Attachment D:
Photo Documentation

Photo 1:

Northeast view of field adjacent to drainage ditch with hydrological connectivity to SLO Creek. The drainage ditch is parallel to the fenceline at the far right edge of the photo.

Photo taken April 3, 2008.

Photo 2:

Southwest view of field adjacent to drainage ditch with hydrological connectivity to SLO Creek. The drainage ditch is the dark area along the fenceline toward the left side of the photo.

Photo taken April 3, 2008.

Photo 3:

Location of Soil Test Pit #1 in drainage ditch. This ditch was determined to be jurisdictional other waters.

Photo taken April 3, 2008.

Photo 4:

Location of Soil Test Pit #2 in field proposed as a construction staging area. This area was determined to be non-wetlands (uplands).

Photo taken April 3, 2008.

Photo 5:

Northeast view of SLO Creek riparian corridor at a location west of South Higuera Street.

Photo taken April 3, 2008.

Photo 6:

Location of Soil Test Pit #3 in the streambed of SLO Creek at the vicinity of a proposed bridge crossing. SLO Creek was determined to be jurisdictional wetlands.

Photo taken April 3, 2008.

Photo 7:

Location of Soil Test Pit #4 in a grassy field outside of the SLO Creek riparian corridor. This area was determined to be non-wetlands (uplands).

Photo taken April 3, 2008.

Photo 8:

Arrow demarcates approximate location of Soil Test Pit #5 in the streambed of SLO Creek at the vicinity of a proposed bridge crossing. SLO Creek was determined to be jurisdictional wetlands.

Photo taken April 3, 2008.

Photo 9:

Location of Soil Test Pit #6 in a pasture proposed as a staging area outside of the SLO Creek riparian corridor. This area was determined to be non-wetlands (uplands).

Photo taken April 3, 2008.

Photo 10:

Location of Soil Test Pit #7 in a grassy field proposed as a staging area outside of the SLO Creek riparian corridor, which occurs in the background. This area was determined to be non-wetlands (uplands).

Photo taken April 4, 2008.

Photo 11:

Location of Soil Test Pit #8 in a seasonal wetland area that the proposed route would pass through. This area is vegetated with poison hemlock, which is a weedy yet facultative wetland species, but is not considered a jurisdictional wetland due to a lack of wetland hydrology and wetland soils.

Photo taken April 4, 2008.

Photo 12:

North view of roadside edge of South Higuera Street where a portion of the bikepath is proposed. No jurisdictional areas occurred at this location.

Photo taken April 4. 2008.

Photo 13:

North view of SLO Creek at the existing San Luis Bay Drive Bridge. A new bridge for the pathway is proposed to be constructed just south of the existing bridge.

Photo taken April 4, 2008.

Photo 14:

Location of Soil Test Pit #9 in the streambed of SLO Creek at the vicinity of the new proposed San Luis Bay Drive crossing. SLO Creek was determined to be jurisdictional wetlands. Hydric riverwash soils occur along the streambed.

Photo taken April 4, 2008.

Photo 15:

Location of Soil Test Pit #10 in a grassy agricultural field outside of the SLO Creek riparian corridor. This area was determined to be non-wetlands (uplands).

Photo taken April 4, 2008.

Photo 16:

North view of an existing agricultural access road south of San Luis Bay Drive where a section of the new pathway is proposed. Non-jurisdictional willow scrub outside of the SLO Creek corridor occurs along this access road in some sections.

Photo taken April 4, 2008.

Photo 17:

South view of the existing agricultural access road south of San Luis Bay Drive where a section of the new pathway is proposed. Here is a representative view of some of the non-jurisdictional willow scrub outside of the SLO Creek corridor that may need to be trimmed to create space for construction equipment to construct the new path.

Photo taken April 4, 2008.

Photo 18:

Location of Soil Test Pit #11 in a disturbed field adjacent to the proposed pathway where a staging area is proposed. This area was determined to be non-wetlands (uplands).

Photo taken April 4, 2008.

Photo 19:

South view of the proposed terminus of the new pathway before it crosses over Highway 101 to the west (right). The floodplain of SLO Creek with its expansive willow riparian vegetation is visible in the background. The proposed pathway and overcrossing would avoid impacting this vegetation.

Photo taken April 4, 2008.

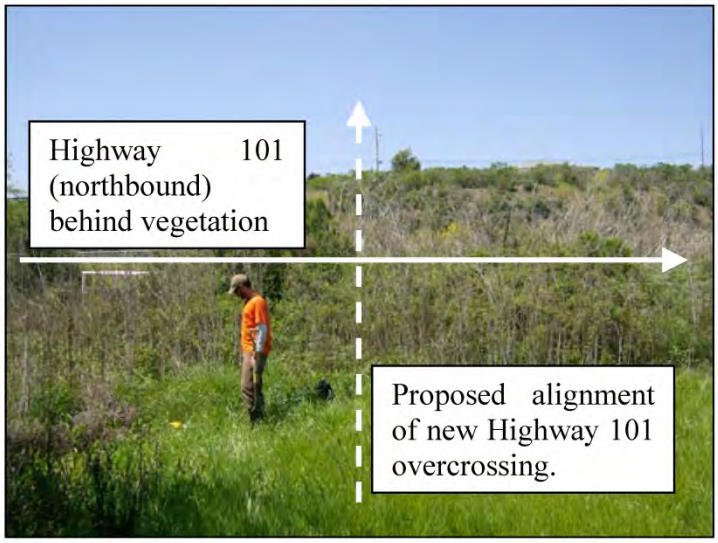

Photo 20:

West view of proposed Highway 101 overcrossing. Vegetation in the background is mostly coastal scrub, and the highway is located behind the vegetation.

Photo taken April 4, 2008.

Photo 21:

Location of Soil Test Pit #12 adjacent to the SLO Creek floodplain at the vicinity of the new proposed Highway 101 overcrossing. Although hydrophytic species occurred at this location, this area was determined to be non-wetlands (uplands) due to lack of hydric soils and wetland hydrology.

Photo taken April 4, 2008.

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Attachment E:
Stein's Criteria for Evaluating Riverine Systems

Stein's Criteria for
Evaluating the Functions and Values of Riverine Systems

Score	General Site Characteristics
	Habitat Structural Diversity
0.0	Site is unable to support native riparian vegetation
0.2	Site can support native riparian vegetation; however no riparian vegetation is present.
0.4	Site contains sparse scattered or remnant patches of native riparian vegetation.
0.6	Riparian vegetation on site contains tree and/or saplings but no (or poorly developed) shrub layer.
0.8	Riparian vegetation on site contains tree and saplings with a native shrub layer.
1.0	Riparian vegetation is structurally diverse with trees, saplings, seedlings, and native shrub under story.
	Habitat Coverage and Spatial Diversity
0.0	Site is unable to support native riparian vegetation
0.2	Site can support native riparian vegetation; however no riparian vegetation is present.
0.4	Patches of monotypic riparian vegetation covering up to 50% of site interspersed among grasses or bare ground.
0.6	Patches of diverse riparian vegetation covering up to 30% of site interspersed among grasses, exotic plants, or bare ground; and/or patches of monotypic riparian vegetation covering up to 50% of site interspersed among grasses or bare ground.
0.8	Diverse riparian vegetation covering 30-70% of the site interspersed in open space
1.0	Diverse riparian vegetation covering 70-100 percent of the site, interspersed in open space.
	Percent of Exotic / Invasive Vegetation
0.0	Site is covered by pure stands of exotic vegetation or lacks any riparian vegetation.
0.2	Site is covered by 70-99% exotic vegetation.
0.4	Site is covered by 40-69% exotic vegetation.
0.6	Site is covered by 10-39% exotic vegetation
0.8	Site is covered by 5-9% exotic vegetation
1.0	Site is covered by less than 5% exotic vegetation
	Hydrologic Regime of Riparian Zone
0.0	No regular supply of water to the site. No surface drainage, impoundment, or groundwater discharge.
0.2	Water supply to the site is solely from artificial irrigation. No natural hydrologic source.
0.5	Site is sustained by natural source of water, but is not associated with a stream, river, or other concentrated flow conduit. No evidence of riparian processes, such as over bank flow, scour, or deposition.
0.7	Site is within or adjacent to an impoundment on a natural water course which is subject to fluctuations in flow or hydroperiod.
1.0	Site is within or adjacent to a stream, river, or other concentrated flow conduit which provides the primary source of water to the site. The site contains some evidence of riparian processes such as overbank flow, scour or deposition.

Score	General Site Characteristics
	Characteristics of Floodprone Area
0.0	Channel is contained in a concrete-lined channel, culvert, etc.
0.2	Channel has an earthen bottom; however, it is structurally confined such that there is no opportunity for overbank flow into floodprone area.
0.3	Channel has an earthen bottom and earthen side slopes; however, it is incised or confined such that there is no opportunity for overbank flow into the floodprone area.
0.6	Site includes a floodprone area above the bankfull channel that provides an opportunity for overbank flow during moderate flow events. However, the site is confined by levees, berms, dikes, or other obstructions or barriers such that the area available for overbank flow is less than twice the width of the channel at bankfull conditions.
0.8	Site is part of a floodplain which provides an opportunity for overbank flow during moderate flow events. The site is confined by levees, berms, dikes, or other obstructions or barriers; however, the area available for overbank flow is equal to or greater than twice the width of the channel at bankfull conditions.
1.0	Same condition as indicated under score of 0.8 and there is minimal evidence of incision and evidence of overbank flow.
	Micro and Macro Topographic Complexity
0.0	Channel is contained in a concrete-lined channel, culvert, etc.
0.2	Floodprone area is characterized by a homogenous, flat earthen surface with little to no micro and macro topographical features.
0.5	Floodprone area contains micro and/or macro topographical features such as meanders, bars, braiding, secondary channels, backwaters, terraces, pits, ponds, hummocks, but is predominantly homogeneous or flat surface.
0.8	Floodplain is not predominantly homogeneous, but is characterized by microtopographic features such as pits, ponds, hummocks, bars. However, there are no macrotopograhic features such as braiding, secondary channels, or backwaters.
1.0	Floodprone area is characterized by micro and macro topographic complexity such as meanders, bars, braiding, secondary channels, backwaters, terraces, pits, ponds, hummocks, etc.
	Biogeochemical Processes-Vegetation Roughness and Organic Carbon
0.0	Channel is contained in a concrete-lined channel, culvert, etc., with little to no vegetation or detritus.
0.2	Site can support grasses, forbs, or other herbaceous vegetation and there is woody debris, leaf litter, or detritus present in the channel.
0.4	Channel supports at least 25 % relative cover of grasses, forbs, herbaceous, or riparian vegetation and there is at least 10% relative cover of woody debris, leaf litter, or detritus in the channel.
0.6	Site contains between 25% and 50% relative cover of any strata of riparian vegetation and between 10% and 40% relative cover with woody debris, leaf litter, or detritus.
0.8	Site contains between 50% and 75% relative cover of any strata of riparian vegetation and between 40% and 60% relative cover with woody debris, leaf litter, or detritus.
1.0	Site contains greater than 75% relative cover of any strata of riparian vegetation and 60% relative cover with woody debris, leaf litter, or detritus.

Stein's Criteria for Evaluating Depressional - Emergent Marsh Systems

Score	General Site Characteristics
	Diversity of Aquatic Vegetation
0.0	Site permanently converted to a land use, such as housing or agriculture which is not able to support native palustrine vegetation.
0.2	Vegetation on the site consists of a monoculture of hydrophytic vegetation.
0.4	Vegetation on the site is dominated by two species of hydrophytic vegetation.
0.6	Site dominated by more than two species of hydrophytic vegetation, with one species comprising more than 50% of the total plant population.
0.8	Site dominated by more than two species of hydrophytic vegetation, with no one species comprising more than 50% of the total plant population.
1.0	Diverse palustrine vegetation, with no one species comprising more than 50% of the total plant population
	Ratio of Open Water to Hydrophytic Vegetation
0.0	Site permanently converted to a land use, such as housing or agriculture which is not able to support native palustrine vegetation.
0.2	Site contains less than 10% or more than 90% open water, with the remaining being hydrophytic vegetation.
0.5	Site contains between 10% and 30% open water OR site contains between 75% and 90% open water, with the remainder being hydrophytic vegetation.
0.8	Site contains between 30% and 50% open water, with the remainder being hydrophytic vegetation.
1.0	Site contains between 50% and 75% open water, with the remainder being hydrophytic vegetation.
	Percent of Exotic, Invasive Vegetation
0.0	Site is covered by pure stands of exotic vegetation or lacks any riparian vegetation.
0.2	Site is covered by 70-99% exotic vegetation.
0.4	Site is covered by 40-69% exotic vegetation.
0.6	Site is covered by 10-39% exotic vegetation.
0.8	Site is covered by 5-9% exotic vegetation.
1.0	Site is covered by less than 5% exotic vegetation
	Hydrologic Support
0.0	No Regular supply of water to the site. Site not associated with any water source, surface drainage, impoundment, or groundwater discharge.
0.2	Water supply to the site is solely from artificial irrigation. No natural surface drainage, natural impoundment, groundwater discharge or other natural hydrologic regime.
0.8	Site is sustained by natural or consistent source of water, but is dry for some portion of the year during an average rainfall year.
1.0	Site is sustained by natural or consistent source of water year-round. Site may dry out during drought conditions.
	Duration of Ponding
0.0	Ponding is transient following storm events and persists for no more than one day.

Score	General Site Characteristics
0.2	Site may pond water for several days following storm events; however, ponding seldom persists beyond ten days. There may be several ponding events during a season.
0.4	Ponding duration is on the order of several weeks. There may be several ponding events during a season.
0.6	Ponding duration is on the order of several months, but less than six months. There may be several ponding events during a season.
0.8	On average, site ponds water for more than six months.
1.0	Site ponds water year-round.

Appendix I Conceptual Habitat Mitigation and Monitoring Plan

Bob Jones Pathway – San Luis Obispo to Ontario Road Conceptual Habitat Mitigation and Monitoring Plan

Prepared for

County of San Luis Obispo

Prepared by

SWCA Environmental Consultants

March 2013

BOB JONES PATHWAY – SAN LUIS OBISPO TO ONTARIO ROAD CONCEPTUAL HABITAT MITIGATION AND MONITORING PLAN

Prepared for

County of San Luis Obispo
General Services Agency
County Parks
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February 29, 2012 (Revised March 5, 2013)

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Appendix B: Jurisdictional Areas Impacts Maps
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1. INTRODUCTION

This conceptual Habitat Mitigation and Monitoring Plan (HMMP) has been prepared to describe the proposed methods for mitigating project impacts within Regional Water Quality Control Board (RWQCB), and California Department of Fish and Game (CDFG) jurisdiction resulting from implementation of the Bob Jones Pathway – San Luis Obispo to Ontario Road (project). It is important to note that this HMMP is conceptual and is intended to assist project planners in preparing for project implementation. The conceptual HMMP includes an abbreviated table of contents that will be expanded prior to submittal of the final HMMP during the permitting process. The final HMMP will include detailed discussions of the following additional topics: *Financial Assurances, Mitigation and Restoration Implementation Plan, Maintenance Plan, Monitoring Plan with Performance Standards, and Contingency Measures for Adaptive Management and Long-term Management.* The final HMMP structure will follow guidelines presented in the project draft Streambed Alteration Agreement. The Caltrans Natural Environment Study (NES) and its associated appendices (such as the Biological Assessment and Wetland Assessment) fully describe the scope and impacts of the proposed project. CHMMP reviewers should have access to the NES and all associated appendices for reference purposes.

2. PROJECT AND SITE DESCRIPTION

2.1. Responsible Parties and Financial Assurances

As the project applicant, the party responsible for meeting the mitigation obligation pursuant to anticipated conditions of Streambed Alteration Agreement and other pertinent permits will be:

Janette D. Pell, General Services Agency Director
County of San Luis Obispo General Services Agency
County Parks
1087 Santa Rosa Street
San Luis Obispo, CA 93408

It is anticipated that County of San Luis Obispo General Services Agency (County) will have established the financial and technical means to implement the final HMMP and any required contingency actions. The site is located primarily within Caltrans ROW; however, private third-party conservation easements will be necessary to construct the pathway in some areas.

The portion of the proposed Bob Jones Pathway – San Luis Obispo to Ontario Road (project) discussed herein is an approximately 4.4-mile (7.1-kilometer) path that would connect the existing path along South Higuera Street from the San Luis Obispo Land Conservancy's (SLOLC) Octagon Barn, then south and paralleling San Luis Obispo Creek (SLO Creek) to the Ontario Road Staging Area, near State Route 101 and Avila Bay Drive in San Luis Obispo County, California (refer to Figures 1 through 3 and Preliminary Plans in Attachment A).

2.2. Project Location

The purpose and need is to complete a primarily Class I (off street) pedestrian/bike path for recreational and alternative transportation use that will connect the community of Avila Beach with San Luis Obispo. Portions of the Bob Jones Pathway have previously been completed from Avila Beach to the Ontario Road Staging Area, and this project would reconcile the discontinuity between Avila Beach and San Luis Obispo.

2.3. Project Summary

Construction of the Build Alternative would primarily occur within a typically narrow 30- to 140-foot (ft) (9- to 43-meters [m]) wide construction disturbance zone on nearly level terrain. In several areas the path would run parallel to and within 30 ft (9 m) of the banks of SLO Creek and its riparian corridor, potentially requiring the trimming and possible removal of some trees to clear necessary space to allow construction. Trimming and/or removal of several riparian trees would also be required for three proposed new bridge crossings of SLO Creek for the new pathway. Some trees may also be trimmed for construction access along the path and for overhead clearance. The proposed trail has been broken down into five segments for descriptive purposes.

Segment 1 of the new path would begin at the Octagon Barn on South Higuera Street where a trailhead with parking and other facilities would be constructed. A Class I path with a retaining wall would proceed along the east side of South Higuera Street, and then cross to the west side, where the Class I path would be between the road and SLO Creek. The path would then be routed across to the east side of South Higuera Street before reaching a new South Higuera Bridge (BR-A) for the path to be constructed across SLO Creek near the Filipponi Ecological Reserve. Several culverts would be installed along this segment.

Segment 2 of the Class I path would proceed between the east edge of South Higuera Street and SLO Creek at or near the top of bank, upon reaching the Maino property in the vicinity of the U.S. 101 northbound off ramp. Along this section just north of Cloveridge Lane, a retaining wall and curb would be added as needed where the west bank of SLO Creek slopes steeply toward the thalweg (low point of the channel). At the southern end of this section, the path would be located within the Cloveridge Lane right-of-way (ROW) and would become a Class III, then a Class I path, before crossing SLO Creek again at the new Bunnell Bridge (BR-B). Several culverts would need to be repaired along this segment in the future.

After crossing SLO Creek at the Bunnell Bridge, Segment 3 of the Class I path would proceed adjacent to an agricultural field in Baron Canyon open space lands east of the SLO Creek corridor. Four new culverts would be installed under the path along this section, primarily extensions of the culverts that drain Monte Road, along with the improvement of two existing culverts near where the path would join Monte Road, as needed. Once this section of the trail reaches Monte Road, it would proceed along Monte Road as a Class III path before converting to a Class I path through the edge of agricultural land just west of Monte Road, with the extension of three existing culverts as needed and the installation of two new culverts, before reaching San Luis Bay Drive.

At Segment 4, a new crosswalk with a three-way stop would be implemented at the intersection of Monte Road and San Luis Bay Drive. The Class I path would parallel San Luis Bay Drive before reaching a new San Luis Bay Drive Bridge (BR-C) for the path across SLO Creek. Several culverts would be installed or extended.

The final segment of the path, Segment 5, extends from San Luis Bay Drive to the Ontario Road Staging Area. The Class I path would extend from the junction of Segment 4 and Segment 5, eventually traveling along an existing farm access road easement with two culverts installed under the path. The Class I path would then reach an elevated approach ramp for the new Highway 101 pedestrian overcrossing toward the Ontario Road Staging Area before connecting with the existing Bob Jones Trail to the south.

Several proposed staging areas have been identified along the new path. All staging areas will result in temporary impacts unless otherwise described. Access will be along public and private roads and along California Department of Transportation (Caltrans) ROW.

Figure 1. Project Vicinity Map

Figure 2. Project Location Map

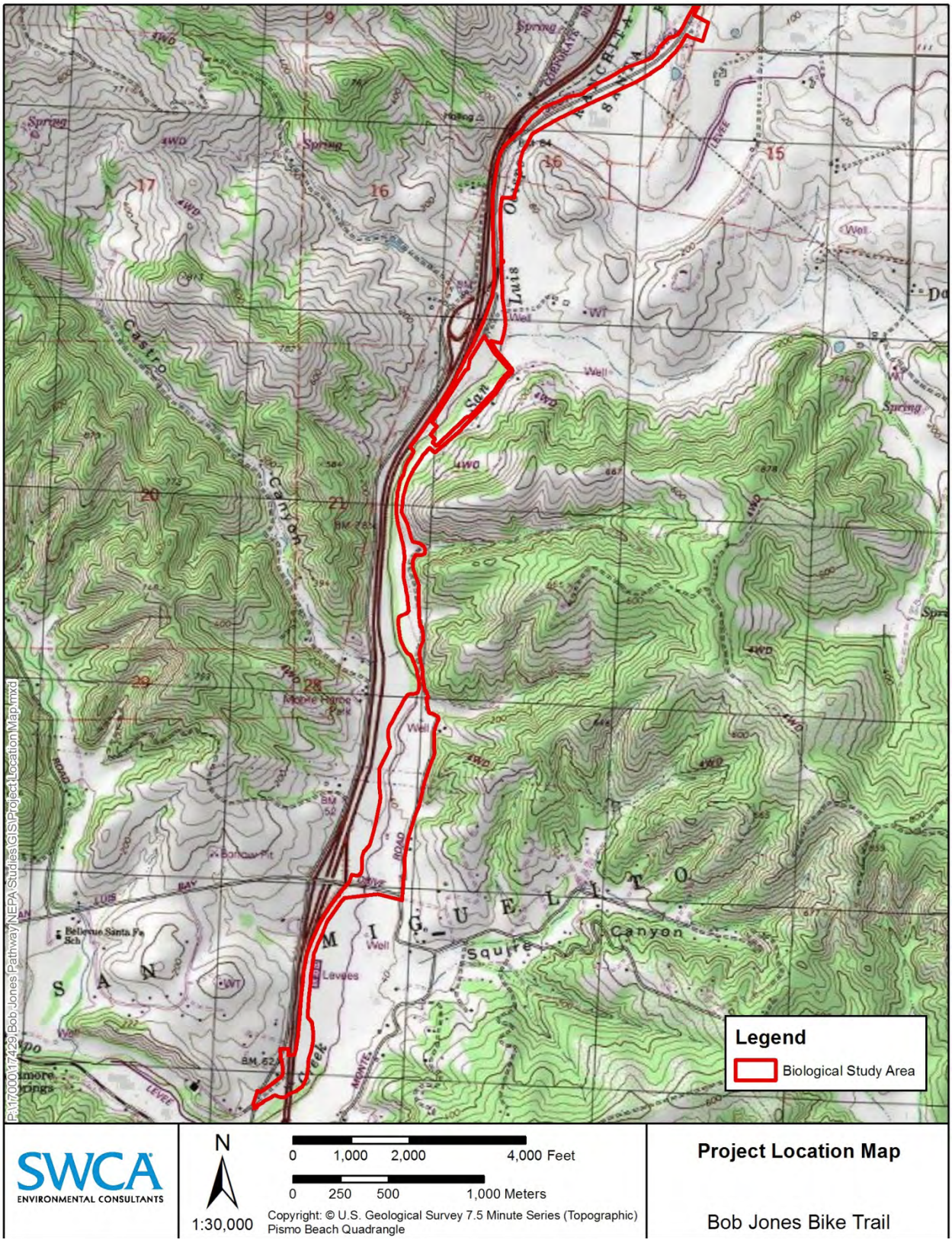
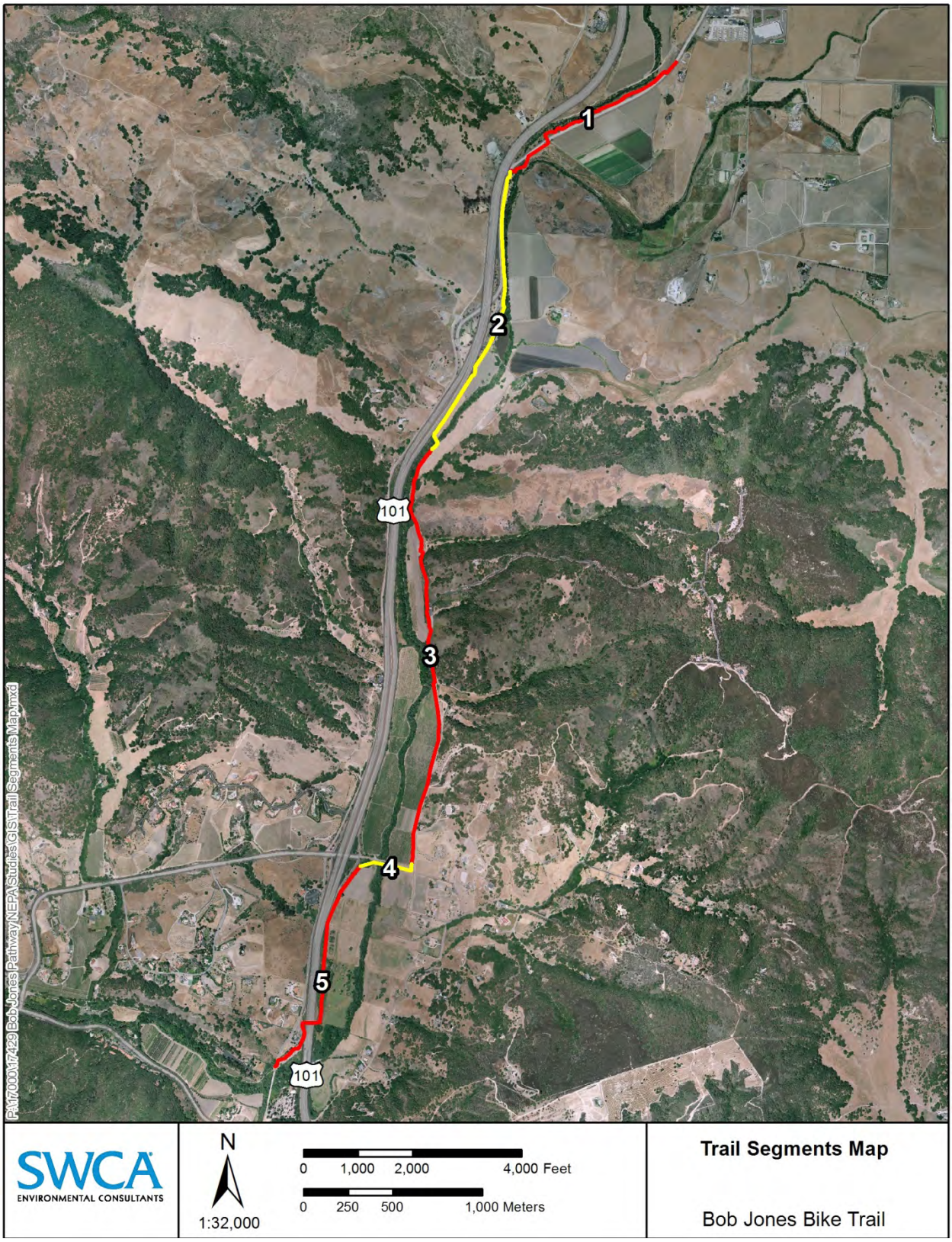


Figure 3. Trail Segments Map



The County has indicated that construction of the new corridor would be in roughly three sections/phases as funding becomes available. Construction of the entire path would be anticipated to occur within six years of the start of Phase 1. Construction of the bridge crossings and pathway segments located immediately adjacent to and through the riparian corridor of SLO Creek would occur within the typical agency-allowed window from June 1 to October 31 of any given year. Construction of the remainder of the pathway outside of the riparian corridor would occur year-round, weather permitting, and provided that all erosion control and stormwater management measures were in place and properly functioning.

2.4. Existing Conditions

SLO Creek is managed for flood control purposes by the San Luis Obispo Flood Control and Water Conservation District, Zone 9 (City of San Luis Obispo and County of San Luis Obispo, 2003). Because this CHMMP has been prepared to address impacts to SLO Creek and associated jurisdictional areas, the following discussion of the project site existing conditions focuses on areas within the defined channel of SLO Creek.

Much of the information in regards to the SLO Creek watershed discussed in this CHMMP has been provided by the following sources:

- *Waterway Management Plan for San Luis Obispo Creek Watershed, Volume 1, Appendix B: Biological Resources Inventory* (City of San Luis Obispo and County of San Luis Obispo 2003). The Waterway Management Plan (WMP) contains inventory information, a detailed hydrologic/hydraulic analysis of the watershed and its main tributaries, and an identification of the management problems and management needs of the waterways;

- *Distribution and Abundance of Steelhead in the San Luis Obispo Creek Watershed, California* (Thomas R. Payne & Associates 2004), which generated estimates of abundance and described the distribution of juvenile steelhead rearing during the summer low-flow period throughout the SLO Creek watershed; and,

- *Distribution of the Five Native Fish Species in the San Luis Obispo Creek Watershed* (Tamagni 1995), which contains information on the distribution of the five native fish species in the watershed and habitat data.

The SLO Creek watershed is centrally located in San Luis Obispo County between the Santa Lucia Mountains and coastal hills of central California. Its headwaters originate in the foothills near Cuesta Grade north of San Luis Obispo, flowing approximately 18 miles (29 km) to the Pacific Ocean at San Luis Bay, near the community of Avila Beach. The general flow of water is from the northeast to the southwest, closely paralleling State Route 101 south of San Luis Obispo. The City of San Luis Obispo encompasses 9.5 mi^2 (24.6 km^2) near the center of the watershed, with the remaining 84 mi^2 (217 km^2) watershed area in County jurisdiction.

The watershed extends from a high elevation of 2,461 ft (750 m) above sea level near Cuesta Grade to sea level at Avila Beach. SLO Creek is the major waterway that runs through the City of San Luis Obispo, which is situated at an elevation of about 230 ft (70 m) (downtown). The drainage area of the SLO Creek watershed at its mouth is approximately 84.2 mi^2 (218 km^2). The basin is a slightly elongated area about 13 miles (21 km) long and between 6.2 and 10 miles (10 and 16 km) wide, with a dendritic drainage pattern.

2.5. Jurisdictional Areas to be Impacted

SWCA Environmental Consultants (SWCA) has prepared a Wetland Assessment for the project. The following discussion briefly describes the habitats that occur within the anticipated disturbance areas requiring mitigation to compensate for impacts. Natural communities/habitats present within the BSA include agricultural land, ruderal (disturbed), landscaping/ornamental vegetation (including groundcover and planted trees), non-native annual grassland, serpentine bunchgrass, coastal scrub, coast live oak woodland, riparian (including riparian forest, riparian scrub, freshwater marsh, and riverine habitats), and seasonal wetlands that are not USACE-jurisdictional. Much of the remaining areas within the BSA consist of roads, buildings, and other artificial structures, are largely unvegetated, and have been mapped as developed areas. Habitats such as ruderal/disturbed and grasslands that would be disturbed by the proposed project are not addressed in this conceptual HMMP because they do not occur within jurisdictional areas requiring compensatory mitigation. The riparian habitat associated with SLO Creek likely falls under regulatory jurisdiction of RWQCB, and CDFG (refer to Jurisdictional Areas Impacts Maps in Attachment B and Photo Documentation in Attachment C). Riparian habitat is the vegetative community of particular concern, and is discussed in more detail below. The proposed project plans are designed to avoid fill within any USACE jurisdictional areas. Impacts to jurisdictional areas have been quantified in Table 1.

SLO Creek has a nearly continuous riparian corridor from its headwaters at Cuesta Grade to Avila Beach. The riparian forest habitat within the BSA can be further classified as central coast arroyo willow riparian forest (Holland, 1986). Dominant tree species of the riparian forest habitat along SLO Creek supports a diverse assemblage, including California black walnut (*Juglans californica*), western sycamore (*Platanus racemosa*), cottonwood (*Populus* spp.) box elder (*Acer negundo* var. *californicum*), California bay (*Umbellularia californica*), white alder (*Alnus rhombifolia*), arroyo willow (*Salix lasiolepis*), and coast live oak (*Quercus agrifolia*).

Riparian scrub occurs below the riparian forest layer. The riparian scrub habitat within the BSA can be further classified as central coast riparian scrub (Holland, 1986). These riparian scrub communities are typically close to groundwater and usually vegetated by willows (*Salix* spp.) (Holland, 1986). They have relatively low overstories compared to riparian forest communities. Dominant plant species for this habitat type within the BSA include arroyo willow, with species such as California blackberry (*Rubus ursinus*), greater periwinkle (*Vinca major*), and garden nasturtium at the ground layer. Young coast live oak trees and coyote brush are occasionally interspersed with the willows in these riparian scrub communities.

Table 1. Estimated Impacts to Jurisdictional Areas

Jurisdictional Area*	Permanent			Temporary			TOTAL		
	ft^2	m^2	ac	ft^2	m^2	ac	ft^2	m^2	ac
USACE Wetlands[1]	0	0	0	0	0	0	**0**	**0**	**0**
USACE Other Waters[2]	0	0	0	0	0	0	**0**	**0**	**0**
CDFG/RWQCB jurisdiction[3]	22,782	2,117	0.52	76,365	7,095	1.75	**99,147**	**9,211**	**2.3**

* Impact area = jurisdictional areas within the area of direct impact (ADI).
[1] Also includes RWQCB and CDFG jurisdictional areas below the ordinary high water mark (OHWM).
[2] Includes other non-wetland waters regulated by USACE, usually determined by limit of the OHWM.
[3] CDFG jurisdiction extends from the thalweg of the channel to the top of bank or outer extent of riparian vegetation, whichever is greater. May also include areas under USACE jurisdiction (below the OHWM) and RWQCB jurisdiction (above the OHWM).

Freshwater marsh communities typically occur in nutrient-rich mineral soils that are saturated throughout most of the year. These communities are found in locations containing slow-moving or stagnant shallow water and a high water table (Holland, 1986), such as the streambed of SLO Creek. Such sites commonly occur in stream channels and around springs, seeps, and depressional areas. Standing water does not have to be present throughout the entire year, since the water table is so close to the soil surface that it can be tapped in the dry season by hydrophytic plants. Freshwater marsh vegetation ranges from sparse to moderately dense along the channel section traversing the study area, including species such as common watercress (*Rorripa nasturtium-aquaticum*), smartweed (*Polygonum* sp.), brown-headed rush (*Juncus phaeocephalus*), umbrella sedge (*Cyperus eragrostis*), spikerush (*Eleocharis macrostachya*), stinging nettle (*Urtica dioica*), and horsetail (*Equisetum arvense*). No such areas with freshwater marsh wetlands occurred within the study area in the Wetland Assessment.

Riverine habitat occurs along the streambed of SLO Creek. This habitat type is seasonally variable, and includes open water components (active, flowing channel), unvegetated sandbars (riverwash, active floodplain), and seasonally emergent freshwater marsh in some areas. The tributaries of SLO Creek can be described as riverine intermittent streambeds, some with riparian vegetation and others without.

The proposed project will result in permanent and temporary impacts to areas within RWQCB, and CDFG jurisdiction. Table 1 quantifies the anticipated area of each jurisdiction that will be impacted.

2.6. Functions and Values of Jurisdictional Areas

The functions and values of the jurisdictional areas identified in the project area were evaluated using the criteria-based method developed by Dr. Eric Stein, published in the ACOE report titled, *Function-based Performance Standards for Evaluating the Success of Riparian and Depressional/Emergent Marsh Mitigation Sites* (Stein, 1999). This method was developed for evaluating the success of riparian and depressional marsh mitigation sites. Although wetland functions and values are often complex, this method provides an adequate baseline for evaluating the functions and values of existing jurisdictional areas.

The average site scores derived in Table 2 below correspond with the observed characteristics of SLO Creek and the mapped drainage ditch with hydrological connectivity to SLO Creek. Based on an evaluation of each resource area it was determined that SLO Creek, with its permanent hydrological activity and diverse riparian corridor, provides moderately-high riparian and wetland habitat functions and values overall. The drainage ditch with connectivity to SLO Creek, along with its lack of riparian habitat and dominance by weedy vegetation, provides poor riparian and wetland habitat functions and values. No emergent marsh systems were characterized within the study area.

Table 2. Function and Value Ratings of Riverine Systems

Resource Area	Stein's Criteria for Evaluating the Functions and Values of Riverine Systems							Average Site Score
	Habitat Structural Diversity	Habitat Coverage / Spatial Diversity	Percent of Exotic / Invasive Vegetation	Hydrologic Regime of Riparian Zone	Characteristics of Floodprone Area	Micro / Macro Topographic Complexity	Biogeo-chemical Processes	
Ditch Test Pit #1	0	0	0	0.5	0.6	0.2	0.2	**0.2**
SLO Creek Test Pit #3	0.8	1.0	0.8	1.0	0.8	0.5	0.8	**0.8**
SLO Creek Test Pit #5	0.6	1.0	0.4	1.0	0.8	0.5	0.8	**0.7**
SLO Creek Test Pit #9	0.6	0.4	1.0	1.0	0.8	0.5	0.6	**0.7**

3. GOALS OF THE HABITAT MITIGATION AND MONITORING PLAN

The goal of this conceptual HMMP is to outline the proposed methods to mitigate for permanent impacts to jurisdictional areas and restore temporary impacts to the project site. This CHMMP has been prepared to tentatively address the project-related impacts to the state jurisdictional areas using a watershed approach that may include on-site compensatory mitigation, off-site compensatory mitigation, or a combination of on-site and off-site compensatory mitigation. On-site compensatory mitigation is defined as an area located on the same parcel of land as the impact site, or on a parcel of land contiguous to the impact site; off-site compensatory mitigation is defined as an area that is neither located on the same parcel of land as the impact site, nor on a parcel of land contiguous to the parcel containing the impact site (USACE, 2008b). On-site, in kind mitigation is typically preferred.

Where the impact is to a high-value resource, more than one-to-one replacement on an acreage basis may be necessary just to achieve functional equivalence between the impact and mitigation sites (USACE, 2008b). The following compensatory mitigation ratios are proposed at this time:

- On-site mitigation (within areas in or near the SLO Creek Watershed) for permanent impacts to jurisdictional areas would be implemented at a 2:1 ratio (CDFG may require a replacement of 3:1 or more for trees removed);
- Off-site mitigation for permanent impacts to jurisdictional areas would be implemented at a 3:1 ratio; and,
- On-site and/or off-site mitigation for temporary impacts to jurisdictional areas would be implemented at a 1:1 ratio.

- Any loss of southern California black walnut trees shall be mitigated at a 4:1 restoration ratio for every walnut tree removed and a 2:1 ratio for every walnut tree trimmed or otherwise impacted but not removed. If more than 25 percent of a walnut tree must be trimmed, it shall be mitigated at a 4:1 restoration ratio.

Tentative mitigation locations are depicted in Attachment A. All compensatory mitigation is anticipated to be "in kind" (i.e., essentially the same species, functions, and values as the wetlands to be replaced).

3.1. Impact Mitigation

Permanent impacts to areas under the jurisdiction of USACE have been avoided by design. The proposed project would utilize bottomless arch culverts and free-span bridges to avoid fill below the OHWM in SLO Creek and other USACE jurisdictional areas. Permanent impacts to vegetation under the jurisdictions of RWQCB and CDFG (above the OHWM) would result from the construction of three proposed bridge crossings. Permanent impacts are proposed to be mitigated at a 2:1 ratio (or alternatively, potentially 3:1 for trees removed, if required by CDFG) by enhancing riparian and/or freshwater marsh vegetation in and near SLO Creek with emphasis on areas that are unvegetated, minimally vegetated, or dominated by exotic species. Temporary impacts may result from work areas needed to for installation of the water crossings. The potential need to trim riparian trees to clear construction space for the new pathway may also result in temporary impacts to this vegetation. Temporarily disturbed areas within the channel of SLO Creek are expected to be of minimal impact and it is anticipated that they will be able to revegetate/restore naturally. Temporarily disturbed areas containing riparian vegetation will be restored with the appropriate native species at a 1:1 ratio. Table 3 presents a summary of the proposed mitigation acreage, based on these ratios and assuming on-site mitigation is feasible in or near the areas of disturbance and that the proposed mitigation sites in Attachment A will be able to be secured/purchased by the applicant.

Table 3. Summary of Impact and Mitigation Areas

Jurisdictional Area	Impact Type	Area (ac)	Mitigation Ratio	Mitigation Area per ratio (ac)	Mitigation Area Proposed (ac)
USACE Wetlands[1]	Permanent	0	2:1	0	Onsite restoration / enhancement along SLO Creek channel near area of disturbance.
	Temporary	0	1:1	0	Onsite natural revegetation / restoration along SLO Creek channel near area of disturbance
USACE Other Waters[1]	Permanent	0	2:1	0	Onsite restoration / enhancement near areas of disturbance.
	Temporary	0	1:1	0	Onsite restoration / enhancement near areas of disturbance.

Jurisdictional Area	Impact Type	Area (ac)	Mitigation Ratio	Mitigation Area per ratio (ac)	Mitigation Area Proposed (ac)	
CDFG Jurisdiction[2]	Permanent	0.52	2:1	1.04	1.04	Onsite restoration near areas of disturbance and creation in designated proposed mitigation areas.
	Temporary	1.75	1:1	1.75	1.75	Onsite restoration near areas of disturbance and creation in designated proposed mitigation areas.
				TOTAL	**2.79**	

1 Also includes mitigation obligation for RWQCB and CDFG jurisdictional areas below the ordinary high water mark (OHWM).
2 This jurisdictional area may also include areas under USACE jurisdiction (below the OHWM) and RWQCB jurisdiction (above the OHWM).

3.2. Target Functions and Values

The goal of the final HMMP will be to restore and enhance the vegetative structure found within the project area. A significant change in functions and values is not expected because any loss of vegetation will be minimized and stream contours will be restored as close as possible to their pre-construction condition. Enhanced vegetative structure in restored areas is anticipated to help improve stream functions and values; and provide greater wildlife cover and forage areas.

3.3. Time Lapse between Jurisdictional Impacts and Expected Compensatory Mitigation Success

Revegetation is anticipated to occur in the fall and early winter, when plants have the greatest chance of becoming established. Table 4 has a tentative schedule for mitigation and monitoring.

Table 4. Estimated Mitigation and Monitoring Schedule

YEAR: 2014	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
IMPLEMENTATION TASKS												
Construction Monitoring						X	X	X	X	X		
Prepare Planting Areas										X		
Install and Water Plantings											X	
Site/Revegetation Monitoring										X	X	X
Construction Completion Report												X

YEAR: 2015	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FIRST YEAR TASKS												
Weeding/Maintenance	X	X	X	X		X		X				
Site Monitoring			X			X			X			X
Annual Report												X

YEAR: 2016	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SECOND YEAR TASKS												
Weeding/Maintenance		X		X		X		X				
General Site Monitoring			X			X			X			X
Biological Data Collection				X								
Annual Report												X

YEAR: 2017	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
THIRD YEAR TASKS												
Weeding/Maintenance		X				X						
General Site Monitoring						X						X
Biological Data Collection				X								
Annual Report												X

YEAR: 2018	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FOURTH YEAR TASKS												
General Site Monitoring						X						X
Biological Data Collection				X								
Annual Report												X

YEAR: 2019	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FIFTH YEAR TASKS												
General Site Monitoring				X								X
Biological Data Collection				X								
Completion Report												X

4. MITIGATION AND RESTORATION IMPLEMENTATION PLAN

Implementation of the restoration and mitigation activities will be conducted or overseen by an agency-approved restoration specialist. The applicant's restoration specialist will use the tentative mitigation sites delineated in the plans in Attachment A and appropriate project grading plans when staking the revegetation areas and detailing plant locations. Sites in and adjacent to the proposed bridge crossings will also be considered for restoration if space and site conditions would allow for successful restoration. The restoration specialist will oversee site preparation and plant installation to ensure conformity with the final HMMP.

4.1. Plant Salvage

Plant materials, including willow cuttings and streambed emergent vegetation in areas temporarily impacted, will be collected from the SLO Creek riparian corridor. Willow cuttings should be salvaged from trees trimmed to clear space for the new bridges. Additional cuttings may be obtained from healthy trees in or near the BSA, with no more than 25 % of material from individual plants removed as cuttings. If it is determined that willows from the riparian corridor or emergents from the streambed will not adequately supply the replanting effort, commercially available tree seedlings and/or emergent plugs grown from local seed stocks may be utilized.

4.2. Site Preparation and Planting Plan

Installation of plant materials for revegetation/restoration is proposed to be performed as specified below. The process involves: 1) excavation of the planting hole; 2) filling each hole with water prior to planting; 3) backfilling excavated hole with native soil to the specified depth; and, 4) installation of plant and watering again to create a moisture reserve in the soil. The revegetation process shall be implemented at the start of the rainy season (i.e., October or November) to maximize exposure to rainfall.

Willow Plantings/Cuttings and Emergents

- Willow plantings/cuttings will be planted at 5-foot centers; streambed emergents will be planted at 3-foot centers.

- Prior to planting, an area two feet in diameter at each proposed plant site shall be manually cleared of all weed growth.

- All planting holes shall be dug to equal the depth and 1-1/2 times the width of the rootball or rhizome.

- After the soil has been well firmed around the rootball and watered, the crown of the rootball shall be at or above the surrounding finish grade or, on slopes, an elevation equal to the slope elevation at the lower edge of the plant pit.

- Each plant shall be planted in the center of the pit, and backfilled with native material. No filling will be permitted on the top of trunks or stems. Rootballs or rhizomes should not be disturbed when planting.

4.3. Irrigation Plan

The proposed mitigation sites will be evaluated to determine if supplemental irrigation will be necessary to facilitate growth and success goals. Irrigation, if necessary, will be either drip-line irrigation or spot watering. Areas to be restored that are regularly inundated will not be irrigated.

4.4. As-Built Conditions

Appendix A contains site plans as of February 2012, including proposed mitigation sites along SLO Creek. All proposed mitigation areas are located within the APE along San Luis Obispo Creek and within the same watershed as the project. County Public Works controls the South Higuera right of way areas that are proposed as mitigation sites. County Public Works has acknowledged that they will issue an encroachment permit for mitigation planting in the right of way. The total area of these mitigation sites is approximately 189,621 ft^2 (4.35 acres), which exceeds the anticipated 2.79 acres necessary to mitigate the permanent and temporary loss of riparian area within CDFG jurisdiction. It is anticipated that there will be enough space in these sites and in onsite areas in and near the proposed bridge crossings for the replacement of riparian and emergent vegetation at a 2:1 ratio (3:1 for removed trees), but it is possible that additional mitigation sites may need to be secured if there is not enough space in the areas proposed to meet the mitigation obligation.

5. MAINTENANCE PLAN

Maintenance during plant establishment is necessary to ensure success of the mitigation effort. The maintenance period will begin immediately upon completion of the mitigation planting, and is tentatively planned for a three-year period. At the end of the maintenance period, the appropriate regulatory resource agencies will review the monitoring reports, evaluate whether the performance standards have been met, and determine whether the maintenance period will be ended or extended. The maintenance program will ensure that watering of installed plants, weed control, debris removal, vandalism control, replanting, plant protection, and site protection are performed adequately.

5.1. Watering, Weed Control, and Herbicide Use

As mentioned previously, drip-line irrigation or spot watering will be used as necessary. Weed control and debris removal will be performed during the regularly scheduled monitoring site visits (refer to Table 4). As the project site is along a riparian stream, no herbicide use is anticipated in order to protect water quality.

5.2. Vandalism

Vandalism of the site is not expected as the site occurs in a seldom traveled rural location. Any vandalism of restoration plantings that compromise success goals will be rectified with additional restoration plantings.

5.3. Remedial Plantings and Fertilizing

Remedial plantings will be utilized as necessary to remain in compliance with the targeted success goals/criteria. No use of fertilizers is anticipated.

6. MONITORING PLAN

In order to accomplish project goals and objectives, the monitoring program will provide qualitative data to be used to determine the success of the mitigation area, and to identify the need for subsequent mitigation.

The agency-approved restoration specialist will collect and evaluate data indicating the relationship between actual site conditions and the performance criteria. Field monitoring and sampling will be followed by preparation of brief reports that include photo-documentation and evaluation of the success of the mitigation effort based on whether or not the annual performance goals for that year were met.

6.1. Monitoring Schedule

The monitoring program would consist of general monitoring visits and annual biological data collection visits (refer to Table 4). General monitoring visits can be conducted concurrently with maintenance visits. The focus of general monitoring visits is to assess the plantings need for fertilizer, water, or other maintenance related issues. The focus of the biological monitoring visits is to collect quantitative data that will provide an assessment of the site's relative vegetative cover of riparian vegetation.

At a minimum, the agency-approved restoration specialist will monitor and maintain the site on a monthly to bi-monthly basis during the two years after planting, and semi-annually for the third, fourth, and fifth years of the monitoring program (refer to Table 4). Successful maintenance may require more frequent visits, depending on site conditions. After large storm events that inundate the site, the regulatory-approved restoration specialist will inspect the site for damage. The regulatory-approved restoration specialist will ensure that the project is maintained as necessary during the monitoring period.

6.2. Performance Goals

The performance goal of the mitigation program will be to have freshwater marsh and willow riparian scrub absolute vegetation cover by no later than the end of the five-year monitoring period to be equal to or greater than the vegetation cover quantified under pre-construction existing conditions. Table 5 lists the annual performance standards for the on-site mitigation area for temporary impacts to ensure a successful mitigation effort. The mitigation and restoration areas will be monitored as necessary until the final success criteria are met. At the end of the monitoring period (to be determined), the site will be evaluated to determine if the success criteria have been met. If the program is determined to be unsuccessful, the restoration specialist will recommend appropriate contingency measures. The mitigation site will not be considered successful until the involved regulatory agencies have provided written verification that the final success criteria have been met. It is anticipated that, as soon as the third year, the mitigation site will be well established and functioning, such that it should be self-sustaining for the long-term.

Table 5. Annual Performance Standards and Final Success Criteria

Impacted Habitats	Proposed Mitigation	Goal for Annual % of Mitigation Ratio Acreage Restored				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Riparian wetland habitat under jurisdiction of RWQCB / CDFG	Restoration / Replacement / Creation of riparian and emergent wetland/freshwater marsh habitat to replace riparian habitat temporarily and permanently lost as a result of construction of the proposed project.	33%	66%	100%	100%[1]	100%[1]

[1] The mitigation goal is expected to be reached by Year 3, but will be continued to be monitored through Year 5 to ensure the site is self-sustaining.

Other success criteria goals for freshwater marsh and willow riparian scrub restoration include:

1. Less than 10% cover by non-native plant species (with exception of non-native annual grasses).
2. The mitigation sites will be self-sustaining, i.e. no maintenance or artificial irrigation for minimum of two years.
3. Stein's criteria for functions and values at the end of the third year of monitoring will be comparable to the pre-construction function and value ratings presented in Table 2.

Upon completion of the on-site mitigation planting, a sampling program of quadrats, linear transects, or other methodology may be established in adjacent non-disturbed habitats to be used as a comparison when collecting information from the on-site mitigation site. Alternatively, habitat mapping using GIS may be used to compare annual coverage from natural regrowth and areas with supplemental mitigation plantings with the pre-construction baseline conditions to gauge whether annual performance goals are being met. Information gathered during annual monitoring will be recorded on a standardized monitoring form.

6.3. Other Attributes to Monitor

Another important monitoring activity is to detect the presence and advance of invasive plant species, such as introduced pioneer species commonly found on disturbed seasonally-wet areas. Non-native species can invade the planted areas if left unchecked. Monitoring activities will determine the presence of such species and if action is required to control their advance. All wildlife observed in and around the mitigation areas will be documented as to species, number, and functional use of habitat (i.e., feeding, nesting, roosting, etc.). Observations of the general habitat quality will be documented. Permanent photo points will be established throughout the mitigation site to assist in tracking the success of the mitigation program. Permanent photo points will also be established during the preparation of the as-built planting plan, and ground view photos will be taken during each monitoring year from the same vantage point.

6.4. Reporting Requirements

The different regulatory agencies that have discretionary approval over the bridge replacement project have varying reporting requirements associated with the revegetation efforts. The reporting requirements for each agency will be discussed below.

6.4.1. Regional Water Quality Control Board

A RWQCB water quality certification typically requires submittal of three reports pertaining to this project.

6.4.2. California Department of Fish and Game

CDFG typically requires annual monitoring reports that must include photo documentation and detail the progression of the revegetation efforts.

7. COMPLETION OF COMPENSATORY MITIGATION

7.1. Notification of Completion

The applicant will notify the RWQCB and CDFG in writing upon completion of the monitoring period and attainment of the success criteria. At the end of the monitoring period the restoration specialist will request agency verification that the final success criteria have been met. The restoration specialist may request the agency verification of compliance prior to the end of the monitoring period if the final success criteria have been met at an earlier date.

Following receipt of the final monitoring report, the applicant understands that the agencies may request a site visit to confirm the completion of the compensatory mitigation effort and any jurisdictional delineation. The compensatory mitigation will not be considered complete without an on-site inspection by an agency representative or written confirmation that approved success criteria have been achieved.

8. CONTINGENCY MEASURES

8.1. Adaptive Management

The mitigation site should be self-sustaining, i.e., no maintenance or artificial irrigation, for a period of two years to be considered successful. If replanting is determined to be necessary, replanted areas will be monitored and maintained for a period agreeable to the relevant regulatory agencies. Any species substitutions proposed for contingency planting due to low survival of originally planted species must be approved in writing by the involved regulatory agencies. If a total site failure is evident, the applicant shall coordinate with the involved regulatory agencies to determine what alternative compensatory mitigation will be required. Identification of alternative mitigation sites may be necessary. Several potential locations for compensatory mitigation sites have been identified (refer to Attachment A).

8.2. Long-term Management

If it becomes apparent that the on-site mitigation will not attain the final success criteria within the expected time frame, the applicant will begin an assessment of reasons for failure, and will work with the involved regulatory agencies to determine an acceptable solution. If the site trends indicate that the success criteria will eventually be met but in a longer timeframe than anticipated, maintenance and monitoring will continue until the criteria have been satisfied.

9. REFERENCES

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