tree
should be tagged with an aluminum tree tag identifying it with a unique tree number
corresponding to GPS mapping data. Photographs of the site and of representative trees
should be collected.

5.1.2 **Hydrology/Aquatic Habitat**

**BIO-3 Water Diversion/Dewatering Plan and Implementation.** Prior to the start of
construction, a water diversion/dewatering plan should be prepared to identify pre-
construction surveys and methods to avoid and minimize impacts to special-status species
and aquatic resources when the construction site is dewatered. The plan should identify best
management practices to prevent erosion and sedimentation during and after construction,
and procedures for containing, cleaning up spills. If special-status species are observed
during pre-construction surveys the appropriate agencies (USFWS, NOAA NMFS, CDFW)
should be contacted immediately to discuss properly relocation of the species.

**BIO-4 Stormwater Pollution Management Plan (SWMP).** It is recommended that the City
retain a Qualified SWPPP Developer (QSD) to prepare a SWMP to minimize the potential
for discharge of pollutants from the Projects during construction activities. The SWMP
should be designed to meet the requirements of the City and RWQCB’s General
Construction Permit (GCP). The SWMP should include both structural and non-structural
best management practices (BMPs) including straw wattles around storm drains, silt fencing
and or other physical controls to diver flows from exposed soil, spill prevention methods,
and clean housekeeping methods for storing and refueling machinery.

As part of the SWMP, the Contractor should include specifications, installation
requirements, and locations of appropriate BMPs to control sediment, coarse particles,
concrete, and other materials exposed during construction and drilling to protect aquatic,
wetland, and riparian habitats adjacent to construction site. Erosion control measures should
be implemented to prevent runoff of these materials into Arroyo Burro. Silt fencing, straw
bales, and/or sand bags should be used in conjunction with other methods to prevent turbid
waters from entering the creek.
During construction activities, washing of concrete or equipment should occur only in areas where polluted water and materials can be contained for subsequent removal from the site. Washing will not be allowed in locations where the tainted water could enter Arroyo Burro.

It is recommended that the City retain a Qualified SWPPP Practitioner (QSP) to monitor the site’s SWMP measures prior to the start of construction and throughout the duration of construction to ensure they continue to function properly.

**BIO-5 Wetland and Riparian Protection.** All construction-related activities, including, but not limited to construction, storage areas, staging areas, and access routes should be located at a maximum distance away from riparian habitat associated with Arroyo Burro, when possible. In locations where the construction activities encroach within this buffer, it is important to provide further protection to riparian vegetation and the wetland and aquatic habitats of Arroyo Burro to the greatest extent possible. These measure should also incorporate **BIO-4 Stormwater Pollution Management Plan** measures (i.e., BMPs placement inside of the construction fencing) to protect wetland and riparian resources.

A. The Contractor should establish a temporary barrier around staging areas and work areas to delineate work boundaries and prevent entrance into non-impact areas. The temporary barrier should use highly visible construction fencing to ensure that trees and other vegetation outside of work areas are avoided during construction.

B. When sizeable construction equipment is working near riparian vegetation, it is highly encouraged that flaggers are utilized to assist in equipment positioning to avoid impacts to non-impact riparian areas.

**5.1.3 Nesting Birds**

Construction of the Project has the potential to impact nesting birds on and adjacent to the site, within the Arroyo Burro riparian habitat, to the degree that the nests may be abandoned, resulting in a direct loss of an active bird nest. Bird nests with eggs or young of all migratory bird species are protected under the Migratory Bird Treaty Act (Act) and the California Fish and Game Code (Code). Therefore, the following avoidance and minimization measures are highly recommended:

**BIO-6 Pre-Construction Nesting Bird Survey.** A pre-construction survey for nesting birds should be conducted by a qualified biologist to determine if active nests of special-status birds, or common bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code, are present in the construction zone or within 300 feet of the construction zone for the entire length of the Project site. The survey should be conducted within one week prior to construction or site preparation activities that would
occur during the nesting/breeding season of native bird species potentially nesting on the site (typically March 1 through August 30).

**BIO-7**  
**Nesting Bird Buffers and Requirements.** If active nests are found, a no-construction buffer should be established at a minimum of 100-foot (this distance may be greater depending on the bird species and construction activity, as determined by the biologist) around the nest site where it overlaps with work areas. Clearing and construction within no-construction buffer should be postponed or halted, at the discretion of the biologist, until the nest is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. In addition, all active nests should be mapped with a GPS unit and nest locations with 100-foot buffers overlain on aerial photographs to provide regular updated maps to inform the Project manager/engineer and construction crew of areas to avoid. The City-appointed biologist should also serve as a construction monitor during the breeding season to ensure that there are no inadvertent impacts to nesting birds.

### 5.1.4 Special-Status Wildlife Species

#### 5.1.4.1 Southern Western Pond Turtle

**BIO-8**  
**Southern Western Pond Turtle Surveys and Avoidance.** Prior to initiation of construction activities, focused surveys should be conducted in aquatic habitat for western pond turtle. A minimum of four daytime surveys should be conducted between April 1 and June 1. The survey schedule may be adjusted to reflect the existing weather or stream conditions. If western pond turtles are detected in or adjacent to the project, nesting surveys should be conducted within the project footprint in suitable upland habitats within 1,300 feet of occupied aquatic habitat. A qualified biologist should conduct focused, systematic surveys for western pond turtle nesting sites. Surveys will entail searching for evidence of pond turtle nesting, including remnant eggshell fragments, which may be found on the ground following nest predation.

If a western pond turtle nesting area is found on site and would be adversely impacted by construction activities, the Applicant should avoid the nesting area. If avoidance of the nesting area is determined to be infeasible, the authorized biologist should coordinate with CDFW to identify whether it is possible to relocate the pond turtles. Eggs or hatchlings should not be moved without written authorization from CDFW.
5.1.4.2 California Legless Lizard, Coast Patch-Nosed Snake, and Two-Striped Gartersnake

BIO-9 California Legless Lizard, Coast Patch-Nosed Snake, and Two-Striped Gartersnake Surveys and Avoidance. Pre-construction surveys for California legless lizard, coast patch-nosed snake, and two-striped gartersnake should be conducted 30 days prior to the initiation of Project activities. Subject species of surveys may vary depending on timing and species’ activity patterns. At any time of year when Project activities are initiated, pre-construction surveys for California legless lizard should be conducted in riparian habitats and areas with loose sand, coast patch nosed snake in open grassland, coastal sage scrub, and open chaparral habitats, and two-striped gartersnake in streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools. If these species are observed, a salvage and relocation plan would be implemented to allow a qualified biologist to capture and relocate the species away from ground disturbance and into protected open space. These survey and reporting measures are often a condition of the CDFW’s Streambed Alteration Agreement (SAA).

5.1.4.3 Cooper’s Hawk, White-Tailed Kite, Yellow-Breasted Chat, Loggerhead Shrike, and Yellow Warbler

The Cooper’s hawk, white-tailed kite, yellow-breasted chat, loggerhead shrike, and yellow warbler likely nest in the riparian habitat along Arroyo Burro. Implementation of measures BIO-3 Pre-Construction Nesting Bird Surveys and BIO-4 Nesting Bird Buffers and Requirements would avoid potential impacts to this species.

5.1.4.4 Tidewater Goby and Southern Steelhead

The federally-endangered tidewater goby and southern steelhead are known to occur in Arroyo Burro, downstream from the Project site. Direct construction-related impacts to Arroyo Burro are proposed and direct adverse impacts to Arroyo Burro aquatic habitat could occur from potential spill issues during construction or the accidental discharge of materials into the creek. To avoid potential impacts to the tidewater goby and southern steelhead aquatic and federally designated critical habitat, the contractor should implement the following:

BIO-3 Water Diversion Plan and Implementation, BIO-4 Stormwater Pollution Management Plan, and BIO-5 Wetland and Riparian Protection.
5.1.4.5 Pallid Bat and Townsend’s Big-Eared Bat

BIO-10 Pre-Construction Bat Roosting Survey. Conduct a preconstruction survey for roosting bats within 30 days of disturbance to existing trees. If roosting bats are present, appropriate avoidance measures should be developed to ensure that no impacts to roosting bats occur.

5.1.5 Sensitive Vegetation Communities and Habitats

Implementation of the Project has the potential to impact special-status plant species, City protected trees, sensitive vegetation communities California sycamore woodland, ESHA (riparian habitat), and jurisdictional areas. Implementation of the following measures are recommended for the sensitive riparian resources including special-status plants, City protected trees, sensitive vegetation communities, ESHA, and jurisdictional areas:

BIO-11 Wetland and Upland Habitat Restoration and Monitoring Plan. Prior to construction, a Wetland and Upland Habitat Mitigation and Monitoring Plan (HRMP) should be developed to address project-generated impacts on special-status plants, City protected trees, sensitive vegetation communities, ESHA, and jurisdictional areas. The Wetland and Upland HRMP should be prepared by a City-approved qualified biologist or restoration ecologist. The Wetland and Upland HRMP should include a plan to restore and regenerate all wetland areas, sensitive vegetation, and special-status plant species disturbed by the Project. The Wetland and Upland HRMP should outline the final habitat restoration and monitoring program requirements to compensate for project impacts.

Mitigation restoration should be sited in Project disturbance areas and currently disturbed areas dominated with non-native vegetation that have substantial habitat restoration opportunities. The Wetland and Upland HRMP should include revegetation, restoration, maintenance, and monitoring measures for the proposed project. The Wetland and Upland HRMP should be specifically designed to limit human presence and activity in the restoration area.

The Wetland and Upland HRMP should identify plant species, quantities, planting locations, irrigation, success criteria, monitoring, and reporting. The Wetland and Upland HRMP should present specifications regarding final mitigation acreages, site preparation, restoration implementation, plant and seed collection source and sizing, project implementation guidelines, final success criteria and performance standards, as well as requirements for long-term maintenance, monitoring, and reporting.

The Wetland and Upland HRMP shall include, but not be limited to the following:
• The date prepared, author, and revision dates.
• The project description.
• The site description and past use.
• Discussion of wetland resources, sensitive vegetation communities, and any special-status plant species in the vicinity of disturbance sites.
• Discussion of the amount of wetland resources, sensitive vegetation, and special-status species lost.
• Objectives.
• Measures for protection of sensitive biological resources during construction.
• Site preparation methods.
• Identification of planting zones for wetland, riparian and upland species.
• A list and number of plants to be used. Propagation source material shall be collected from local south coast watersheds (Gaviota to Rincon) and from the Arroyo Burro Watershed where feasible.
• Irrigation requirements, design and maintenance.
• Weeding requirements and list of non-native species to be removed and methods for removal.
• Provisions for short-term and long-term maintenance with performance criteria to be overseen by a qualified biologist or restoration ecologist.
• Establishment of performance safeguards and a monitoring period of at least five (5) years.
• Detailed maps illustrating restoration areas and conservation easements, if applicable.

5.1.6 Jurisdictional Resources

Implementation of the Project has the potential to impact jurisdictional areas. Implementation of the following measures are recommended for jurisdictional areas:

BIO-12 U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Coastal Commission Jurisdictional Delineation. Arroyo Burro is subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Coastal Commission (CCC). A formal jurisdictional delineation identifying limits of USACE, RWQCB, and CCC jurisdiction should be performed.
The results of jurisdictional should be incorporated into appropriate agency permits as further described in BIO-13 U.S. Army Corps of Engineers Nationwide Permit, Regional Water Quality Control Board Water Quality Certification Permit, and California Department of Fish and Wildlife Streambed Alteration Agreement.

**BIO-13** U.S. Army Corps of Engineers Nationwide Permit, Regional Water Quality Control Board Water Quality Certification Permit, and California Department of Fish and Wildlife Streambed Alteration Agreement. The applicant should submit permit applications to USACE, RWQCB, and CDFW for impacts to agency jurisdictions. Agency mitigation requirements should be incorporated into BIO-11 Wetland and Upland Habitat Restoration and Monitoring Plan.

### 5.1.7 Worker Education, Monitoring, and Reporting

**BIO-14** Workers Educational Training. Prior to the initiation of any site disturbance and/or construction activities, all personnel associated with the Project should attend a worker education training program (program) conducted by a qualified biologist. In general, it is recommended that the program discuss tidewater goby and southern steelhead habitat preference(s), occupied habitat in the area, life histories, law and regulations, as well as potential construction impacts and protection measures, and Project limits. Protections and regulations for the Arroyo Burro, the riparian habitat, and nesting birds should also be included in the program. It is recommended that a species and habitat fact sheet also be developed prior to the training program and distributed at the training program to all contractors, employers and other personnel involved with the construction of the Project. Specifically, the program should also include:

- Measures to prevent indirect impacts during construction activities should be covered, including use of construction materials and chemicals/pollutants as they relate to the protection of adjacent aquatic habitat.

- Training materials should include laws and regulations that protect sensitive biological resources, the consequences of non-compliance with those laws and regulations and a contact person (i.e. construction manager, biological monitor, and City’s Project manager) in the event that protected biological resources are affected.

- The City should notify the qualified biologist in advance of the kick-off meeting and any subsequent meetings that may take place if additional contractors are employed during additional construction of the Project. A sign in sheet will be circulated for signatures to all personal that attend the workers educational training to confirm that program materials were received and that they understand information presented.
**BIO-15 Biological Monitoring and Reporting.** The City should retain a qualified biologist to monitor construction and compliance of recommended measures **BIO-3 Water Diversion Plan and Implementation, BIO-4 Stormwater Pollution Management Plan, BIO-5 Wetland and Riparian Protection.** Monitoring and reporting should occur on a daily basis for the first two weeks of construction and a weekly basis thereafter during construction.

### 6 REFERENCES


Holmgren, M. 2011. White-tailed Kite Mid-season Summary. Post to SB Co Birding email list.


APPENDIX A

Photo Documentation


Coyote brush scrub-poison oak scrub on the east side Arroyo Burro, facing west. September 5, 2017.


APPENDIX B

Plant Compendium
GYMNOSPERMS

**CUPRESSACEAE—CYPRESS FAMILY**

_Hesperocyparis macrocarpa_—Monterey cypress

MONOCOTS

**ARECACEAE—PALM FAMILY**

_Phoenix canariensis_—Canary Island date palm*

**POACEAE—GRASS FAMILY**

_Arundo donax_—giant reed*
_Avena barbata_—slender oat*
_Bromus diandrus_—ripgut brome*
_Bromus madritensis ssp. rubens_—red brome*
_Cynodon dactylon_—Bermudagrass*
_Elymus condensatus_—giant wild rye
_Festuca perennis_—perennial rye grass*
_Hordeum murinum_—mouse barley*
_Pennisetum setaceum_—fountain grass swards*
_Stipa miliacea var. miliacea_—smilagrass*

**TYPHACEAE—CATTAIL FAMILY**

_Typha domingensis_—southern cattail

EUDICOTS

**ADOXACEAE—MUSKROOT FAMILY**

_Sambucus nigra ssp. caerulea_—blue elderberry

**ANACARDIACEAE—SUMAC OR CASHEW FAMILY**

_Rhus integrifolia_—lemonade berry
_Schinus molle_—Peruvian peppertree*
_Toxicodendron diversilobum_—poison oak
**APIACEAE—CARROT FAMILY**
- *Conium maculatum*—poison hemlock*
- *Foeniculum vulgare*—fennel*

**APOCYNACEAE—DOGBANE FAMILY**
- *Vinca major*—bigleaf periwinkle*

**ARALIACEAE—GINSENG FAMILY**
- *Hedera helix*—English ivy*

**ASTERACEAE—SUNFLOWER FAMILY**
- *Artemisia douglasiana*—Douglas’ sagewort
- *Baccharis pilularis*—coyote brush
- *Carduus pycnocephalus*—Italian plumeless thistle*
- *Delairea odorata*—Cape-ivy*
- *Helminthotheca echioides*—bristly oxtongue*
- *Heterotheca grandiflora*—telegraphweed
- *Lactuca serriola*—prickly lettuce*
- *Silybum marianum*—blessed milkthistle*
- *Sonchus asper*—spiny sowthistle*
- *Sonchus oleraceus*—common sowthistle*

**BRASSICACEAE—MUSTARD FAMILY**
- *Brassica nigra*—black mustard*
- *Hirschfeldia incana*—shortpod mustard*
- *Nasturtium officinale*—watercress
- *Raphanus sativus*—cultivated radish*

**CACTACEAE—CACTUS FAMILY**
- *Opuntia littoralis*—coast prickly pear

**CHENOPODIACEAE—GOOSEFOOT FAMILY**
- *Chenopodium album*—lambsquarters*
- *Chenopodium murale*—nettles leaf goosefoot*
CONVOLVULACEAE—MORNING-GLORY FAMILY

*Convolvulus arvensis*—field bindweed*

EUPHORBIACEAE—SPURGE FAMILY

*Ricinus communis*—castorbean*

FABACEAE—LEGUME FAMILY

*Acacia melanoxylon*—blackwood*
*Melilotus albus*—yellow sweetclover*

FAGACEAE—OAK FAMILY

*Quercus agrifolia*—coast live oak

LAMIACEAE—MINT FAMILY

*Marrubium vulgare*—horehound*

MALVACEAE—MALLOW FAMILY

*Malva parviflora*—cheeseweed mallow*

MORACEAE—MULBERRY FAMILY

*Ficus carica*—edible fig*

MYRTACEAE—MYRTLE FAMILY

*Eucalyptus globulus*—Tasmanian bluegum*

OLEACEAE—OLIVE FAMILY

*Olea europaea*—olive*

PLANTAGINACEAE—PLANTAIN FAMILY

*Plantago lanceolata*—narrowleaf plantain*
*Plantago major*—common plantain*

PLATANACEAE—PLANE TREE, SYCAMORE FAMILY

*Platanus racemosa*—California sycamores
**POLYGONACEAE**—**BUCKWHEAT FAMILY**

*Polygonum aviculare*—prostrate knotweed*

*Rumex crispus*—curly dock*

**RHAMNACEAE**—**BUCKTHORN FAMILY**

*Frangula californica*—California coffee berry

**ROSACEAE**—**ROSE FAMILY**

*Heteromeles arbutifolia*—toyon

*Rubus ursinus*—California blackberry

**SALICACEAE**—**WILLOW FAMILY**

*Salix lasiolepis*—arroyo willow

**SCROPHULARIACEAE**—**FIGWORT FAMILY**

*Myoporum laetum*—myoporum*

**SOLANACEAE**—**NIGHTSHADE FAMILY**

*Solanum douglasii*—greenspot nightshade

*Nicotiana glauca*—tree tobacco*

**TROPAEOLACEAE**—**NASTURTIUM FAMILY**

*Tropaeolum majus*—nasturtium*

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* — non-native naturalized species

**Bold** — special-status plant species
APPENDIX C

Wildlife Compendium
BIRDS

AEGITHALIDAE—LONG-TAILED TITS & BUSHTITS
Psaltriparus minimus—bushtit

FRINGILLIDAE—FRINGILLINE & CARDELINE FINCHES & ALLIES
Haemorhous mexicanus—house finch

TYRANNIDAE—TYRANT FLYCATCHERS
Tyrannus vociferans—Cassin's kingbird

ACCIPITRIDAE—Hawks, Kites, Eagles, & Allies
Buteo jamaicensis—red-tailed hawk

TROCHILIDAE—HUMMINGBIRDS
Calypte anna—Anna's hummingbird

CORVIDAE—CROWS & JAYS
Aphelocoma californica—California scrub-jay
Corvus brachyrhynchos—American crow

MIMIDAE—MOCKINGBIRDS & THRASHERS
Mimus polyglottos—northern mockingbird

CATHARTIDAE—CARDINALS & ALLIES
Cathartes aura—turkey vulture

COLUMBIDAE—PIGEONS & DOVES
Streptopelia decaocto—Eurasian collared-dove*

TROGLODYTIDAE—WRENS
Thryomanes bewickii—Bewick’s wren

PASSERELLIDAE—NEW WORLD SPARROWS
Melospiza melodia—song sparrow
Melozone crissalis—California towhee
MAMMALS

**SCIURIDAE—SQUIRRELS**

*Spermophilus (Otospermophilus) beecheyi*—California ground squirrel

LIZARDS

**PHRYNOSOMATIDAE—IGUANID LIZARDS**

*Sceloporus occidentalis*—western fence lizard

* signifies introduced (non-native) species
CONCEPT REVIEW - NEW ITEM: PUBLIC HEARING

1. 1425 LAS POSITAS RD  SP-9/S-D-3 Zone
(3:15)  Assessor’s Parcel Number: 047-010-064
        Application Number: MST2017-00773
        Owner: City of Santa Barbara
        Applicant: Erin Markey, Creeks Restoration Planner

(Proposal for a 4-acre restoration of the Arroyo Burro Creek corridor located on City-owned property within the Arroyo Burro Open Space Park. The project would restore 1,400 linear feet of creek with removal of man-made debris such as metal and concrete, and the installation of approximately 7,500 native plants, including 550 trees, and associated irritation. Wood rail fencing would be placed along the restoration area and along existing foot trails. New floodplain terraces would be created through the grading of 13,000 cubic yards of soil of which 12,600 cubic yards would be exported and the remainder would be used onsite. No new structures are proposed. The project design includes measures to address potential environmental impacts. Project funding will come from Measure B and matching grant funds from the Department of Fish and Wildlife and California Coastal Conservancy. Project requires review by the Planning Commission for a Coastal Development Permit.)

(Comments Only. Project requires Planning Commission review for a Coastal Development Permit.)

Actual time: 3:06 p.m.

Present: Erin Markey, Creeks Restoration Planner, City of Santa Barbara

Public comment opened at 3:36 p.m., and as no one wished to speak, it closed.

Motion: Continue indefinitely to the Planning Commission for return to Full Board with comments:

1. The Board finds that the following Compatibility Analysis Criteria have been satisfied (per SBMC 22.68.045.B.):
   a. The project fully complies with all applicable City Charter and Municipal Code requirements. The project’s design is consistent with design guidelines because it is a legitimate restoration of the degraded creek within the City limits.
   b. The proposal is compatible with the architectural character of the City and neighborhood. The project is compatible with the surrounding rural neighborhood.
   c. The project size, mass, bulk, height, and scale are not applicable.
   d. There are no adjacent Landmarks or other nearby designated historic resources located close to the project site.
   e. There are no established scenic public views near the project site.
   f. The project includes an appropriate amount of open space and landscaping.

Action: Cunningham/Tripp, 4/0/0. (Watkins and Wittausch absent.) Motion carried.

EXHIBIT G