Biological Technical Report for the Riverwalk Project (Project No. 581894)

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Prepared for:

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ALDEN
ENVIRONMENTAL, INC

Biological Technical Report for the Riverwalk Project

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1.0 INTRODUCTION

This report describes existing biological conditions within the proposed Riverwalk Project (Project) site. This report provides the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (Corps), California Department of Fish and Wildlife (CDFW), City, and Project applicant with information necessary to assess impacts to biological resources under the California Environmental Quality Act (CEQA), City of San Diego (City) Biology Guidelines (2018), federal and State of California (State) Endangered Species Acts, federal Clean Water Act, and California Fish and Game Code. The City Project Number for this project is 581894.

1.1 PROJECT LOCATION

The approximately 195.0-acre Project site is located in Mission Valley in the City, on the La Jolla U.S. Geological Survey (USGS) 7.5-minute Quadrangle (Figures 1 and 2). Regional access to the site is provided by Interstate 8 (I-8), located immediately south of the Project site; State Route 163 (SR 163), located approximately one mile east of the Project site; and Interstate 5 (I-5), located less than two miles west of the Project site. Primary vehicle access to the Project would occur at Fashion Valley Road from the east, Hotel Circle North from the south, and Friars Road from the north.

The Project site is in the Mission Valley Community Plan Area and is zoned MVPD-MV-M/SP, indicating that there is a Specific Plan (SP) in effect on the Project site. The Project site is designated largely Multi-Use and a portion Open Space in the Mission Valley Community Plan; and Multiple Use; Commercial Employment, Retail, and Services; and Parks, Open Space, and Recreation in the City of San Diego General Plan. The approved Levi-Cushman SP identifies the site for a mix of residential, retail, office, hotel, and recreational use. The site is within the City's Multiple Species Conservation Program (MSCP) Subarea Plan area. The City's MSCP Multi-Habitat Planning Area (MHPA) also occurs within the central portion of the site (Figure 3).

Surrounding uses include commercial retail (Fashion Valley Mall) and hotel (Town & Country Resort) east of Fashion Valley Road. Single- and multi-family residential and commercial office developments are located on the north side of Friars Road within the Linda Vista Community Plan area. The properties west of the site include residential development in the form of condominium complexes and the Mission Valley YMCA. A mix of office, residential, hotel, and Interstate 8 (I-8) are located south of the Project site.

1.2 PROJECT DESCRIPTION

The Riverwalk Project proposes an amendment to the existing Levi-Cushman Specific Plan to replace the 195-acre Riverwalk property with the Riverwalk Specific Plan and redevelop the existing golf course as a walkable, transit-centric, and modern live-work-play mixed-use neighborhood that features an expansive Regional River Park along the San Diego River. Storm water will be collected on site and retained in detention basins prior to being released (Figure 4). The storm drain system will tie into existing outfall locations in the river channel on site. No new outfalls will be constructed in the river channel or wetland habitat. The storm water pollution control BMPs will capture and filter runoff (including from the potential dog parks in the Regional River Park) prior to it entering the MHPA through the existing outfalls.

The mix and quantity of land uses would change from what is approved in the existing Levi-Cushman Specific Plan to include 4,300 multi-family residential dwelling units; 152,000 square feet of commercial retail space; 1,000,000 square feet of office and non-retail commercial; approximately 95 acres of park, open space, and trails; adaptive reuse of the existing golf clubhouse into a community amenity; and a new Green Line Trolley stop within the development. To the extent practicable, the Project will incorporate architectural design (windows/glass) and landscaping that is consistent with American Bird Conservancy Bird-Friendly Design (Sheppard and Phillips 2015).

As further described below, improvements to surrounding public infrastructure and roadways would be implemented as part of the Riverwalk Project, including improvements to the Fashion Valley Road crossing of the San Diego River as a 10- to 15-year storm event crossing. Furthermore, the Project would include a habitat restoration effort on-site to create and/or enhance 25.16 acres of native habitats along the San Diego River, within and adjacent to the MHPA, and setting aside area for establishing a future wetland habitat mitigation bank.

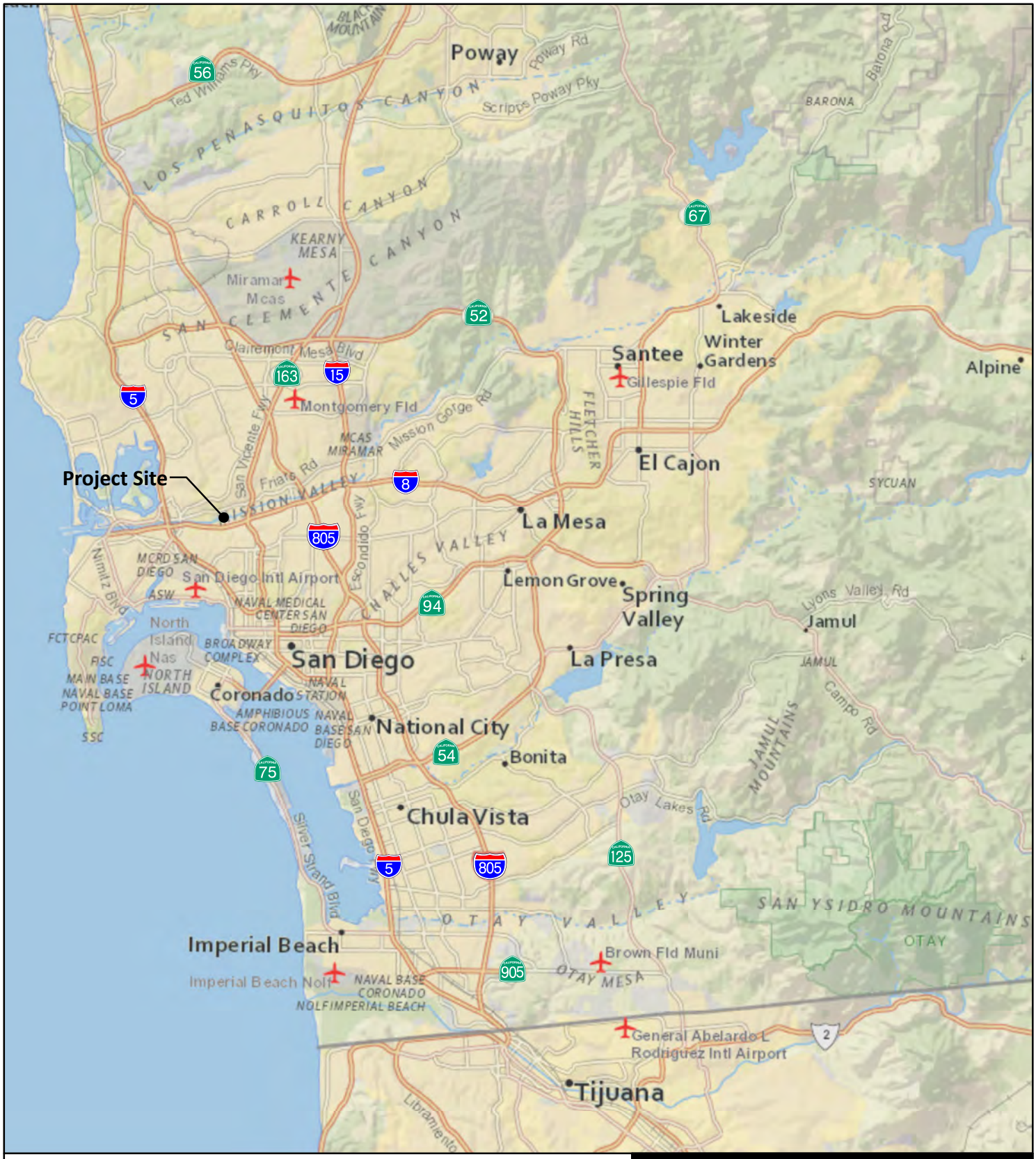
Modifications to Fashion Valley Road are proposed to improve this crossing of the San Diego River in a manner that avoids wetland impacts to the maximum extent possible (Figure 4). The existing culverts would be replaced with a Con/Span arch, leaving an earthen-bottomed channel. The spanned crossing would improve flood flows along the river. The majority of the impacts to construct the roadway improvements would be within the existing Fashion Valley Road limits. The Project will overlap the habitat restoration/enhancement area associated with the Town & Country project to the east, but outside of any designated mitigation land.

Additionally, the Project would establish Irrevocable Offers of Dedication (IODs) for two roadways identified as Roadway Connections in the Mission Valley Community Plan (adopted September 2019): future Riverwalk Street "J", which would cross the San Diego River in a north-south direction, veering towards the southwest as it crosses the San Diego River and future Riverwalk Street "U", which would travel approximately east-west along the southern Project site boundary, connecting to future Street "J" at the southwestern corner of the site.

Street "J" would be an elevated roadway crossing the river valley. Street "U" would connect with Project road segments that lead to Hotel Circle North (to the south) and Fashion Valley Road (to the east). Per the City's Planning Department, these roads are regional facilities with uncertain funding, design, and construction timing. While these improvements would not be constructed as part of the Project, the Project would grant the City IODs for the required rights-of-way to construct these roads in the future. A full impact analysis and mitigation will be provided in subsequent environmental documents as the roadway designs are refined.

The River Park portion of the Project includes passive park and active park components, neither of which is proposed within the MHPA. As currently proposed, the River Park would be a daytime use (dawn to dusk) facility. All landscaping would be with native species that are compatible and contiguous to habitats within and adjacent to wetland/riverine habitats.

The passive park component of the River Park encompasses 14.62 acres and is located closest to the MHPA and the San Diego River channel. Uses in this area would include walking/hiking trails and nature observation nodes with educational kiosks.



N
W E
S

0 2 4 Miles

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Figure 1

Regional Location

RIVERWALK PROJECT

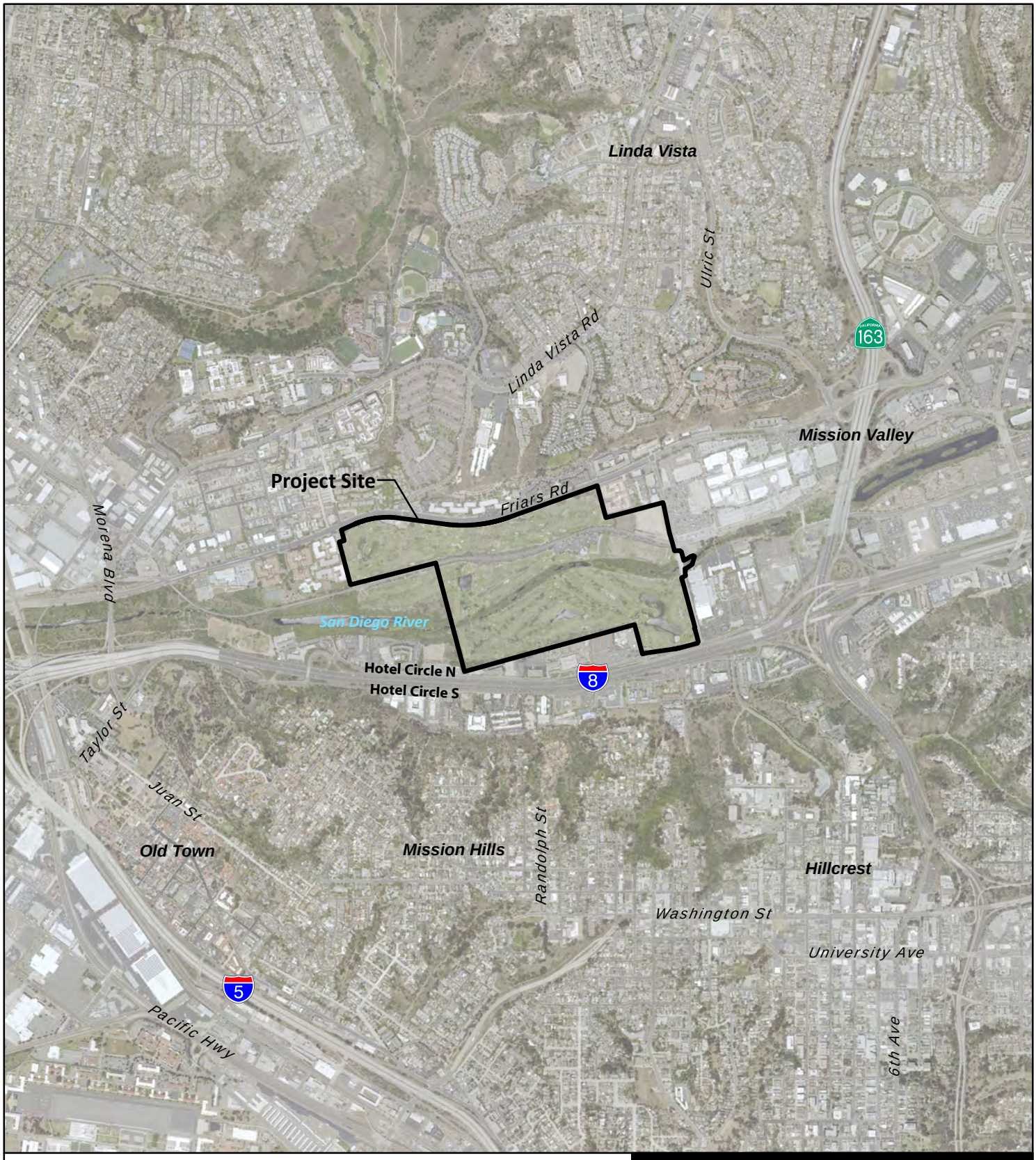

Figure 2

Project Location

RIVERWALK PROJECT

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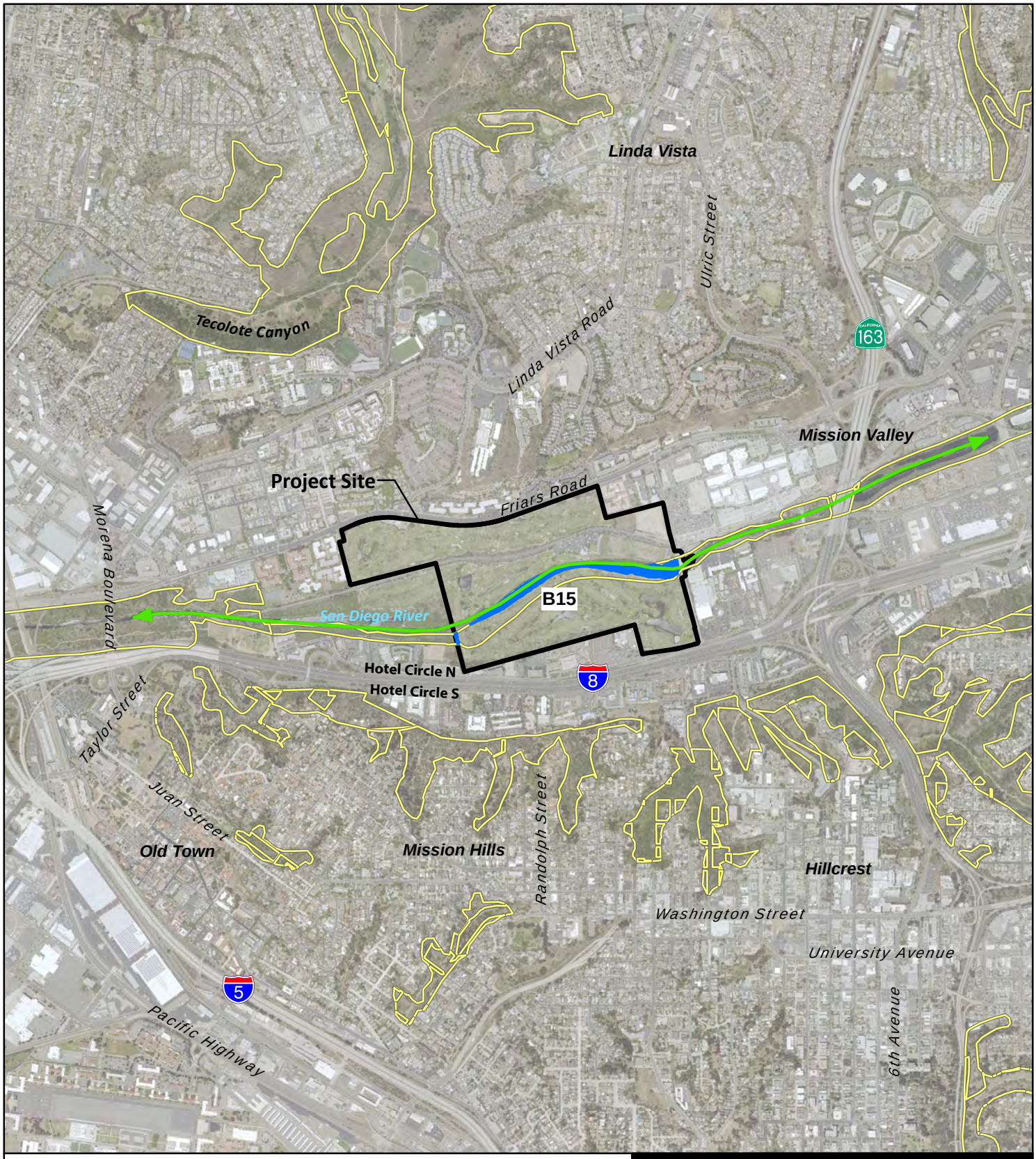

Project Site
MHPA
Regional Wildlife Corridor
MSCP B15 Area

N
W E
S

0 1,000 2,000 Feet

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Figure 3

City of San Diego MHPA and Regional Corridor

RIVERWALK PROJECT

Goshen Street
Via Las Cumbres
Friars Road
Riverwalk Drive
San Diego Trolley
Detention Basin
MTS Trolley Station
See Detail
Existing Clubhouse to Remain
River Park
Existing Outfall
Habitat Restoration Area
Detention Basin
Connect to Existing Outfall
River Park
50' No Use Buffer
Existing Bridge to Remain
Existing San Diego River Channel
Outfall
Detention Basin
Passive Park/Buffer
Connect to Existing Outfall
Street T (IOD)
Habitat Restoration Area
50' No Use Buffer
Passive Park/Buffer
River Park
Existing Bridge to Remain
Fashion Valley Road
Street U (IOD)
Hotel Circle North
8
Detail Area
0 50 100 Feet
Project Site
MHPA
San Diego River Trail
City Roadway IOD
Project Impacts
Existing Storm Drain
Proposed Storm Drain
Existing San Diego River Channel
Riverwalk Project Development
Fashion Valley Road Improvements
River Park - Active Park
River Park - Passive Park
50' No Use Buffer
Wetland Habitat Restoration
N
W E
S
0 175 350 Feet
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Figure 4

Development Plan

RIVERWALK PROJECT

The active park component of the River Park encompasses 40.19 acres and is located between 30 and 550 feet from the river channel and MHPA area. Uses within the active park may include such facilities as sports fields, picnic areas, playgrounds, fenced dog parks, water features, a ranger station, amphitheater, a recreation center, restroom facilities, parking, and walking/jogging/biking paths and trails. Final active park uses have not yet been determined; however, the more active uses, such as sports fields, would be situated further away from the river channel/MHPA area. No final active park uses are planned to be more intensive than those listed above.

The Project also includes a habitat restoration effort along the existing river channel and within the MHPA on site. The restoration is intended to create and enhance the native habitats along the San Diego River, within and adjacent to the MHPA and is consistent with Guideline B15 in the City's MSCP Subarea Plan (City 1997), which requires the restoration of native vegetation along this portion of the San Diego River Corridor as a condition of development proposals. The restoration area includes 11.54 acres of wetland habitat enhancement, 13.32 acres of creation, and 0.30 acre of restoration of habitat temporarily impacted by the Fashion Valley Road improvements. This area includes and exceeds the wetland habitat mitigation required for Project impacts to wetlands features. The surplus (acreage not needed for Project mitigation) habitat area is intended to serve as a wetland habitat mitigation bank. While the mitigation bank use is disclosed in this report, the permitting and approvals for the mitigation bank are not included as part of the current proposed Project. An additional effort will be required to obtain mitigation banking approvals.

The restoration would include the removal of invasive, non-native plant species and the planting of native seed and container stock. The golf course would be graded down to within 2-4 feet of the existing channel to support appropriate wetland species. A hydrological study for the Project (Chang Consultants 2019) was conducted and found that the majority of the on-site habitat restoration area will be inundated during at least a 2-year storm event, and virtually the entire area would be inundated during a 10-year event. This is discussed further in the Wetland Mitigation Plan and Wetland Restoration Plan prepared to guide the restoration effort (Appendices A-1 and A-2, respectively).

All of the grading within the restoration area is designed to emulate a typical active channel situation, adjacent to the existing low flow channel (San Diego River channel). The grading would achieve an elevation within 2 – 4 feet of the existing channel bottom. This grading would occur adjacent to the existing channel but would not breach the channel or encroach upon any of the existing wetland habitat. The elevations target the existing channel bottom to help ensure that there will not be a large pit that would breach ground water and create a ponded situation instead of a riverine surface flow. The grading in the adjacent buffer and River Park areas would expand upon the restoration grading and also target surface elevations that would facilitate surface flows rather than create deep ponded pits. Additionally, the uses adjacent to the existing river channel (restoration, passive park, and active park) are designed to accommodate flood flows along the San Diego River.

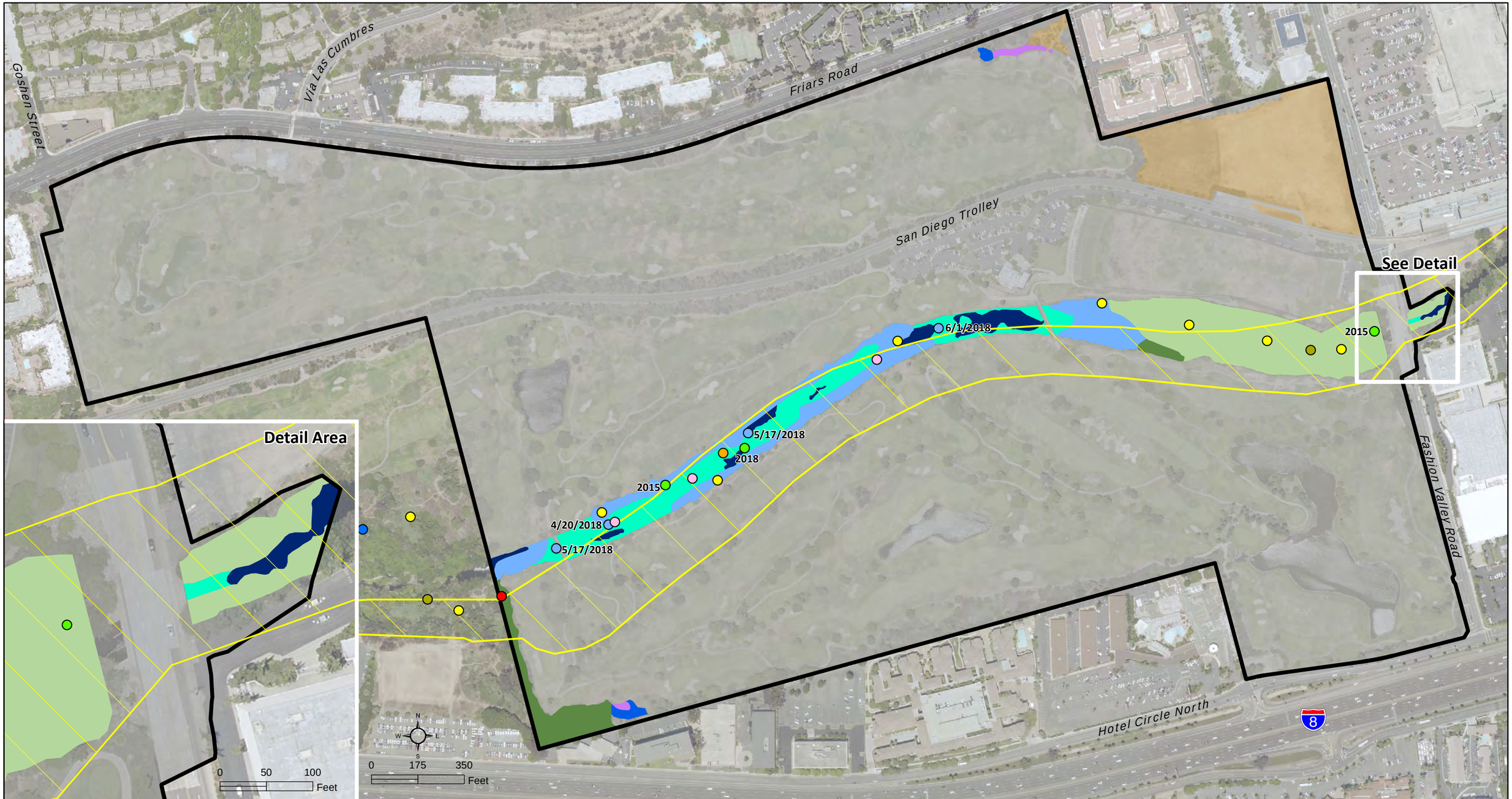
The Project would preserve and restore virtually all of the existing wetland area along the river channel (Figure 5). The exception is at the Fashion Valley Road crossing where a new spanned feature would be installed. The area adjacent to the river channel and within the MHPA also would be graded to create additional wetland habitat, thereby resulting in a net increase of wetlands on site.

Adjacent to the MHPA wetland habitat creation and preservation areas, the Project would provide a biological buffer through the establishment of a 50-foot wide no use buffer and a passive park area (Figure 4). Boulders or deterrent vegetation, as well peeler log fencing, will be installed at the edge of this no use buffer to deter public access. The no use buffer and passive park areas north and south of the river channel will be graded to provide flood capacity along the river and restored with native plant species appropriate within and adjacent to native wetland/riparian habitats. No uses will be allowed in the no use buffer (except the proposed trails attached to the two existing bridges on site), and the passive park will only allow passive uses (i.e., walking/hiking trails and nature observation nodes). This would result in an overall buffering of the MHPA, river, and wetland habitat restoration from active park uses by a minimum of 55 feet (in the southwestern and northeastern portions of the Project site) to a maximum of 590 feet (in the western portion of the Project site), with an average distance of 175 feet (Figure 6).

The combined buffer distances (no use and passive park areas) on the north side of the river channel range from 30 feet to 323 feet. The only location where the buffer is less than 50 feet is at the existing golf clubhouse, which will remain and be reused as a common Project amenity. On the south side of the river channel the buffer width ranges from 50 feet to 401 feet (Figure 6). Furthermore, there would be an average of approximately 24 feet of vertical separation between the closest wetland habitat and the existing golf clubhouse, 15 feet of vertical separation between the closest wetland habitat and the graded pads (and an average of approximately 20 feet of vertical separation between the channel bottom and the graded pad elevations), which would enhance the effectiveness of the no use and passive park buffers. Figure 7 presents three cross-section examples of the post-Project construction conditions.

Because the State Fully Protected light-footed Ridgway's rail (*Rallus obsoletus levipes*) is known to occur along the San Diego River in the MHPA on site, and California Fish and Game Code does not allow for incidental take of Fully Protected Species, the Project will implement the following measures, as applicable, to avoid direct and indirect impacts to the species.

To avoid direct impacts to the light-footed Ridgeway's rail during Project construction, removal of habitat that supports the rail will occur outside of the breeding season for this species (March 15 to September 15). If removal of habitat must occur during the breeding season, however, a qualified biologist (possessing a valid Endangered Species Act section 10(a)(1)(a) recovery permit) will conduct a pre-construction survey to determine the presence or absence of this species in the proposed area of disturbance. The pre-construction survey will be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The results of the pre-construction survey will be submitted to the City Development Services Department for review and approval prior to initiating any construction activities. If the light-footed Ridgway's rail is detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines and applicable State and Federal Law (i.e. appropriate follow up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) will be prepared and include proposed measures to be implemented to ensure that direct impacts to this species are



Study Area
MHPA

Wetland/Riparian Vegetation Communities
- Southern Cottonwood-willow Riparian Forest
- Disturbed Southern Cottonwood-willow Riparian Forest
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Open Water

Upland Vegetation Communities

Other Uplands (Tier IV)
- Disturbed Land

Land Cover
- Urban/Developed

Sensitive Species*
- Clark's marsh wren (*Cistothorus palustris clarkae*)
- Cooper's hawk (*Accipiter cooperii*)
- Double-crested cormorant (*Phalacrocorax auritus*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- Light-footed Ridgway's rail (*Rallus obsoletus levipes*)
- Osprey (*Pandion haliaetus*)
- Vaux's swift (*Chaetura vauxi*)
- Willow flycatcher (*Empidonax traillii*)
- Yellow warbler (*Setophaga petechia*)
- Yellow-breasted chat (*Icteria virens*)

* Western bluebird (*Sialia mexicana*) were observed or detected along the San Diego River on site in 2018, but their locations were not mapped.

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Figure 5

Biological Resources

RIVERWALK PROJECT

Goshen Street
Via Las Cumbres
Friars Road
Riverwalk Drive
San Diego Trolley
Fashion Valley Road
Street J (IOD)
Street U (IOD)
Hotel Circle North
8

See Detail
Detail Area

50' No Use Buffer
Passive Park/Buffer
Cross Section A
Cross Section B
Cross Section C
6/1/2018
5/17/2018
4/20/2018
2018
2015
105'
279'
76'
172'
323'
401'
427'
90'
59'
50'
262'
155'
62'
316'
401'
167'
290'
173'

0 50 100 Feet
0 175 350 Feet
N W E S

- Study Area
- Riverwalk Project Development
- Fashion Valley Road Improvements[1]
- River Park - Active Park
- River Park - Passive Park
- Project Mitigation Area – Wetland Restoration
- Future Mitigation Bank – Wetland Restoration
- 50' No Use Buffer
- City Roadway IOD
- MHPA
- Cross Section Locations

Wetland/Riparian Vegetation Communities
- Southern Cottonwood-Willow Riparian Forest
- Disturbed Southern Cottonwood-Willow Riparian Forest
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Open Water

Upland Vegetation Communities
Other Uplands (Tier IV)
- Disturbed Land

Land Cover
- Urban/Developed

Sensitive Species
- Clark's marsh wren (*Cistothorus palustris clarkae*)
- Cooper's hawk (*Accipiter cooperii*)
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- Least Bell's vireo (*Vireo bellii pusillus*)
- Light-footed Ridgway's rail (*Rallus obsoletus levipes*)
- Osprey (*Pandion haliaetus*)
- Vaux's swift (*Chaetura vauxi*)
- Western bluebird (*Sialia mexicana*)
- Willow flycatcher (*Empidonax traillii*)
- Yellow warbler (*Setophaga petechia*)
- Yellow-breasted chat (*Icteria virens*)

[1] Includes temporary impact area during construction.

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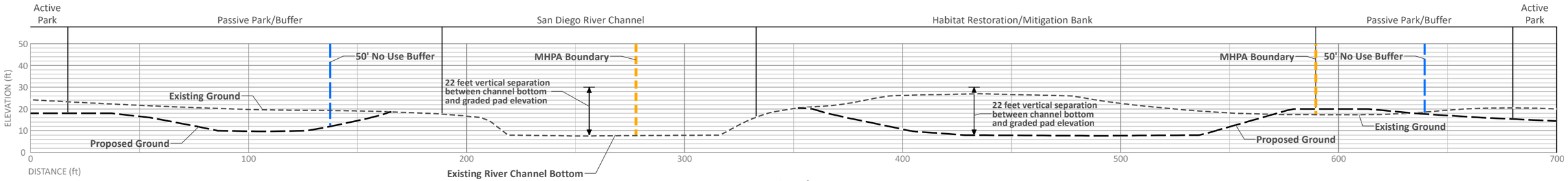
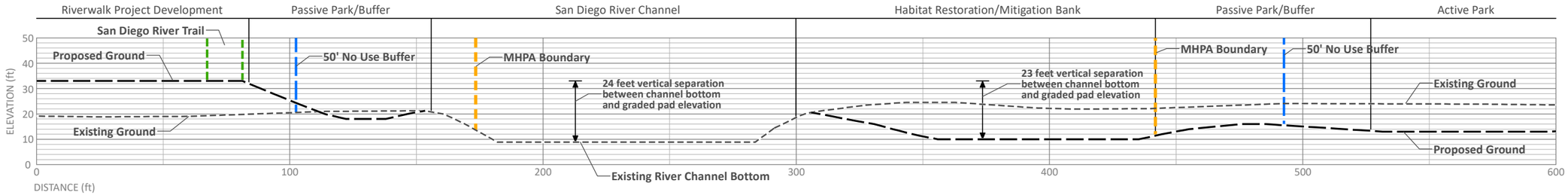
Figure 6

Biological Resources/Impacts

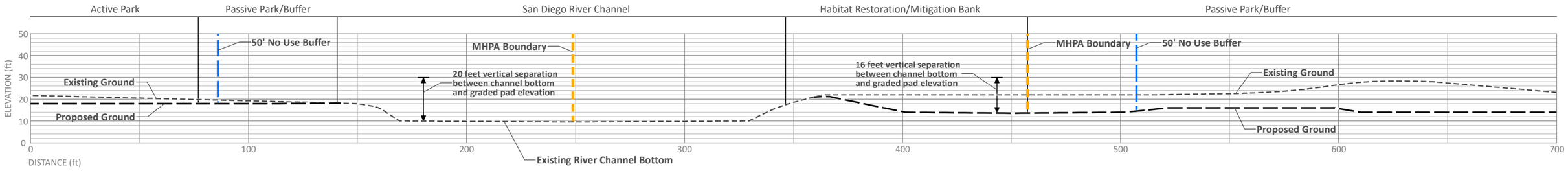
RIVERWALK PROJECT



Cross Section A



Cross Section B



Cross Section C

0 1 inch = 45 feet 45 Feet

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Figure 7

Cross Sections

RIVERWALK PROJECT

avoided. The report or mitigation plan would be submitted to the City and Wildlife Agencies for review and approval and implemented to their satisfaction.

To avoid indirect impacts to the light-footed Ridgway's rail, the MHPA Land Use Adjacency Guidelines will be conditions of Project approval. However, to specifically avoid indirect noise impacts to the light-footed Ridgway's rail, the following measures have been incorporated into the Project.

The active park facilities will be designed/located such that noise from their use will not be louder than the current (pre-Project) ambient noise levels within the current extent of the wetland/riparian habitat of the San Diego River on site.

Additionally, the following requirements regarding the light-footed Ridgway's rail will be shown on the construction plans:

> No clearing, grubbing, grading, or other construction activities will occur between March 15 and September 15 until the following requirements have been met to the satisfaction of the City manager and Wildlife Agencies (CDFW and USFWS):
>
> A. A qualified biologist (possessing a valid Endangered Species Act section 10(a)(1)(a) recovery permit) will survey those wetland areas that would be subject to construction noise levels exceeding 60 decibels dB(A) hourly average for the presence of the light-footed Ridgway's rail. Surveys for this species will be conducted pursuant to accepted protocol survey guidelines within the breeding season prior to the commencement of construction. If the light-footed Ridgway's rail is present, then the following conditions will be met:

Between March 15 and September 15, no clearing, grubbing, or grading of occupied light-footed Ridgway's rail habitat will occur. Areas restricted from such activities will be staked or fenced under the supervision of a qualified biologist; and

> I. Between March 15 and September 15, no construction activities will occur within any portion of the site where construction activities would result in noise levels exceeding the current, pre-construction ambient hourly average at the edge of occupied light-footed Ridgway's rail habitat. An analysis showing that noise generated by construction activities would not exceed the current, pre-construction ambient hourly average at the edge of occupied habitat will be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the City manager at least two weeks prior to the commencement of construction activities. Prior to the commencement of any of construction activities during the breeding season, areas restricted from such activities will be staked or fenced under the supervision of a qualified biologist; or

II. At least two weeks prior to the commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) will be implemented to ensure that noise levels resulting from construction activities will not exceed the current, pre-construction ambient hourly average at the edge of habitat occupied by the light-footed Ridgway's rail. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring* will be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed the current, pre-construction ambient hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated construction activities will cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16).

* Construction noise monitoring will continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained at no more than the current, pre-construction ambient hourly average. If not, other measures will be implemented in consultation with the qualified biologist and the City Manager, as necessary, to reduce noise levels to the current, pre-construction ambient hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

B. If the light-footed Ridgway's rail is not detected during the protocol survey, the qualified biologist will submit substantial evidence to the City manager and Wildlife Agencies which demonstrates whether or not measures such as noise walls are necessary between March 15 and September 15 as follows:

I. If this evidence indicates the potential is high for light-footed Ridgway's rail to be present based on historical records or site conditions, then condition A.III will be adhered to as specified above.

II. If this evidence concludes that no impacts to this species are anticipated, no measures will be necessary.

2.0 REGULATORY FRAMEWORK

2.1 REGULATORY ISSUES

Biological resources on the Project site are subject to regulatory administration by the federal government, State, and City, as follows.

2.1.1 Federal

Endangered Species Act

The federal Endangered Species Act (FESA) designates threatened and endangered animals and plants and provides measures for their protection and recovery. "Take" of listed animal species and of listed plant species in areas under federal jurisdiction is prohibited without obtaining a federal permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife. Activities that damage (i.e., harm) the habitat of listed wildlife species require approval from the USFWS for terrestrial species. The FESA also generally requires determination of Critical Habitat for listed species. If a project would involve a federal action potentially affecting Critical Habitat, the federal agency would be required to consult with USFWS. USFWS Critical Habitat does not occur in the survey area.

FESA Section 7 and Section 10 provide two pathways for obtaining authority to take listed species. Under Section 7 of the FESA, a federal agency that authorizes, funds, or carries out a project that "may affect" a listed species or its Critical Habitat must consult with USFWS. Under Section 10 of the FESA, private parties with no federal nexus (i.e., no federal agency will authorize, fund, or carry out the project) may obtain an Incidental Take Permit to harm listed species incidental to the lawful operation of a project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA; 16 U.S. Code Sections 703-711) includes provisions for protection of migratory birds, including the non-permitted take of migratory birds. The MBTA regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 Code of Federal Regulations Section 10.13. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others (including those that are not sensitive; see Section 5.5.3 of this biological technical report for an explanation of which species are sensitive). Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country, and is enforced in the United States by the USFWS. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). As a general/standard condition, the Project must comply with the MBTA.

Clean Water Act

Under Section 404 of the Clean Water Act, the Corps is charged with regulating the discharge of dredge and fill materials into jurisdictional Waters of the U.S. The terms "Waters of the U.S." and "jurisdictional waters" have a broad meaning that includes special aquatic sites, such as wetlands. Corps wetland boundaries are determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Corps 2008b).

Waters of the U.S., as defined by regulation and refined by case law include: (1) the territorial seas; (2) coastal and inland waters, lakes, rivers, and streams that are navigable Waters of the U.S., including their adjacent wetlands; (3) tributaries to navigable Waters of the U.S., including adjacent wetlands; and (4) interstate waters and their tributaries, including adjacent isolated wetlands and lakes, intermittent and ephemeral streams, prairie potholes, and other waters that are not a part of a tributary system to interstate waters or navigable Waters of the U.S., the degradation or destruction of which could affect interstate commerce.

Section 401 of the Clean Water Act requires that any applicant for a federal license or permit to conduct any activity that may result in a discharge to Waters of the U.S. must obtain a Water Quality Certification, or a waiver thereof, from the state in which the discharge originates. In California, the RWQCB issues Water Quality Certifications.

2.1.2 State of California

California Environmental Quality Act

Primary environmental legislation in California is found in the CEQA and its implementing guidelines (State CEQA Guidelines), requiring that projects with potential adverse effects or impacts on the environment undergo environmental review. Adverse impacts to the environment are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

California Endangered Species Act

The California Endangered Species Act (CESA) established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats. Under State law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. CESA authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the FESA and CESA, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with the CESA (Fish & Game Code Section 2080.1[a]). For State-only listed species, Section 2081 of the CESA authorizes the CDFW to issue an Incidental Take Permit for a State listed threatened or endangered species if specific criteria are met.

Native Plant Protection Act

Sections 1900 - 1913 of the California Fish and Game Code (Native Plant Protection Act) direct the CDFW to carry out the Legislature's intent to "…preserve, protect and enhance endangered or rare native plants of this state." The Native Plant Protection Act gives the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

California Fish and Game Code

California Fish and Game Code provides specific protection and listing for several types of biological resources. Section 1600 of California Fish and Game Code requires a Streambed Alteration Agreement for any activity that would alter the flow, change or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. Typical activities that require a Streambed Alteration Agreement include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required prior to any such activities, and CDFW will issue a Streambed Alteration Agreement with any necessary mitigation to ensure protection of the State's fish and wildlife resources.

Pursuant to California Fish and Game Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by California Fish and Game Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that construction activities (particularly vegetation removal or construction near nests) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS. As a general/standard condition, the Project must comply with California Fish and Game Code Sections 3503 and 3503.5.

Fully protected species are described in California Fish and Game Code Sections 3511, 4700, 5050, and 5515. These species include certain fish, amphibian and reptile, bird, and mammal species. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take of fully protected species.

Porter-Cologne Water Quality Control Act of 1970

The Porter-Cologne Water Quality Control Act of 1970 grants the State Water Resource Control Board and its regional offices power to protect water quality and is the primary vehicle for implementation of the State's responsibilities under Section 401 of the Clean Water Act. The Porter-Cologne Act grants the State Water Resource Control Board authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. Typically, the State Water Resource Control Board and RWQCB act in concert with the Corps under Section 401 of the Clean Water Act in relation to permitting fill of Waters of the U.S.

2.1.3 City of San Diego Environmentally Sensitive Lands Regulations

Mitigation requirements for sensitive biological resources follow the requirements of the City's Biology Guidelines (2018) as outlined in the City's Municipal Code Environmentally Sensitive Lands (ESL) Regulations (Chapter 14, Article 3, Division 1). Impacts to biological resources within the City's Preserve, the Multi-habitat Planning Area (MHPA), must comply with the ESL Regulations, which also serve as standards for the determination of biological impacts and mitigation under CEQA in the City. ESL include sensitive biological resources, steep hillsides, coastal beaches, sensitive coastal bluffs and 100-year floodplains (San Diego Municipal Code [SDMC] 143.0110).

The purpose of the ESL Regulations is to, "protect, preserve and, where damaged, restore the ESL of San Diego and the viability of the species supported by those lands" (SDMC 143.0101). Outside the Coastal Overlay Zone where the Project lies, impacts to wetlands should be avoided. Unavoidable impacts should be minimized to the maximum extent practicable. Whether or not an impact is unavoidable will be determined on a case-by-case basis. If impacts to wetlands cannot be avoided, a deviation from the ESL Regulations is required (see Section 7.1.6 of this biological technical report). Examples of unavoidable impacts include those necessary to allow reasonable use of a parcel entirely constrained by wetlands, roads where the only access to the developable portion of the site results in impacts to wetlands, and essential public facilities (essential roads, sewer, water lines, etc.) where no feasible alternative exists.

A wetland buffer shall be maintained around all wetlands as appropriate to protect the functions and values of the wetland. Section 320.4(b)(2) of the Corps General Regulatory Policies (33CFR 320- 330) list criteria for consideration when evaluating wetland functions and values. These include wildlife habitat (spawning, nesting, rearing, and foraging), food chain productivity, water quality, ground water recharge, and areas for the protection from storm and floodwaters.

The ESL regulations also specify development requirements inside and outside of the MHPA. Inside the MHPA, development must be located in the least sensitive portion of a given site; outside of the MHPA, development must avoid wetlands and non-MSCP Covered Species (City 2018). The ESL regulations further require that impacts to sensitive biological resources must be assessed and mitigation provided where necessary, as required by Section III of the City's biology guidelines. The MSCP and MHPA are further discussed in Section 4.0 of this biological technical report.

Biology Guidelines

The City's Biology Guidelines (2018) have been formulated by the Development Services Department to aid in the implementation and interpretation of the ESL Regulations; San Diego Land Development Code, Chapter 14, Division 1, Section 143.0101 et seq; and the Open Space Residential (OR-1-2) Zone, Chapter 13, Division 2, Section 131.0201 et seq. Section III of the Biology Guidelines (Biological Impact Analysis and Mitigation Procedures) also serves as standards for the determination of impact and mitigation under CEQA and the Coastal Act. The Biology Guidelines are the baseline biological standards for processing Neighborhood Development Permits, Site Development Permits, and Coastal Development Permits issued pursuant to ESL Regulations.

As described previously in Section 1.0 of this biological technical report, the land use changes and improvements proposed as part of the Project would require amendments to a number of plans/permits. Findings must be made to reflect the Project's potential impacts to biological resources, in particular ESL, and mitigation must be proposed before amendments can be issued. Furthermore, in accordance with ESL Regulations, permits are required for impacts to wetlands and listed species habitat. The Project would be required to obtain all applicable federal and State permits (see Section 2.0 of this biological technical report) prior to the issuance of any discretionary permit by the City. Prior to the issuance of any construction permit(s), the Project applicant must provide a copy of the permit, authorization letter, or other official mode of communication from the federal and State permitting agencies to the City.

3.0 METHODS AND SURVEY LIMITATIONS

3.1 LITERATURE REVIEW

As part of preparation for biological resources surveys conducted for the Project and for preparation of this Biological Technical Report, Alden Environmental, Inc. (Alden) reviewed the USFWS protocol presence/absence survey report for the least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*) for the Riverwalk Golf Course Project (Alden 2015) and the unfinished draft General Survey Report Biological Resources for the Riverwalk Development Planning Phase prepared by Michael Baker International, Inc. (2017). The latter report included a search of existing literature and historical databases to gather information about existing biological conditions and the reported occurrences of sensitive biological resources within approximately one mile of the site.

The literature and databases included historical and current aerial photographs; USGS topographic maps; U.S. Department of Agriculture (USDA) Natural Resources Conservation Service soil survey maps; and online resources that provide data for the region. The online resources include the California Natural Diversity Database (CNDDB), USFWS critical habitat database, and California Native Plant Society (CNPS) database of rare and endangered plants. SanGIS and San Diego Natural History Museum data were also evaluated to better understand the biological conditions within and adjacent to the site. Data retrieved from those searches have been included herein.

3.2 BIOLOGICAL SURVEYS

In addition to a literature review, a series of field surveys were conducted on the Project site as follows. These surveys included vegetation mapping and a jurisdictional delineation in 2014 and surveys for the least Bell's vireo and southwestern willow flycatcher in 2015 and 2018 by Alden. The vegetation mapping on site was updated by Busby Biological Services in 2017 (the updated mapping is used in this biological technical report), and Alden used that mapping to update the jurisdictional delineation. Additionally, sensitive plant surveys were conducted in spring of 2018 (Table 1). The survey methods are described following Table 1.

Table 1 SURVEY INFORMATION				
Survey Date	**Survey Type**	**Personnel**	**Start/Stop Time**	**Weather Conditions Start/Stop Sky Cover, Temperature, Wind**
2014	Vegetation mapping and jurisdictional delineation	Alden	NA	NA
5/1/15	Least Bell's Vireo #1	Brian Lohstroh[1]	0620/1100	15%, 59°F, wind 0-1 mph/ 30%, 72°F, wind 0-3 mph
5/11/15	Least Bell's Vireo #2		0600/1030	100% 61°F, wind 0-1 mph/ 80%, 66°F, wind 4-8 mph
5/22/15	Least Bell's Vireo #3; Southwestern Willow Flycatcher #1		0615/1000	70% 59°F, wind 0-5 mph/ 50%, 68°F, wind 2-7 mph
6/2/15	Least Bell's Vireo #4; Southwestern Willow Flycatcher #2		0600/0945	100%, 63°F, wind 0-1 mph/ 40%, 73°F, wind 0-1 mph
6/13/15	Least Bell's Vireo #5 Southwestern Willow Flycatcher #3		0550/0950	100%, 66°F, wind 0-1 mph/ 10%, 71°F, wind 2-6 mph
6/25/15	Least Bell's Vireo #6; Southwestern Willow Flycatcher #4		0600/0945	15%, 59°F, wind 0-1 mph/ 30%, 72°F, wind 0-3 mph
7/6/15	Least Bell's Vireo #7; Southwestern Willow Flycatcher #5		0600/0945	100%, 66°F, wind 0-2 mph/ 100%, 68°F, wind 0-2 mph
7/17/15	Least Bell's Vireo #8	Brian Lohstroh[1]	0620/0945	100%, 68°F, wind 0-2 mph/ 0%, 73°F, wind 0-2 mph
August 2017	Update 2014 vegetation mapping	Busby Biological Services	NA	NA
4/10/18	Least Bell's Vireo #1	Brian Lohstroh[1]	0615/1045	10%, 55°F, wind 0-1 mph/ 5%, 74°F, wind 0-5 mph
4/10/18	Sensitive Plant Species Survey		NA	NA
4/20/18	Least Bell's Vireo #2		0630/1100	0%, 53°F, wind 0-2 mph/ 0%, 64°F, wind 2-6 mph
5/4/18	Least Bell's Vireo #3		0600/1045	0%, 54°F, wind 0-1 mph/ 0%, 70°F, wind 3-5 mph
5/17/18	Southwestern Willow Flycatcher #1		0600/1000	30%, 59°F, wind 0-1 mph/ 70%, 67°F, wind 3-7 mph
5/17/18	Least Bell's Vireo #4		1000/1100	70%, 67°F, wind 3-7 mph/ 30%, 72°F, wind 3-7 mph
5/17/18	Sensitive Plant Species Survey		NA	NA
6/1/18	Southwestern Willow Flycatcher #2		0545/1000	0%, 62°F, wind 0-1 mph/ 0%, 70°F, wind 2-5 mph
6/1/18	Least Bell's Vireo #5		1000/1100	0%, 70°F, wind 2-5 mph/ 0%, 71°F, wind 3-7 mph
6/11/18	Southwestern Willow Flycatcher #3		0620/1000	100%, 63°F, wind 0-1 mph/ 10%, 69°F, wind 0-3 mph

Table 1 (cont.) **SURVEY INFORMATION**				
Survey Date	**Survey Type**	**Personnel**	**Start/Stop Time**	**Weather Conditions Start/Stop Sky Cover, Temperature, Wind**
6/11/18	Least Bell's Vireo #6	Brian Lohstroh[1]	1000/1100	10%, 69°F, wind 0-3 mph/ 0%, 72°F, wind 2-5 mph
6/25/18	Southwestern Willow Flycatcher #4		0630/0900	100%, 64°F, wind 0-1 mph/ 50%, 66°F, wind 0-2 mph
6/25/18	Least Bell's Vireo #7		0900/1100	50%, 66°F, wind 0-2 mph/ 0%, 72°F, wind 2-5 mph
7/9/18	Southwestern Willow Flycatcher #5		0600/0930	100%, 73°F, wind 0-1 mph/ 100%, 76°F, wind 0-5 mph
7/9/18	Least Bell's Vireo #8		0930/1100	100%, 76°F, wind 0-5 mph/ 100%, 76°F, wind 0-3 mph

[1] USFWS Permit TE-063608

3.2.1 Vegetation Mapping

Biologists conducted the vegetation mapping on foot and with the use of a golf cart to increase survey efficiency. Biologists mapped the vegetation communities and land cover types by hand onto aerial imagery (one inch represents 200 feet scale) and noted dominant plant species within each community. Digital photographs of representative areas on site were taken during the survey.

The hand-drawn vegetation community and land cover type boundaries were provided to a Geographic Information System (GIS) analyst and were digitized using GIS software. Vegetation community classifications follow Holland (1986) as modified by Oberbauer et al. (2008). In this report, 'disturbed habitat' as defined by Oberbauer et al. (2008) is classified as "disturbed land" for consistency with the City's Biology Guidelines (City 2018).

All plant and animal species observed directly and/or detected indirectly through sign (e.g., scat, tracks, burrows, and vocalizations) were recorded in field notes.

3.2.2 Jurisdictional Delineation

Alden conducted a jurisdictional delineation on the Project site in 2014 and used the updated vegetation mapping from 2017 to refine the delineation results, which are presented in this biological technical report. The specific methods used to conduct the jurisdictional delineation are described below.

Wetland Waters of the U.S.

Wetland Waters of the U.S., regulated by the U.S. Army Corps of Engineers (Corps), were delineated using the three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within the *Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps 2008).

To be considered a wetland, an area must exhibit at least minimal characteristics within these three parameters. Where wetlands are suspect (i.e., primarily areas where wetland vegetation is evident and evidence of current or past hydrology exists), soil samples are examined by excavating soil pits. When conditions are consistent, and wetlands are determined present, areas with similar vegetation and hydrological consistency are extrapolated, and are often tied to topographic conditions. Where there are changes in vegetation and/or hydrology, additional soil pits are examined to identify the boundaries between wetland and upland.

Non-wetland Waters of the U.S.

In the absence of wetlands, the limits of Corps and RWQCB jurisdiction in non-tidal waters typically extend to the Ordinary High Water Mark (OHWM; Corps 2008b). An OHWM can be determined by, but not limited to, the observation of benches, breaks in bank slope, particle size distribution, sediment deposits, drift, litter, and/or changes in plant communities. Non-wetland Waters of the U.S. may, for example, be comprised of ephemeral and intermittent streams that may or may not be vegetated.

Waters of the State

CDFW jurisdictional Waters of the State boundaries were determined based on the presence of riparian vegetation or regular surface flow. Streambeds within CDFW jurisdiction were delineated based on the definition of a streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation." CDFW jurisdictional limits for streambeds were determined by the top of the bank. Vegetated CDFW habitats were mapped at the limits of the riparian vegetation canopy.

Aquatic/hydrological features lacking a nexus to (i.e., isolated from) adjacent or downstream waters are potentially considered Waters of the State under the jurisdiction of the CDFW. Currently, for this region (San Diego), RWQCB jurisdiction coincides with Corps jurisdiction by defining an OHWM and utilizing the three-parameter approach for wetland Waters of the U.S.

CDFW jurisdiction applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State. CDFW regulatory authority extends to include riparian habitat (including adjacent wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils or saturated soil conditions. Generally, CDFW jurisdiction is mapped to the top of the active bank of the stream or to the outer drip line of the associated riparian vegetation, whichever is greater.

City Wetlands

City Wetlands, specifically, are defined by the City Municipal Code (Chapter 11, Article 3, Division 1) as areas that are characterized by any of the following summarized conditions.

1. All areas persistently or periodically containing naturally occurring wetland vegetation communities;

2. Areas that have hydric soils or wetland hydrology and lack naturally occurring wetland vegetation communities; and/or

3. Areas lacking wetland vegetation communities, hydric soils, and wetland hydrology due to non-permitted filling of previously existing wetlands.

3.2.3 Sensitive Plant and Wildlife Surveys

Sensitive species are those that are given special consideration or protection by federal, State, or local agencies. More detailed definitions for sensitive species are provided in Section 5.5.2 and Section 5.5.3 of this biological technical report.

Plant Species

Sensitive plant species surveys were conducted on April 10 and May 17, 2018 (Table 1) during a time period when most annual species would be blooming. The Project site was surveyed on foot and with binoculars to search for sensitive plant species with potential to occur (based on, for example, habitat types and nearby historical records) that were identified during the Literature Review (see Section 3.1).

Least Bell's Vireo and Southwestern Willow Flycatcher

The surveys for these two species in 2015 (Table 1) were conducted in accordance with the current Least Bell's Vireo Survey Guidelines (Guidelines; USFWS 2001) and the current Southwestern Willow Flycatcher Survey Protocol (Protocol; Sogge, et al. 2010).

In 2018, the surveys for the least Bell's vireo and southwestern willow flycatcher were conducted per the Guidelines and Protocol, sequentially (with the flycatcher survey conducted first and the vireo survey conducted afterward) according to the 2016 guidance for combining these surveys suggested by the USFWS (Table 1; Appendix B).

The Guidelines require eight surveys, ten days apart between April 10 and July 31. The Protocol includes performing five surveys spread across three specific survey periods. The Protocol requires conducting one survey between May 15 and May 31, two surveys between June 1 and June 24, and two surveys between June 25 and July 17. Each survey covered suitable habitat primarily associated with the San Diego River.

Avian species were identified aurally or with the aid of 8x42 power binoculars. Recorded southwestern willow flycatcher vocalizations were broadcast only to initially attempt to elicit a response for any present southwestern willow flycatcher. Sensitive avian species observed or detected were recorded with a GPS device accurate to within 10 meters.

Each survey covered the potentially suitable riparian habitat on site for the species along the San Diego River and in the southwest corner of the Project site. The surveys were conducted by walking through the riparian habitat while watching and listening for wildlife and observing any sign of species presence. Binoculars were used to assist in the detection and identification of wildlife. The size of the site and the extent of potentially suitable habitat were such that all of the habitat could be surveyed in its entirety during each of the site visits.

3.2.4 Survey Limitations

The sensitive species surveys conducted followed prescribed guidelines/protocols and occurred during the appropriate times of year. For sensitive species not observed or detected (due, for example, to lack of night-time surveys for nocturnal species), this report also addresses the impacts to those sensitive species that have moderate or high potential to occur and includes mitigation should those species be determined to be present.

3.2.5 Nomenclature

Nomenclature used in this report is from the following sources: City Biology Guidelines (City 2018) and the City's MSCP Subarea Plan (City 1997a); Holland (1986); Oberbauer et al. (2008); Hickman, ed. (1993); CNPS (2017); Crother (2008); American Ornithological Society (2017); Jones, et al. (1992); and CDFW (2017).

4.0 REGIONAL CONTEXT

4.1 MULTIPLE SPECIES CONSERVATION PROGRAM (MSCP) SUBAREA PLAN

The City, USFWS, CDFW, and other local jurisdictions joined together in the late 1990s to develop the MSCP, a comprehensive program to preserve a network of habitat and open space in the region and ensure the viability of (generally) upland habitat and species, while still permitting some level of continued development. The City's MSCP Subarea Plan (1997a, b) was prepared pursuant to the outline developed by USFWS and CDFW to meet the requirements of the State Natural Communities Conservation Planning (NCCP) Act of 1992. Adopted by the City in March 1997, the City's Subarea Plan forms the basis for the MSCP Implementing Agreement, which is the contract between the City, USFWS, and CDFW (City 1997a). The Implementing Agreement ensures implementation of the City's Subarea Plan and thereby allows the City to issue "take" permits under the federal and State Endangered Species acts to address impacts at the local level. Under the federal Endangered Species Act, an Incidental Take Permit is required when non-federal activities would result in "take" of a threatened or endangered species. A Habitat Conservation Plan, such as the City's Subarea Plan, must accompany an application for a federal Incidental Take Permit. In July 1997, the USFWS, CDFW, and City entered into the 50-year MSCP Implementing Agreement, wherein the City received its federal Endangered Species Act Section 10(a) Incidental Take Permit (City 1997a).

Pursuant to its MSCP permit issued under Section 10(a), the City has incidental "take" authority over 85 rare, threatened, and endangered species including regionally sensitive species that it aims to conserve (i.e., "MSCP Covered Species"). However, the City will, to the maximum extent practicable, minimize and mitigate the impacts of take. "MSCP Covered" refers to species that are covered by the City's federal Incidental Take Permit and considered to be adequately protected within the City's Preserve, the MHPA.

Special conditions apply to Covered Species that would be potentially impacted including designing a project to avoid impacts to Covered Species in the MHPA where feasible. Projects must incorporate measures (i.e., Area Specific Management Directives) for the protection of Covered Species as identified in Appendix A of the City's Subarea Plan. Under the City's Section 10 (a) permit, special restrictions apply to wetland species. Incidental take authorizations for projects that affect Corps jurisdictional waters shall be authorized through future Endangered Species Act Section 7 consultations between the Service and the Corps pursuant to section 404 of the Clear Water Act.

In addition to identifying preserve areas within the City (and guiding implementation of the MSCP within its corporate boundaries), the City's Subarea Plan also provides guidance on a regional approach to the conservation of natural communities throughout the City. Additional discussion of the MHPA as it relates to the Project is provided in Section 4.1.1 of this biological technical report.

4.1.1 Multi-Habitat Planning Area

The MHPA was developed by the City in cooperation with the USFWS, CDFW, property owners, developers, and environmental groups using the Preserve Design Criteria contained in the MSCP Plan, and the City Council-adopted criteria for the creation of the MHPA. MHPA lands are large blocks of native habitat that have the ability to support a diversity of plant and animal life and, therefore, have been included within the City's Subarea Plan for conservation. The MHPA also delineates core biological resource areas and corridors targeted for conservation as these lands have been determined to provide the necessary habitat quality, quantity, and connectivity to sustain the unique biodiversity of the San Diego region. While MHPA lands are considered by the City to be a sensitive biological resource and intended to be mostly void of development activities, development is allowed in the MHPA subject to the requirements of the MSCP Plan. The Project will utilize and maintain existing bridges in the MHPA and will create MSCP-compliant trails on site to direct public access for passive recreation purposes. Per the Subarea Plan, passive recreation is compatible with the biological objectives of the MSCP and is, therefore, allowed in the MHPA.

According to the City's MSCP Subarea Plan, the Project site is an urban habitat area that includes the San Diego River in the MHPA. The Subarea Plan lists MHPA Guidelines for the San Diego River that are required to be implemented for take authorization of Covered Species. Guideline B15 is required to be met by the Project and states:

> *Native vegetation shall be restored as a condition of future development proposals along this portion of the San Diego River Corridor.*

4.1.2 Land Use Adjacency Guidelines

Development adjacent to the MHPA must ensure that indirect impacts into the MHPA are minimized. Section 1.4.3 of the City's Subarea Plan outlines the requirements to address indirect effects related to drainage and toxics, lighting, noise, public access, invasive plant species, brush management, and grading/land development. The Project site includes areas within and adjacent to the MHPA; therefore, conformance with the adjacency guidelines would be required.

5.0 SURVEY RESULTS

5.1 PHYSICAL CHARACTERISTICS

The Project site is dominated by the relatively flat topography of the golf course, with a slightly undulating landscape associated with the fairways, greens, and other associated golf course land uses. In addition, the site supports other urban land uses including the trolley line, golf course clubhouse, and associated parking lot. The San Diego River passes through the site and is its only natural feature.

The site is located within the San Diego River Watershed; approximately half of the site is within the FEMA 100-year Flood Hazard Zone. Elevations on site range from approximately 40 feet above mean sea level (amsl) at the northeast portion of the site adjacent to Friars Road to approximately 20 feet amsl at the central portion of the site along the San Diego River. Soils on site consist (in approximately descending order of area) of Tujunga Sand (zero to five percent slopes), Riverwash, Heurhuero-Urban Land Complex (two to nine percent slopes), Grangeville Fine Sandy Loam (zero to two percent slopes), Quarries, Olivenhain-Urban Land Complex (two to nine percent slopes), Reiff Fine Sandy Loam (five to nine percent slopes), and Heurhuero-Urban Land Complex (nine to 30 percent slopes; Bowman 1973).

The Project site is situated in a highly urbanized portion of Mission Valley and is surrounded almost completely by a network of roads and highways, residential and commercial development, and other built environments.

5.2 VEGETATION COMMUNITIES AND LAND COVER TYPES

A total of nine vegetation communities/land cover types were mapped on site (Figure 5). The acreages of these communities are provided in Table 2 along with the upland habitat tiers, as defined by the City's Biology Guidelines (2018). Wetland/riparian communities are not assigned a tier.

Upland vegetation communities are divided into five tiers of sensitivity (the first includes the most sensitive, the fifth the least sensitive) based on rarity and ecological importance (City 2018). Tier I includes rare uplands. Tier II includes uncommon uplands. Tiers IIIA and IIIB include common uplands. Tier IV includes other uplands.

Table 2 VEGETATION COMMUNITES AND LAND COVER TYPES ON SITE			
Vegetation Community/Land Cover Type		**Tier**	**Acreage**
Wetland/ Riparian[1]	Southern cottonwood-willow riparian forest	NA	4.45
	Disturbed southern cottonwood-willow riparian forest	NA	1.37
	Southern willow scrub	NA	3.37
	Disturbed southern willow scrub[2]	NA	0.17
	Coastal and valley freshwater marsh	NA	3.08
	Emergent wetland[2]	NA	0.14
	Open water	NA	0.89
		Subtotal	**13.47**
Other Uplands	Disturbed Land	IV	6.95
Land Cover	Urban/Developed	NA	174.62
		Subtotal	**181.57**
		TOTAL	**195.04**

[1]Wetland/riparian acreages rounded to the nearest 0.01.
[2]Includes vegetation in Drainage A established within man made (constructed) and maintained stormwater drainage feature.

5.2.1 Wetland/Riparian Vegetation Communities

Southern Cottonwood-willow Riparian Forest (including disturbed)

Southern cottonwood-willow riparian forest is a tall, predominantly deciduous, riparian forest that typically has an open canopy dominated by Fremont's cottonwood *(Populus fremontii),* black cottonwood *(P. trichocarpa),* various willow species *(Salix* spp.), and a dense understory dominated by scrubby willows and other shrubs. This vegetation community is found at low elevations along rivers and streams where the water table is high and/or where there is year-round water flow (Holland 1986, Oberbauer et al. 2008).

Southern cottonwood-willow riparian forest occurs along the San Diego River in the eastern and western portions of the Project site. On site, the southern cottonwood-willow riparian forest canopy is dominated by California sycamore (*Platanus racemosa*), western cottonwood (*Populus fremontii* ssp. *fremontii*), narrow-leaf willow (*Salix exigua* var. *exigua*), black willow (*Salix gooddingii*), red willow *(S. laevigata*), and arroyo willow *(S. lasiolepis*). The understory is composed of a mix of native and non-native species, including curly dock (*Rumex crispus*), western ragweed (*Ambrosia psilostachya*), cocklebur, and California bulrush (*Schoenoplectus americanus*).

Disturbed southern cottonwood-willow riparian forest is similar to southern cottonwood-willow riparian forest as described above; however, it has been physically disturbed by previous human activity so that it still functions as southern cottonwood-willow riparian forest but normally does not provide as high habitat value as the undisturbed southern cottonwood-willow riparian forest.

On site, disturbed southern cottonwood-willow riparian forest supports a few cottonwoods and willows; however, it is dominated by Canary Island date palm, Mexican fan palm, Brazilian pepper tree (*Schinus terebinthifolius*), white alder (*Alnus rhombifolia*) with an understory that is dominated by poison hemlock (*Conium maculatum*), annual saltmarsh aster (*Symphyotrichum subulatum*), cocklebur, spear oracle (*Atriplex patula*), castor bean, California wild rose (*Rosa californica*), Himalayan blackberry (*Rubus armeniacus*), and wild grape (*Vitis girdiana*).

Southern Willow Scrub (including disturbed)

Southern willow scrub is a dense, broad-leaved, riparian scrub community that typically grows on loose, sandy, or fine gravelly alluvium deposited near stream channels during floods. The canopy of this vegetation community is usually dominated by several willow species with scattered, emergent cottonwood and western sycamore. Most southern willow scrub stands are too dense to allow much understory to develop (Holland 1986, Oberbauer 2008).

Southern willow scrub occurs along much of the San Diego River on site. The southern willow scrub is dominated by narrow-leaf willow, black willow, red willow, arroyo willow, mule fat (*Baccharis salicifolia* ssp. *salicifolia*), and California bulrush.

Disturbed southern willow scrub occurs in a man-made drainage that carries urban runoff in the northeastern portion of the site. The habitat is considered disturbed because it is dominated by non-native plant species (i.e., Brazilian pepper tree and acacia) along with native arroyo willow. Furthermore, it is considered to have low habitat value because it is surrounded by golf course and is of very limited extent.

Disturbed southern willow scrub also occurs in the southwestern portion of the site where it has been previously disturbed by human activity potentially due to adjacent golf course activities. While dominated by native plant species, non-native species are also present.

Coastal and Valley Freshwater Marsh

Coastal and valley freshwater marsh is dominated by perennial, emergent monocots measuring about five to eight feet in height and often forming a closed canopy. This vegetation community occurs in wetlands that are permanently flooded by standing fresh water (Holland 1986, Oberbauer et al. 2008).

Coastal and valley freshwater marsh occurs along much of the San Diego River on site. Coastal and valley freshwater marsh on site is dominated by alkali bulrush (*Bolboschoenus maritimus*), California bulrush, six-petal water primrose (*Ludwigia hexapetala*), herb of grace (*Bacopa monnieri*), narrow-leaf cattail (*Typha domingensis*), and broad-leaf cattail (*T. latifolia*).

Emergent Wetland

Emergent wetlands are typically persistent freshwater or alkali wetlands that are dominated by low growing, perennial species such sedges (*Carex* spp., *Eleocharis* spp.), rushes (*Juncus* spp.), docks and sorrels (*Rumex* spp.), breadfruit bur reed (*Sparganium eurycarpum*), and many other species. This vegetation community is typically found in channels, seeps and springs, floodplains, margins of lakes and rivers, and various basins such as pools and ponds. In San Diego, emergent wetlands often occur in previously disturbed areas where this wetland community is emerging but has not yet established much species diversity; however, this vegetation community also occurs in undisturbed areas as well (Oberbauer et al. 2008).

On site, emergent wetland is dominated by alkali bulrush, celery (*Apium graveolens*), tall flatsedge (*Cyperus eragrostis*), fragrant flatsedge (*C. odoratus*), needle spike rush (*Eleocharis acicularis*), slender willow herb (*Epilobium ciliatum*), knotgrass (*Paspalum distichum*), and curly dock.

Emergent wetland occurs in a man-made drainage surrounded by golf course in the northeastern portion of the site. It is of limited extent and is isolated from the San Diego River.

Emergent wetland also occurs in the southwestern portion of the site, where it is adjacent to wetland/riparian habitat connected to the San Diego River.

Open Water

Open water includes reservoirs, lakes, ponds, and relatively large sloughs, channels, and rivers or streambeds that contain water throughout the year (Oberbauer et al. 2008). Open water occurs in scattered patches along the San Diego River.

5.2.2 Other Uplands

Disturbed Land

Disturbed land includes areas that retain a soil substrate but have been physically disturbed by previous human activity. These areas are no longer recognizable as a native or naturalized vegetation association. Vegetation, if present, is typically composed of predominately non-native species introduced and established through human action. These areas are not typically artificially irrigated but receive water from precipitation and runoff (Oberbauer et al. 2008).

Disturbed land primarily occurs in the northeastern portion of the Project site, including a large vacant lot but also occurs in several other scattered locations along the San Diego River. On site, this other upland is dominated by non-native species that tend to colonize disturbed land such as fennel (*Foeniculum vulgare*), crown daisy *(Glebionis coronaria*), bristly ox-tongue (*Helminthotheca echioides*), cocklebur (*Xanthium strumarium*), black mustard (*Brassica nigra*), Russian thistle (*Sa/sola tragus*), castor bean (*Ricinus communis*), and tree tobacco (*Nicotiana glauca*).

5.2.3 Land Cover

Urban/Developed

Urban/developed areas have been constructed upon or are otherwise physically altered to the extent that no naturally occurring, native vegetation is supported. These areas contain permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that typically require irrigation (Oberbauer et al. 2008).

Urban/developed areas occupy the majority of the Project site and include the golf course greens, existing clubhouse and parking lot, as well as along the trolley line. On site, urban/developed land also includes associated landscaping that supports oleander (*Nerium oleander*), Mexican fan palm, acacia, eucalyptus, and other various ornamental trees and shrubs. Golf course ponds are also developed features on site because they are man-made, concrete-lined, artificial features constructed as water hazards for the golf course.

5.3 PLANT SPECIES OBSERVED

A total of 101 plant species have been observed on site. Of these, 44 species (44 percent) are considered native, and 57 species (56 percent) are considered non-native and/or naturalized. Some of these species were mentioned earlier in the vegetation community/land cover type descriptions provided in Section 5.2 of this biological technical report. A list of plant species observed is included as Appendix C.

5.4 ANIMAL SPECIES OBSERVED OR DETECTED

A total of 103 animal species have been observed or detected on site (or off site to the west). Animal species observed or detected include five butterflies, two fish, one amphibian, two reptiles, 93 birds, and two mammals. Eleven of these species are considered sensitive; see Section 5.5.3 of this biological technical report. A list of animal species observed or detected on site is included as Appendix D.

5.5 SENSITIVE BIOLOGICAL RESOURCES

According to City Municipal Code (Chapter 11, Article 3, Division 1) and the City's Biology Guidelines (City 2018), sensitive biological resources refers to upland and/or wetland areas that meet any one of the following criteria:

(a) Lands that have been included in the City's MSCP Preserve (i.e., the MHPA);

(b) Wetlands;

(c) Lands outside the MHPA that contain Tier I, Tier II, Tier IIIA, or Tier IIIB habitats;

(d) Lands supporting species or subspecies listed as rare, endangered, or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the federal Endangered Species Act, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(e) Lands containing habitats with MSCP Narrow Endemic species as listed in the Biology Guidelines (City 2018); or

(f) Lands containing habitats of MSCP Covered Species as listed in the Biology Guidelines (City 2018).

5.5.1 Sensitive Vegetation Communities

Additionally, sensitive vegetation communities are those considered rare within the region or sensitive by CDFW (Holland 1986) and/or the City. These communities, in any form (e.g., disturbed), are considered sensitive because they have been historically depleted, are naturally uncommon, or support sensitive species. The Project site supports seven sensitive vegetation communities: southern cottonwood-willow riparian forest (including disturbed), southern willow scrub (including disturbed), coastal and valley freshwater marsh, emergent wetland, and open water.

5.5.2 Sensitive Plant Species

Sensitive plant species are those that are considered federal, State, or CNPS rare, threatened, or endangered; MSCP Covered Species; or MSCP Narrow Endemic species (Appendix E). More specifically, if a species is designated with any of the following statuses (a-c below), it is considered sensitive per City Municipal Code (Chapter 11, Article 3, Division 1):

(a) A species or subspecies is listed as rare, endangered, or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the FESA, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(b) A species is a Narrow Endemic as listed in the Biology Guidelines in the Land Development Manual (City 2018); and/or

(c) A species is a Covered Species as listed in the Biology Guidelines in the Land Development Manual (City 2018).

A species may also be considered sensitive if it is included in the CNPS Inventory of Rare and Endangered Plants (CNPS 2017). California Rare Plant Rank 1 includes plants that are rare, threatened or endangered in California. California Rare Plant Rank 2 includes plants that are rare, threatened or endangered in California but more common elsewhere. California Rare Plant Rank 3 includes plants that are eligible for State listing as rare, threatened or endangered. California Rare Plant Rank 4 plants are locally significant but few, if any, are eligible for State listing.

Sensitive plant status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range is geographically rare. A species may be more or less abundant but occur only in very specific habitats. Lastly, a species may be widespread but exists in small populations.

No sensitive plant species have been observed on site. Sensitive plant species that may have potential to occur on site (based on, for example, habitat types and nearby historical records) are listed in Appendix F.

Appendix F also lists the potential for all MSCP Narrow Endemic species to occur on site. Narrow Endemic species are a subset of MSCP Covered Species. The City specifies additional conservation measures to ensure impacts to Narrow Endemic species are avoided.

5.5.3 Sensitive Animal Species

Sensitive animal species are those that are considered federal or State threatened or endangered; MSCP Covered Species; or MSCP Narrow Endemic species (Appendix E). More specifically, if a species is designated with any of the following statuses (a-c below), it is considered sensitive per City Municipal Code (Chapter 11, Article 3, Division 1):

(a) A species or subspecies is listed as endangered or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the FESA, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(b) A species is a Narrow Endemic as listed in the Biology Guidelines in the Land Development Manual (City 2018); and/or

(c) A species is a Covered Species as listed in the Biology Guidelines in the Land Development Manual (City 2018).

A species may also be considered sensitive if it is included on the CDFW's Special Animals List (CDFW 2017) as a State Species of Special Concern, State Watch List species, State Fully Protected species, or federal Bird of Conservation Concern (Appendix E).

Generally, the principal reason an individual taxon (species or subspecies) is considered sensitive is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss.

Sensitive animal species that may have potential to occur on site (based on, for example, habitats present) are listed in Appendix F. Eleven sensitive animal species were found on site (Figure 5) or off site to the west as described below.

Cooper's hawk (*Accipiter cooperii*)

Sensitivity: State Watch List; MSCP Covered Species (Appendix E).

Distribution: Throughout the continental U.S. (excluding Alaska) and parts of both Montana and the Dakotas. Winters south to Mexico and Honduras.

Habitat(s): In San Diego County, tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas such as scrubland or fields.

Presence on site: Cooper's hawk was observed on site in 2018 in disturbed southern cottonwood-willow riparian forest.

Vaux's swift (*Chaetura vauxi*)

Sensitivity: State Species of Special Concern (Appendix E).

Distribution: Breeds in northwestern U.S./southwestern Canada, is present in southern Mexico and Central America year-round, and is present (non-breeding) in extreme northern South America. Migrates along the western U.S and Mexico.

Habitat(s): Nests in coniferous or mixed forest. Forages in forest openings, especially above streams.

Presence on site: Observed off site to the west during the 2018 least Bell's vireo and southwestern willow flycatcher survey.

Clark's marsh wren (*Cistothorus palustris clarkae*)

Sensitivity: State Species of Special Concern (Appendix E).

Distribution: Narrowly restricted to coastal southern California (Unitt 2004).

Habitat(s): Freshwater and brackish marshes.

Presence on site: Detected in three locations in coastal and valley freshwater marsh along the San Diego River in the central portion of the site in 2018.

Willow flycatcher (*Empidonax traillii*)

Sensitivity: Federal Bird of Conservation Concern; State Endangered. The southwestern subspecies (*E. t. extimus*) is Federal Endangered, State Endangered, and an MSCP Covered Species (Appendix E).

Distribution: Three subspecies of willow flycatcher occur in California; only the southwestern subspecies breeds in southern California. The other two subspecies migrate through southern California to breeding grounds in central and northern California. Southwestern willow flycatchers breed from the Santa Margarita River to the South Fork Kern River and at upper San Luis Rey River in California and in Arizona and southwestern Colorado. The largest remaining population in California is on the South Fork Kern River, Kern County. Historically, southwestern willow flycatchers were also observed along the Mojave River, San Bernardino County, and at Santa Barbara, Santa Barbara County (Craig and Williams 1998).

Habitat(s): Willow flycatcher breeding habitat in California is typically moist meadows with perennial streams; lowland riparian woodlands dominated by willows, primarily in tree form; and cottonwoods; or smaller spring-fed or boggy areas with willow or alders (*Alnus* spp.; Craig and Williams 1998). The southwestern subspecies is a riparian obligate species restricted to dense stream-side vegetation composed of dense mixtures of native broadleaf trees and shrubs often interspersed with small openings, open water, or shorter vegetation, creating a mosaic that is not uniformly dense (Craig and Williams 1998).

Presence on site: One way to determine if flycatchers detected are migrants, which may or may not be the southwestern subspecies of the willow flycatcher (i.e., *E. t. extimus*; which is Federal and State endangered), is to determine if they are still present during the "non-migrant" period, which is typically from approximately June 15 to July 20 (Unitt, 1987 *in* Sogge et al.

2010). A willow flycatcher found during this period is likely a breeding bird (i.e., the southwestern willow flycatcher).

Two willow flycatchers were detected during the first (of five) site visits of the southwestern willow flycatcher survey on May 22, 2015 along the San Diego River on site. These birds were not relocated during the second site visit on June 2, 2015. One willow flycatcher was detected during the third site visit on June 13, 2015 in the same location as one of the individuals detected on May 22. It was determined that all of these individuals were migrants based on the lack of willow flycatcher detection after the third site visit (the fourth and fifth site visits were made on June 25 and July 6, 2015). During the 2018 protocol survey for the southwestern willow flycatcher, one willow flycatcher was detected by its call along the San Diego River in the central portion of the site on May 17. Due to the sound of its call (that of a northwestern willow flycatcher subspecies) and the fact that it was only detected once, it was determined to be a migrant willow flycatcher. The southwestern subspecies of willow flycatcher was, therefore, not detected on site.

Yellow-breasted chat (*Icteria virens*)

Sensitivity: State Species of Special Concern (Appendix E).

Distribution: North America and Central America in winter.

Habitat(s): Dense riparian habitats.

Presence on site: The yellow-breasted chat was observed on site during the 2015 least Bell's vireo and southwestern willow flycatcher survey and was again detected in southern cottonwood-willow riparian forest on site during this survey in 2018.

Osprey (*Pandion haliaetus*)

Sensitivity: State Watch List (Appendix E).

Distribution: General worldwide distribution in temperate and tropical regions.

Habitat(s): Rivers, bays, lakes, or seacoasts.

Presence on site: Observed over open water in the San Diego River off site to the west during the 2018 least Bell's vireo and southwestern willow flycatcher survey.

Double-crested cormorant (*Phalacrocorax auritus*)

Sensitivity: State Watch List (Appendix E).

Distribution: Across North America.

Habitat(s): Fresh and salt water habitats.

Presence on site: The double-crested cormorant was observed on site during the 2015 least Bell's vireo and southwestern willow flycatcher survey and was observed again in coastal and valley freshwater marsh along the San Diego River on site during this survey in 2018.

Light-footed Ridgway's rail (*Rallus obsoletus levipes*)

Sensitivity: Federal Endangered; State Endangered, State Fully Protected; MSCP Covered (Appendix E).

Distribution: From Santa Barbara County, California to the extreme north of the Mexican coast of the Pacific Ocean.

Habitat(s): According to the USFWS (2009 and references therein):

> The light-footed clapper [Ridgway's] rail uses coastal salt marshes, lagoons, and their maritime environs (Zembal 1994, pp. 1-2). Nesting habitat includes tall, dense cordgrass (*Spartina foliosa*) and occasionally in pickleweed (*Salicornia virginica*) in the low littoral zone, wrack deposits in the low marsh zone, and hummocks of high marsh within the low marsh zone (Massey et al. 1984, p. 78). At Mugu Lagoon nesting occurs in stands of (*Juncus acutus* spp. *leopoldii*) (Zembal et al. 2007, p. 5). Fringing areas of high marsh serve as refugia during high tides (Zembal et al. 1989, p. 42). Although used infrequently, this habitat may be extremely important for reducing mortality during high tides. Although less common, light-footed clapper [Ridgway's] rails have also been observed to reside and nest in freshwater marshes (Thelander and Crabtree 1994, p. 161). Activities of the light-footed clapper [Ridgway's] rail are tide-dependent (Zembal et al. 1989, pp. 39-42). They require shallow water and mudflats for foraging, with adjacent higher vegetation for cover during high water (Zeiner et al. 1990, p. 174). They forage in all parts of the salt marsh, concentrating their efforts in the lower marsh when the tide is out, and moving into the higher marsh as the tide advances.

Presence on site: Observed in four locations along the San Diego River on site in coastal and valley freshwater marsh/open water during the 2018 least Bell's vireo and southwestern willow flycatcher survey.

Yellow warbler (*Setophaga petechia*)

Sensitivity: Federal Bird of Conservation Concern; State Species of Special Concern (Appendix E).

Distribution: Observed throughout California during the breeding season with rare sightings in winter.

Habitat(s): Riparian woodland, Mojave riparian forest, mule fat scrub, and southern willow scrub.

Presence on site: Detected along the San Diego River in 2017. It was also observed on site during the 2015 and 2018 least Bell's vireo and southwestern willow flycatcher surveys.

Western bluebird (*Sialia mexicana*)

Sensitivity: MSCP Covered (Appendix E).

Distribution: Southwestern North America.

Habitat(s): Open woodlands, parks, farm lands, orchards.

Presence on site: Observed on site during the 2018 least Bell's vireo and southwestern willow flycatcher survey.

Least Bell's vireo (*Vireo bellii pusillus*)

Sensitivity: Federal Endangered; State Endangered; MSCP Covered Species (Appendix E).

Distribution: Observed throughout coastal southern California in the breeding season, south of Santa Barbara, but in smaller numbers in foothills and mountains.

Habitat(s): Mature riparian woodland, Mojave riparian forest, mule fat scrub, and southern willow scrub.

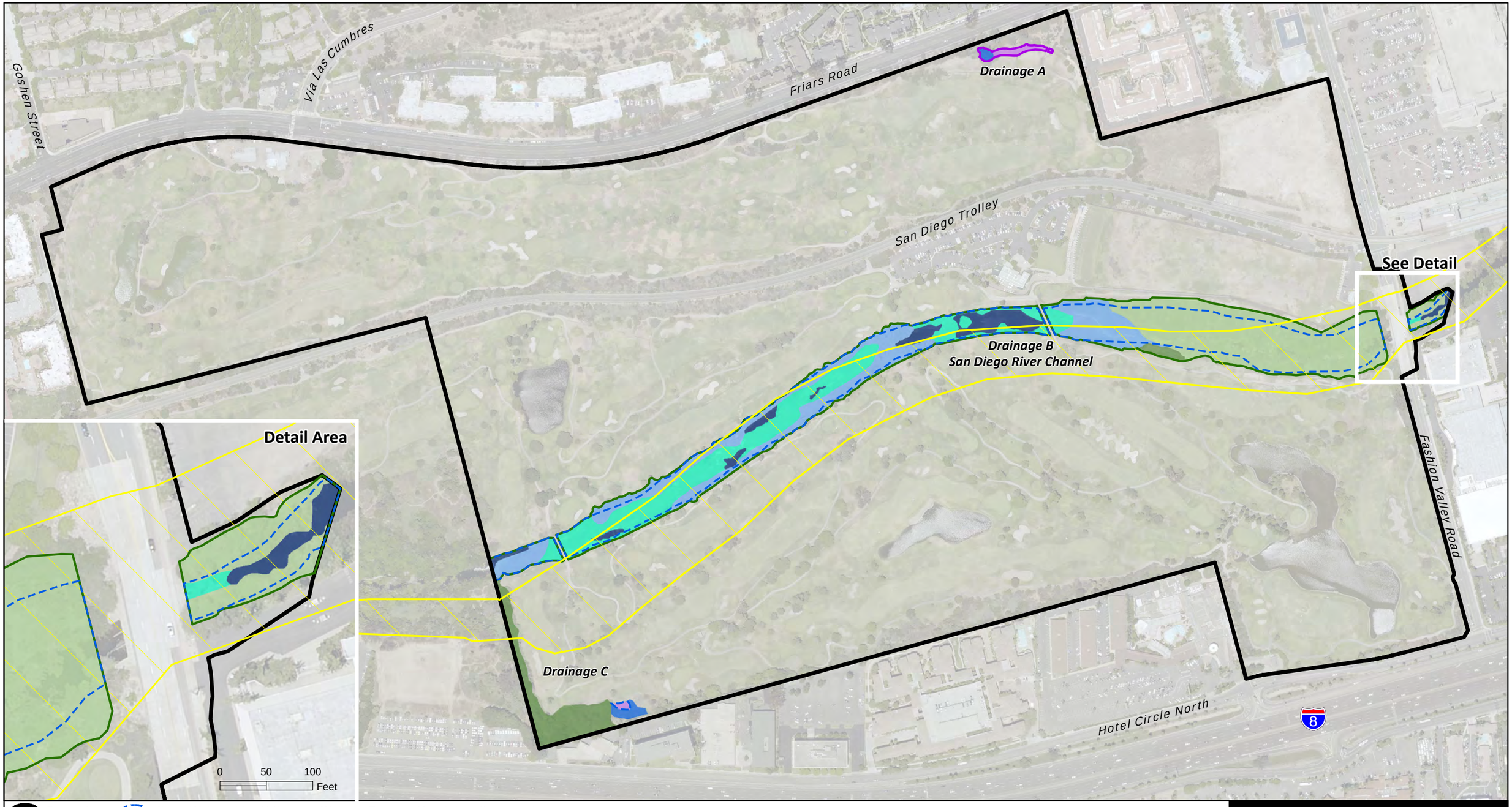
Presence on site: In 2015, the least Bell's vireo was detected more than 350 feet west of the site along the San Diego River during the first five (of eight) site visits of the least Bell's vireo survey that year. The individual was not detected during the last three site visits on June 25, July 6, and July 17, 2015. In 2018, a solitary least Bell's vireo was detected in the same off-site area on July 9. Since it was only detected on that date and was tracked moving upstream, it was determined to be a transient male.

5.5.4 Jurisdictional Waters and Wetlands

Waters of the U.S., under the jurisdiction of the Corps, and Waters of the State, under the jurisdiction of the CDFW, encompass wetlands but also may include ephemeral and intermittent streams that may or may not be vegetated. Generally, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Wetlands vary widely because of regional and local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors (Environmental Protection Agency 2013). Waters of the U.S., Waters of the State, and City Wetlands are sensitive and are regulated by the Corps, CDFW, and City. See Section 2.1 of this biological technical report for more detail.

Waters of the U.S.

Approximately 10.06 acres along the San Diego River and two of its tributaries on the Project site and in the Fashion Valley Road improvements area meet the three Corps wetland criteria (see Section 2.1.1 of this biological technical report; Figure 8 and Table 3). No non-wetland Waters of the U.S. exist on the Project site.



Project Site
MHPA

Corps Waters of the U.S.
CDFW/RWQCB/City Wetland
RWQCB Wetland

Wetland/Riparian Vegetation Communities
Southern Cottonwood-Willow Riparian Forest
Disturbed Southern Cottonwood-Willow Riparian Forest
Southern Willow Scrub
Disturbed Southern Willow Scrub
Coastal and Valley Freshwater Marsh
Emergent Wetland
Open Water

N W E S
0 175 350 Feet

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Figure 8

Jurisdictional Areas

RIVERWALK PROJECT

Table 3 JURISDICTIONAL FEATURES ON SITE[1,2]			
Feature	**Wetland Waters of the U.S.**	**Wetland Waters of the State[3]**	**City Wetlands**
Drainage A[4]			
Emergent wetland[4]	0.00	0.00	n/a
Disturbed southern willow scrub[4]	0.00	0.00	n/a
Drainage B – San Diego River			
Coastal and valley freshwater marsh	2.97	3.10	3.10
Southern willow scrub	2.73	3.40	3.40
Southern cottonwood-willow riparian forest	3.38	4.68	4.68
Disturbed southern cottonwood-willow riparian forest	0.00	0.13	0.13
Open water	0.95	0.95	0.95
Drainage C			
Emergent wetland	0.03	0.03	0.03
Disturbed southern cottonwood-willow riparian forest	0.00	1.21	1.21
Disturbed southern willow scrub	0.00	0.12	0.12
TOTAL	**10.06**	**13.62**	**13.62**

[1]Includes Fashion Valley Road improvement area, shown in acres
[2]There are no non-wetland Waters of the U.S. or State on site
[3]CDFW jurisdictional features
[4]Vegetation in Drainage A established within man made (constructed) and maintained stormwater drainage feature

Waters of the State

California Fish and Game Code (see Section 2.1.2 of this biological technical report) provides specific protection for Waters of the State when an activity would alter the flow or change or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake as such an activity may substantially adversely affect fish and wildlife resources conserved, protected, and managed by CDFW. Waters of the State are based on the presence of riparian vegetation or regular surface flow, and for streambeds, having at least periodic or intermittent flow through a bed or channel with banks.

Wetland Waters of the State on site and in the Fashion Valley Road improvements area total approximately 13.62 acres and occur along the San Diego River and one of its tributaries Figure 8 and Table 3). There are no non-wetland Waters of the State.

City Wetlands

As described in Section 2.1.3 of this biological technical report, City Wetlands are characterized as:

1. All areas persistently or periodically containing naturally occurring wetland vegetation communities;

2. Areas that have hydric soils or wetland hydrology and lack naturally occurring wetland vegetation communities; and/or

3. Areas lacking wetland vegetation communities, hydric soils, and wetland hydrology due to non-permitted filling of previously existing wetlands.

Based on these characterizations, City Wetlands on site and in the Fashion Valley Road improvements area include approximately 13.62 acres in Drainages B (San Diego River) and C (Figure 8 and Table 3). A review of historical aerial photographs of the site from 1953 through 1996 (Appendix G) show that historically, there was no drainage feature at the location of Drainage A. That is, Drainage A is a man-made feature in an area that was historically upland. The wetland vegetation that is present is not, therefore, naturally occurring. Furthermore, because the channel is man-made in an upland, there is no wetland hydrology present. Lastly, Drainage A is not present due to filling of previously existing wetland. Therefore, Drainage A is not City Wetland, and it is not the intent of the City to regulate artificially created wetlands in historic non-wetland areas unless they have been delineated as wetlands by the Corps and/or CDFW (City 2018). At this time, State and federal permits have not been obtained; therefore, vegetation associated with Drainage A has been presented hereafter as "emergent wetland" and "disturbed southern willow scrub" with footnotes as necessary to distinguish these man-made wetlands from naturally-occurring wetlands associated with Drainages B and C.

Wetland Buffer Analysis

City Biology guidelines require that, "A wetland buffer shall be maintained around all wetlands as appropriate to protect the functions and values of the wetland. Section 320.4(b)(2) of the U.S. Army Corps of Engineers General Regulatory Policies list criteria for consideration when evaluating wetlands functions and values. Those criteria are addressed further below.

Presently on site, there is no wetland buffer between the San Diego River and the golf course and its greens, cart paths, driving range, maintenance facilities, landscaping, and other active use features (Figures 2 and 5). These uses directly abut the river.

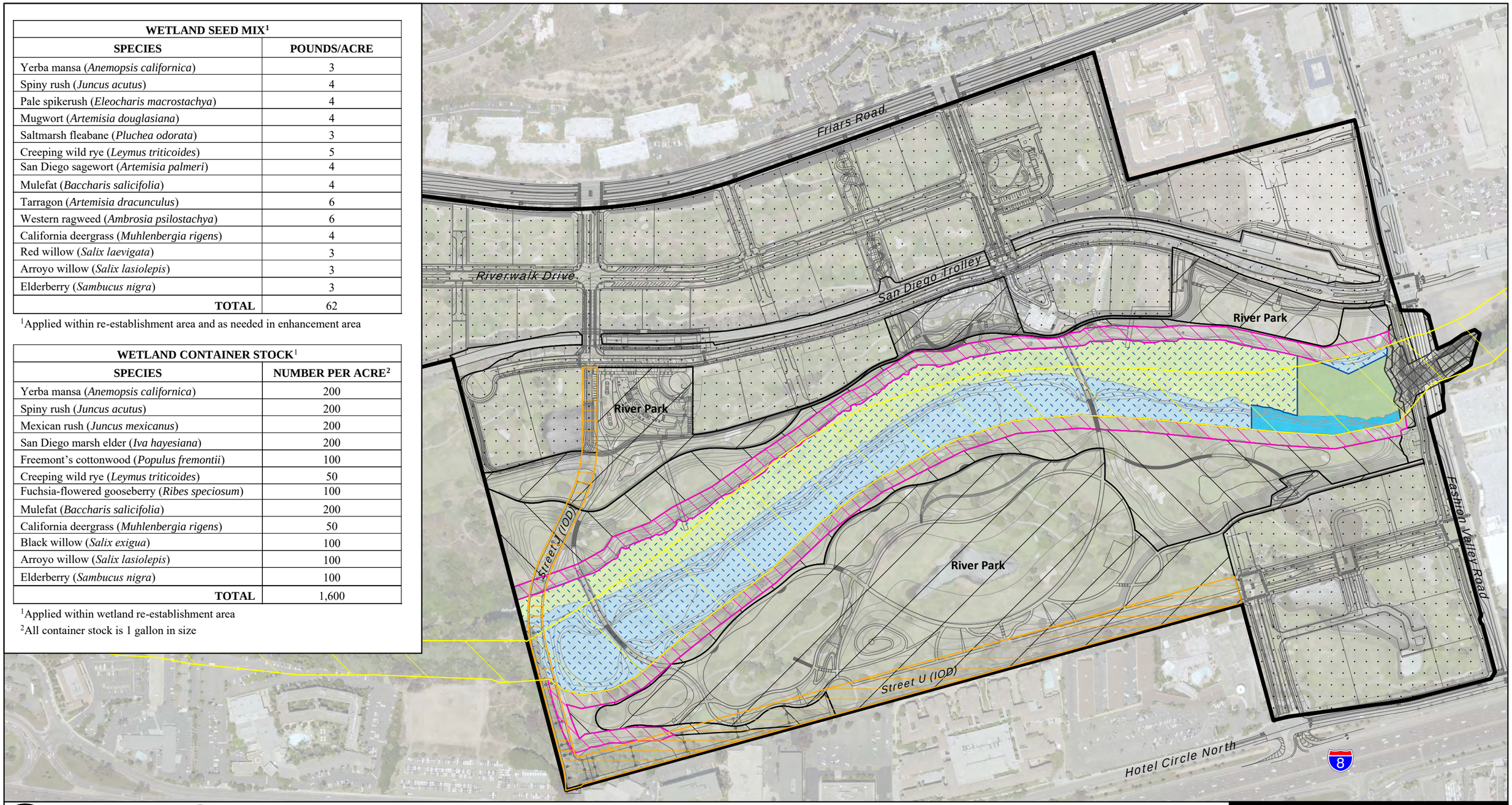
> Wetlands considered to perform functions important to the public interest based on Corps General Regulatory Policies include:
>
> *(i) Wetlands which serve significant natural biological functions, including food chain production, general habitat and nesting, spawning, rearing and resting sites for aquatic or land species*
>
> The wetlands to be established during the restoration (Figure 9) will include a mosaic of site-appropriate wetland/riparian habitats through the installation of a broad species mix (see Appendices A-1 and A-2 for the Mitigation and Restoration plans, respectively). The habitats to become

WETLAND SEED MIX[1]	
SPECIES	**POUNDS/ACRE**
Yerba mansa (*Anemopsis californica*)	3
Spiny rush (*Juncus acutus*)	4
Pale spikerush (*Eleocharis macrostachya*)	4
Mugwort (*Artemisia douglasiana*)	4
Saltmarsh fleabane (*Pluchea odorata*)	3
Creeping wild rye (*Leymus triticoides*)	5
San Diego sagewort (*Artemisia palmeri*)	4
Mulefat (*Baccharis salicifolia*)	4
Tarragon (*Artemisia dracunculus*)	6
Western ragweed (*Ambrosia psilostachya*)	6
California deergrass (*Muhlenbergia rigens*)	4
Red willow (*Salix laevigata*)	3
Arroyo willow (*Salix lasiolepis*)	3
Elderberry (*Sambucus nigra*)	3
TOTAL	62

[1]Applied within re-establishment area and as needed in enhancement area

WETLAND CONTAINER STOCK[1]	
SPECIES	**NUMBER PER ACRE[2]**
Yerba mansa (*Anemopsis californica*)	200
Spiny rush (*Juncus acutus*)	200
Mexican rush (*Juncus mexicanus*)	200
San Diego marsh elder (*Iva hayesiana*)	200
Freemont's cottonwood (*Populus fremontii*)	100
Creeping wild rye (*Leymus triticoides*)	50
Fuchsia-flowered gooseberry (*Ribes speciosum*)	100
Mulefat (*Baccharis salicifolia*)	200
California deergrass (*Muhlenbergia rigens*)	50
Black willow (*Salix exigua*)	100
Arroyo willow (*Salix lasiolepis*)	100
Elderberry (*Sambucus nigra*)	100
TOTAL	1,600

[1]Applied within wetland re-establishment area
[2]All container stock is 1 gallon in size



- Riverwalk Project Limits
- MHPA
- City Roadway IOD
- Riverwalk Project Development
- Fashion Valley Road Improvements[1]
- River Park - Active Park
- River Park - Passive Park
- 50' No Use Buffer
- Future Mitigation Bank – Wetland Restoration

Riverwalk Project Wetland Mitigation[2]
- Wetland Habitat Enhancement
- Wetland Habitat Creation

Other Restoration Areas[3]
- Existing San Diego River Channel Habitat Enhancement
- Wetland Habitat Creation

[1] Includes temporary impact area during construction. Temporary impacts (0.30 ac) associated with the Fashion Valley Road improvements will be restored to native wetland habitat.
[2] Includes anticipated agency mitigation in addition to City required mitigation acreage.
[3] Includes restoration in compliance with the MSCP B15 condition to be incorporated into the proposed future mitigation bank.

N W E S
0 175 350 Feet

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Figure 9

Habitat Restoration Area

RIVERWALK PROJECT

established have the potential to support the light-footed Ridgway's rail already found on site in freshwater marsh/open water habitat, least Bell's vireo (observed off site in riparian habitat to the west), and southwestern willow flycatcher (moderate potential to occur on site). The wetland/riparian habitat establishment would also provide additional habitat for other sensitive species already present along the river on site such as, but not limited to, Clark's marsh wren and yellow-breasted chat.

The park grading followed by the planting of natives is expected to result in the establishment of additional wildlife habitat, including marsh habitat to serve purification functions, and the planting of native species in the buffers will establish more wetland habitat on site.

The site currently supports 3.08 acres of freshwater marsh and 0.89 acre of open water habitats. The project will establish (i.e., create) 13.32 acres of wetland habitat on site adjacent to the existing river channel that experiences steady water flows. This amounts to a greater than fourfold increase in the amount of riparian habitat that will occur on site. Therefore, habitat for the rail (and other species) could increase in area as a result of the Project.

Furthermore, the Project proposes to enhance existing wetland habitat on site by removing weeds, trash, cement, and other materials that have been dumped within and adjacent to the river, thereby improving habitat quality for the rail (and other species). Finally, the existing and increased habitat area will be buffered from adjacent development.

The river corridor currently supports sensitive avian species despite there being no buffer between the river and golf course. Therefore, increasing the habitat and establishment of the 50-foot no use buffer along with the passive park planted with native species, as well as the vertical separation, would adequately protect these species against potentially detrimental edge effects and protect the natural biological functions of the wetlands on site post project.

(ii) Wetlands set aside for study of the aquatic environment or as sanctuaries or refuges

The existing and proposed wetlands associated with the San Diego River are located almost entirely within boundaries of the MHPA, which can be considered a sanctuary and refuge for biological resources. The project provides the 50-foot no use buffer around the southern boundary of the MHPA, and the northern boundary of the MHPA is bordered by the San Diego River channel and the 50-foot no use buffer or just the 50-foot no use buffer. With the exceptions of the two existing bridges to remain, the MHPA, 50-foot no use buffer, and the proposed and existing wetlands would remain undeveloped.

(iii) Wetlands the destruction or alteration of which would affect detrimentally natural drainage characteristics, sedimentation patterns, salinity distribution, flushing characteristics, current patterns, or other environmental characteristics

The Project establishes a 50-foot no use buffer around existing and proposed wetlands along the San Diego River to prevent their destruction or alteration. With the exception of the existing pedestrian bridges, the wetland buffer and the wetlands it surrounds would remain undeveloped to ensure existing wetland characteristics (e.g., drainage and sedimentation patterns) within the site are not altered.

The Project includes a wetland habitat mitigation/restoration effort along the existing river channel and within the MHPA on site. This effort is intended to increase and enhance the native habitats along the San Diego River, within and adjacent to the MHPA. The restoration would include the removal of invasive, non-native plant species and the planting of native seed and container stock. This is discussed further in Section 1.2.1 and in the Wetland Mitigation Plan (Appendix A-1) and Wetland Restoration Plan (Appendix A-2).

Restoration of wetland habitats on site will improve existing wetland characteristics by replacing non-native plant species with native species. Non- native plant species typically have few natural predators or other ecological controls on their population sizes and can aggressively out-compete native species for space, light, and other resources. High rates of non-native recruitment and propagation can quickly convert a native system to a condition that is inadequate to sustain both common and special-status plant and animal species. Removal of non-native species through habitat enhancement will thereby improve the condition of the wetland communities.

(iv) Wetlands which are significant in shielding other areas from wave action, erosion, or storm damage. Such wetlands are often associated with barrier beaches, islands, reefs and bars

The existing and proposed wetlands do not provide shielding from wave action or erosive waves that do not occur on site. Therefore, this criterion is not applicable to the wetlands on site.

(v) Wetlands which serve as valuable storage areas for storm and flood waters

Through Project implementation, the expansion of wetlands on site would increase the potential for storage of storm and flood waters on site. The 50-foot no use buffer and grading and planting of natives as part of the River Park would also increase storm and flood water storage function.

(vi) Wetlands which are ground water discharge areas that maintain minimum baseflows important to aquatic resources and those which are prime natural recharge area

Through Project implementation, the expansion of wetlands on site would increase the potential for groundwater recharge function. The 50-foot no use buffer and grading and planting of natives as part of the River Park would also increase groundwater recharge function.

(vii) Wetlands which serve significant water purification functions

Through implementation of the Project, purification functions would be increased through expansion of the wetland areas. The wetland buffer will also provide filtration and purification functions for the wetlands they protect.

(viii) Wetlands which are unique in nature or scarce in quantity to the region or local area

Existing and proposed wetlands associated with the San Diego River to the south provide a valuable corridor of undeveloped land through a heavily urbanized area. With the exception of the existing pedestrian bridges, the proposed wetland buffer and the wetlands it surrounds would remain undeveloped, thereby ensuring no net loss of wetland habitat.

Based on the criteria listed in Section 320.4(b)(2), the buffers (50-foot no use and passive park) that are included as part of the Project design are expected to retain the functions and values of wetlands on the site.

5.5.5 Wildlife Corridors and Nursery Sites

Wildlife corridors are essential to maintain healthy and genetically diverse plant and animal species populations. Wildlife corridors maintain connectivity between formerly contiguous wildlands allowing: 1) wide-ranging animals to travel, migrate, and meet mates; 2) an avenue along which plants can propagate; 3) for genetic interchange; 4) population movement; and 5) recolonization of habitats where other populations have been extirpated (Beier and Loe 1992).

Wildlife corridors can be classified as either regional corridors or local corridors. Regional corridors are defined as those linking two or more large areas of natural open space, and local corridors are defined as those allowing resident animals to access critical resources (e.g., food, cover, water) in a smaller area that might otherwise be isolated (e.g., by urban development).

As stated previously, the MHPA delineates core biological resource areas and corridors targeted for conservation as these lands have been determined to provide the necessary habitat quality, quantity, and connectivity to sustain the unique biodiversity of the San Diego region. The central portion of the Project site contains the MHPA along the San Diego River (Figures 3 and 5). The San Diego River provides for local and regional movement of wildlife, but movement for some species is likely impeded or limited by adjacent urbanization and uses such as Fashion Valley Road that crosses the river at grade, as well as development that constricts the width of the river on site.

Currently, movement to/from the site on the eastern boundary is constrained by off-site, adjacent development north and south of the San Diego River channel that is built close to the channel's edge. This is a pinch point through which wildlife must pass to move up or downstream. Within the site, animals are relatively free to move through the existing river channel, although it is narrow, incised, and supports water. Adjacent to the channel on the existing golf course, animal movement is less constrained, although more or less limited to nighttime movement as the golf course is actively used during the day. The existing MTS trolley line, fences, and golf course development (buildings and parking lots) north of the channel limit wildlife movement through the northern portion of the site.

The Project would sustain wildlife use through the site by maintaining and expanding the wetland habitat area along the existing channel. Additionally, the establishment of a 50-foot no use buffer to the wetland habitats would facilitate use of the channel by wildlife, particularly at night when the passive and active components of the park would be closed. The use of native species along the river channel and within the passive and active parks also would provide more cover for animals than is presently provided by the golf course.

While at Fashion Valley Road, the spanned crossing feature would provide for a soft-bottomed area beneath the roadway that would be larger than the existing culverts and thus more conducive to wildlife movement.

Given the above, the Project would result in a net improvement to wildlife movement through the expansion of native wetland habitats, provision of buffers, native landscaping in the park areas, and the spanned feature at Fashion Valley Road.

Additionally, wildlife nursery sites are specific sites for reproduction and include, for example, bat nursery colonies. Three species of bat were determined to have low potential to occur on site (Appendix F), so no bat nursery colonies are expected to occur there.

6.0 MSCP CONSISTENCY ANALYSIS

6.1 LAND USE ADJACENCY GUIDELINES

According to the City's Subarea Plan, land uses planned or existing adjacent to the MHPA include single and multiple family residential, active recreation, commercial, industrial, agricultural, landfills, and extractive uses, and the land uses adjacent to the MHPA will be managed to ensure minimal impacts to the MHPA.

The Project's park land will be developed under the San Diego River Park Master Plan adjacent to the MHPA. The passive park component of the River Park is located closest to the MHPA and the San Diego River channel. Uses in this area would include walking/hiking trails and nature observation nodes with educational kiosks. The active park component of the River Park is located between 30 and 550 feet from the river channel and MHPA area. Uses within the active park may include such facilities as sports fields, picnic areas, playgrounds, fenced dog parks, water features, a ranger station, a recreation center, an amphitheater, restroom facilities, parking, and walking/jogging/biking paths and trails. Final active park uses have not yet been determined; however, the more active uses, such as sports fields, would be situated further away from the river channel/MHPA area. No final active park uses are planned to be more intensive than those

listed above.

Indirect effects listed in the City's Subarea Plan include those from drainage, toxics, lighting, noise, barriers, invasives, brush management, and grading/land development as addressed by the Land Use Adjacency Guidelines specifically for indirect impacts to the MHPA. The Land Use Adjacency Guidelines would become conditions of Project approval.

6.1.1 Drainage

All new and proposed parking lots and developed areas in and adjacent to the preserve must not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA. This can be accomplished using a variety of methods including natural detention basins, grass swales or mechanical trapping devices. These systems should be maintained approximately once a year, or as often as needed, to ensure proper functioning. Maintenance should include dredging out sediments if needed, removing exotic plant materials, and adding chemical-neutralizing compounds (e.g., clay compounds) when necessary and appropriate.

Changes in hydrology, runoff, and sedimentation could indirectly impact species dependent on surface water. Increased runoff into habitat could also result in increased erosion and rates of scouring, which can result in downstream habitat loss for some species. Runoff, sedimentation, and erosion can adversely impact plant populations by damaging individuals or by altering site conditions sufficiently to favor other species (native and exotic non-native) that could outcompete sensitive species.

Grading activities associated with construction have potential to result in erosion and sedimentation within the San Diego River corridor. Sedimentation and erosion could change the structure of the existing river channel and degrade the quality of adjacent riparian vegetation. In addition, storm water contaminant runoff during construction could potentially carry a variety of pollutants into the river.

Storm water management measures would be integrated into the Project's design to ensure that increased runoff is not generated. Therefore, channel erosion impacts are not expected within the river corridor. Also, runoff associated with parking lots and developed areas of the Project would not drain directly into the MHPA. Storm water pollution control BMPs are part of the development plan. The Project will comply with the requirements of this Land Use Adjacency Guideline, which will reduce potential impacts to sensitive species, sensitive natural communities, and wetlands from drainage.

Fashion Valley Road improvements are to a low water crossing of the San Diego River, and a typical spanned (i.e., bridge) solution is not possible without significantly raising the entire profile of the roadway, which is not feasible due to adjacent property constraints (MTS trolley line and station). The proposed use of the Con/Span arch solution will improve river flow and street operations through the replacement of the existing pipe culverts with the Con/Span arch.

A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the Project to address erosion and sediment during the construction phase. Long-term maintenance actions proposed for the drainage treatment systems include those such as listed in Table 7-2 of the City of San

Diego's Storm Water Standards Part 1: BMP Design Manual (City 2018). The timing of these actions varies depending on the maintenance indicator. For example, accumulation of sediment, litter, debris, or other obstructions would be removed monthly and/or as needed after storm events. The remaining Maintenance Indicators (City 2018) would be treated on a quarterly basis. Implementation of the SWPPP and long-term BMP maintenance would address pollutants and their sources (such as from the dog parks) associated with the Project thereby reducing potential impacts to sensitive species, sensitive natural communities, and wetlands from storm water pollution.

6.1.2 Toxics

Land uses, such as recreation and agriculture, that use chemicals or generate by-products such as manure, that are potentially toxic or impactive to wildlife, sensitive species, habitat, or water quality need to incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA. Such measures should include drainage/detention basins, swales, or holding areas with non-invasive grasses or wetland-type native vegetation to filter out the toxic materials. Regular maintenance should be provided. Where applicable, this requirement should be incorporated into leases on publicly owned property as leases come up for renewal.

As noted in Section 6.1.1 of this biological technical report, the Project incorporates storm water pollution control BMPs to capture and filter runoff prior to entering the MHPA. Maintenance actions proposed for the drainage treatment systems include those such as listed in Table 7-2 of the City of San Diego's Storm Water Standards Part 1: BMP Design Manual (City 2018). The timing of these actions varies depending on the Maintenance Indicator as described above in Section 6.1.1. For example, accumulation of sediment, litter, debris or other obstructions would be removed monthly and/or as needed after storm events. The remaining Maintenance Indicators (City 2018) would be treated on a quarterly basis. Overall, the Project improves filtration of toxins compared to existing conditions and will reduce potential impacts to sensitive species, sensitive natural communities, and wetlands from toxics.

6.1.3 Lighting

Lighting of all developed areas adjacent to the MHPA should be directed away from the MHPA. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the MHPA and sensitive species from night lighting.

Night lighting exposes wildlife to an unnatural light regime that may adversely affect foraging patterns, increase predation risk, cause biological clock disruptions, and result in a loss of species diversity. The River Park will be a dawn-to-dusk facility, much of which is within the floodway, and lighting will not be provided in the floodway. Any other Project lighting installed, however, will be shielded, as necessary, to prevent light from spilling into the MHPA. Shielding will consist of the installation of fixtures that physically direct light away from the outer edges of the MHPA or landscaping, berms, or other barriers that prevent such light overspill. Final Project plans will depict the shielded light fixtures or other mechanisms used to protect the MHPA from night lighting, and the lighting used will adhere to the City's Outdoor Lighting Regulations (SDMC §142.0740).

6.1.4 Noise

Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas, recreational areas, and any other use that may introduce noises that could impact or interfere with wildlife utilization of the MHPA. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise reduction measures and be curtailed during the breeding season of sensitive species. Adequate noise reduction measures should also be incorporated for the remainder of the year.

The Land Use Adjacency Guidelines require that uses in or adjacent to the MHPA be designed to minimize noise impacts. The mixed-use development Project (multi-family residential, community retail, office), once built, would not be adjacent to the MHPA and is not expected to generate post-construction noise levels exceeding 60 dB(A) hourly average (that would be considered excessive). Additionally, there would be no active park uses that generate post-construction noise levels exceeding 60 dB(A) hourly average adjacent to the MHPA, nor wetland restoration activities in the MHPA that would do so. It should also be noted that the River Park will be a dawn-to-dusk facility that would not generate noise at night.

The distances between the active park (with active uses generating potentially excessive noise levels such as sports fields) and the MHPA range from a minimum of 59 feet (in the southwestern and northeastern portions of the Project site) to more than 300 feet (Figure 6), with an average distance of 175 feet. Also, there would be a 50-foot no use buffer adjacent to the MHPA and preserved/restored wetland habitats, and uses nearer to that no use buffer and the MHPA would be passive in nature and would include walking/hiking trails and nature observation nodes with educational kiosks that would not create excessive noise.

According to the Riverwalk San Diego Project Noise Study (Birdseye Planning Group, 2019), a number of the potential active park uses were evaluated to determine whether those facilities could generate noise levels that would exceed 60 dB(A) hourly average.

Reference noise levels for various active outdoor recreational uses were obtained for the purpose of evaluating potential impacts. The reference noise levels are summarized as follows:

- Soccer/outdoor field games – 52 dBA at 210 feet from the center of the field;
- Basketball/Sport courts – 64 dBA Leq at 40 feet from the center of court;
- Softball fields –75 dBA at 25 feet from home plate;
- Fenced dog park – 52 dBA at 30 feet from park boundary;
- Playground - 64 dBA at 25 feet from the main concentration of activity;
- Amphitheater - 94 dBA at 20 feet from front of amplified speakers; and
- Walking trail/Picnic area – 60 dBA at 5 feet.

Of the above potential uses, the amphitheater has the highest potential to produce excessive noise. As envisioned, the amphitheater, which would be located north of the San Diego River channel, would project sound to the north, away from the San Diego River corridor/MHPA and include a shielding “shell” on the river (south) side. Attenuation would be typical of a stationary noise source (i.e., 6 dBA per doubling of distance). Shielding from the amphitheater shell, installed to protect the San Diego River corridor/MHPA, would vary considerably based on design and construction materials. However, provided it has a solid surface that creates a barrier between the sound generated on stage and uses behind the amphitheater, typical building

attenuation can reduce ambient noise by 10-13 dBA. Acoustical design parameters to focus sound energy to the north, will further reduce noise levels south of the amphitheater. For the purpose of the evaluation, the reference level at the amphitheater location would be 81 dBA at 20 feet. The noise levels would attenuate by 6 dBA per doubling of distance. With these design parameters and sufficient distance from the MHPA, potential noise from the amphitheater would be reduced to below 60 dBA within the MHPA.

Noise associated with ball fields and play grounds also could exceed the 60 dBA level if located too close to the MHPA. The proposed distances for these uses from the MHPA would reduce the noise levels within the MHPA to below 60dBA. Walking trails, picnic areas, and dog park uses were found to have a less than 60 dBA noise level and, therefore, have no specific, noise related, distance buffer requirements from the MHPA

Table 4 shows the approximate distance to the 60dBA contour from each of the proposed Active Park Project features as well as the approximate distance of each feature from the MHPA.

Table 4
ACTIVE PARK NOISE LEVELS AT MHPA BOUNDARY

Source	Reference Level	Approximate Distance to 60 dBA Contour	Noise Buffer Between 60 dBA Contour and MHPA[1]
Soccer Field	52 dBA at 200 feet	n/a	200 feet
Basketball/Sport Court	64 dBA at 40 feet	80 feet	520 feet
Softball Field	75 dBA at 25 feet	140 feet	460 feet
Fenced Dog Park	52 dBA at 30 feet	n/a	n/a
Playground	64 dBA at 25 feet	50 feet	150 feet
Amphitheater	81 dBA (behind shell)	200 feet	300 feet
Walking Trails/Picnic Areas	60 dBA at 5 feet	n/a	n/a

[1]Approximate distance of proposed Project Active Park features from the MHPA

With adherence to the design of the amphitheater and the distance guidelines shown in Table 4, noise associated with use of the active park facilities would not exceed 60 dBA at the MHPA boundary. There would be a minimum of approximately 150 feet and a maximum of approximately 520 feet between the 60 dBA contour (for any proposed use) and the MHPA, and that noise buffer area would include passive park, the 50-foot no use buffer, and habitat restoration areas.

Construction-related noise from such sources as clearing, grading, and construction vehicular traffic, however, could be excessive temporarily during the breeding season of sensitive species, and excessive noise must be avoided or minimized. The Project would avoid or minimize excessive noise impacts to the least Bell's vireo and/or southwestern willow flycatcher through implementation of mitigation for indirect noise impacts presented in Section 8.1.4 of this report.

6.1.5 Barriers

New development adjacent to the MHPA may be required to provide barriers (e.g., non-invasive vegetation, rocks/boulders, fences, walls, and/or signage) along the MHPA boundaries to direct public access to appropriate locations and reduce domestic animal predation.

The Project will utilize and maintain existing bridges in the MHPA and proposes to construct MSCP-compliant trails on site to direct public access for passive recreation purposes. Per the City's Subarea Plan, passive recreation is compatible with the biological objectives of the MSCP and is, therefore, a compatible use within in the MHPA. Active park uses would not occur adjacent to the MHPA, including the dog parks that would be fenced. Boulders or deterrent vegetation, as well peeler log fencing, are proposed to be installed along the outside edge (within Active Park and Passive Park) of the 50-foot no use buffer to deter entrance into the 50-foot no use buffer around the MHPA and wetland restoration areas.

6.1.6 Invasives

No invasive non-native plant species shall be introduced into areas adjacent to the MHPA.

The Project will follow SDMC Landscape Standards (Section 1.3) and not use invasive species; rather, native species will be planted along the river in/adjacent to the MHPA, including in the no use buffer and River Park, as part of the Project's wetland habitat restoration.

6.1.7 Brush Management

New residential development located adjacent to and topographically above the MHPA (e.g., along canyon edges) must be set back from slope edges to incorporate Zone 1 brush management areas on the development pad and outside of the MHPA. Zones 2 and 3 will be combined into one zone (Zone 2) and may be located in the MHPA upon granting of an easement to the City (or other acceptable agency) except where narrow wildlife corridors require it to be located outside of the MHPA. Zone 2 will be increased by 30 feet, except in areas with a low fire hazard severity rating where no Zone 2 would be required. Brush management zones will not be greater in size than is currently required by the City's regulations. The amount of woody vegetation clearing shall not exceed 50 percent of the vegetation existing when the initial clearing is done. Vegetation clearing shall be done consistent with City standards and shall avoid/minimize impacts to covered species to the maximum extent possible. For all new development, regardless of the ownership, the brush management in the Zone 2 area will be the responsibility of a homeowner's association or other private party.

Habitable structures will be located more than 100 feet from the wildland-urban interface; therefore, no formalized brush management program is required per SDMC 142.0412. No brush management would occur within or adjacent to the MHPA.

6.1.8 Grading/Land Development

Manufactured slopes associated with site development shall be included within the development footprint for projects within or adjacent to the MHPA.

The Project was designed to include all manufactured slopes within the development footprint.

6.2 SPECIFIC GUIDELINES

Section 1.2.3 of the City's MSCP Subarea Plan includes a specific guideline to be met by the Project:

> *Native vegetation shall be restored as a condition of future development proposals along this portion of the San Diego River Corridor.*

The Project will comply with Guideline B15 through removal of invasive, non-native plant species and through focused seeding and container stock planting of native species along the San Diego River on site in the MHPA (Figures 3 and 9). A Wetland Restoration Plan that addresses the B15 restoration has been prepared and is included as Appendix A-2.

6.3 GENERAL PLANNING POLICIES AND DESIGN GUIDELINES

Section 1.4.1 of the City's Subarea Plan states that the following land uses are conditionally compatible with the biological objectives of the MSCP and will be allowed within the MHPA:

- Passive recreation
- Utility lines and roads in compliance with policies in Section 1.4.2 (below)
- Limited water facilities and other essential public facilities
- Limited, low density residential uses
- Brush Management (Zone 2)
- Limited agriculture

Passive recreation is the only conditionally compatible Project component in the MHPA. The passive recreation proposed as the use of the passive park is compatible with the biological objectives of the City's Multiple Species Conservation Program (MSCP) Subarea Plan (City 1997) and MHPA; therefore, it is an appropriate use adjacent to the MHPA. The passive park also acts as a biological buffer (in addition to the 50-foot no use buffer) between the preserved/restored habitat along the San Diego River Channel/MHPA and active park and development areas.

General planning policies and design guidelines for development are outlined in Section 1.4.2 of the City's MSCP Subarea Plan. These policies and guidelines apply to new roads and utilities; fencing, lighting, and signage; materials storage; mining, extraction, and processing facilities; and flood control within or adjacent to the MHPA. The Project does not include mining facilities; thus, this section of the general planning policies and design guidelines is not applicable to the Project. The Project is required to comply with policies and design guidelines relevant to new roads and utilities; fencing, lighting, and signage; materials storage; and flood control. Conformance with these guidelines is outlined in the following subsections.

6.3.1 Roads and Utilities – Construction and Maintenance Policies

This section of the Subarea Plan includes eight guidelines/policies. Each is summarized below along with an explanation describing how the Project complies with the guidelines/policies where it occurs within or adjacent to the MHPA.

1. *All proposed utility lines should be designed to avoid or minimize intrusion into the MHPA.*

   No utility lines would intrude upon the MHPA; all lines would be within the proposed development outside the MHPA.

2. *All new development for utilities and facilities within or crossing the MHPA shall be planned, designed, located, and constructed to minimize environmental impacts. If avoidance is infeasible, mitigation would be required.*

   The facilities within the MHPA are the two existing bridges (and their proposed, attached trails) and the Fashion Valley Road (Con/Span) improvements (Figure 4). Existing utilities that are currently in Fashion Valley Road would remain and be connected underneath the Con/Span arch.

   The Con/Span arch is the best solution for the Fashion Valley Road improvements to minimize environmental impacts because the footing of the structure is buried beneath the roadway, and the channel bottom is not concrete lined but left earthen. Fashion Valley Road improvements are to a low water crossing of the San Diego River, and a spanned (i.e., bridge) solution is not possible without significantly raising the entire profile of the roadway, which is not feasible due to adjacent property constraints. The proposed use of the Con/Span arch solution will improve river flow and street operations through the replacement of the existing pipe culverts with the Con/Span arch.

   Much of the impact from construction of the arch is temporary (0.30 acre; Figure 6), buried below ground, and would not be identifiable a few years after construction due to revegetation with natives as required Project mitigation (see Section 8.1.1 of this report). Permanent impacts (0.34 acre) would occur from retaining walls that could have buried footings and/or piles similar to the arch. The proposed grading is needed (unavoidable) to ensure the integrity of the arch structure and to protect adjacent properties should there be a major flood. Sufficient cleared work space is needed (unavoidable) for excavation and diverting the river so the contractor can get in and get out as quickly as possible in order to minimize potential construction and flooding issues, as well as time spent working in the river (estimated to be approximately seven months). Mitigation for the permanent impacts is also required as presented in Section 8.1.1 of this report.

3. *Temporary construction areas and roads, staging areas, or permanent access roads must not disturb existing habitat unless determined to be unavoidable.*

   The only temporary construction area for the Project where existing habitat would be disturbed is that of the Fashion Valley Road improvements, and the temporary construction impacts are unavoidable as described above (under number 2). All other temporary use areas/features and permanent access roads will be located within urban/developed land on site.

Construction and maintenance activities in wildlife corridors must avoid significant disruption of corridor usage.

The wildlife corridor on site includes the San Diego River corridor, some of which lies within the MHPA. Wildlife movement along the river corridor is currently constrained by the existing golf course (the remainder of which is in the MHPA), which abuts the northern and southern edges of the river and is comprised of wide-open greens that do not provide any protective cover.

Fashion Valley Road construction would avoid significant disruption of corridor usage through the use of a spanned crossing feature with a soft-bottomed area beneath the roadway. This would be larger than the existing culverts and thus more conducive to wildlife movement. Furthermore, anticipated construction time is estimated to be approximately seven months, and during that time the river would be diverted. The area encompassed by the river diversion would be available for wildlife movement. Finally, maintenance activities on Fashion Valley Road are expected to be infrequent and short in duration. Therefore, construction and maintenance activities associated with Fashion Valley Road would not cause significant disruption of corridor usage.

4. *Roads in the MHPA will be limited to those identified in Community Plan Circulation Elements, essential collector streets, and necessary maintenance/emergency access roads.*

   Fashion Valley Road is a 4-lane collector identified in the Mission Valley Community Plan adopted September 2019.

5. *Development of roads in canyon bottoms should be avoided whenever feasible. If an alternative location outside the MHPA is not feasible, then the road must be designed to cross the shortest length possible, and if a road crosses the MHPA, it should provide for fully-functional wildlife movement capability.*

   The Project will not develop any new roads in canyon bottoms. Fashion Valley Road is an existing facility that will be improved as part of the Project. As explained under number 4 above, the roadway improvements during and after construction would provide for wildlife movement capability.

6. *Where possible, roads within the MHPA should be narrowed from existing design standards to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. Roads must be located in lower quality habitat or disturbed areas to the extent possible.*

   The Project includes modifications to Fashion Valley Road to improve this existing crossing of the San Diego River in a manner that avoids habitat impacts to the maximum extent possible. The majority of the impacts to construct the roadway improvements would be within the existing Fashion Valley Road limits that are urban/developed land. The existing roadway culverts would be replaced with a Con/Span arch, leaving an earthen-bottomed channel. The new spanned crossing would improve flood flows along the river and provide for wildlife movement.

7. *For the most part, existing roads and utility lines are usually considered a compatible use in the MHPA and, therefore, will be maintained.*

   Fashion Valley Road is an existing roadway that crosses the MHPA that would be modified with a spanned design, a Con/Span arch, to improve flood flows along the San Diego River. The spanned design would also provide for improved wildlife movement capability. Construction impacts have been minimized to the maximum extent feasible with most of the impacts occurring within the existing roadway to urban/developed land. Impact to habitat that would occur, has also been minimized with much of it being temporary in nature, and all habitat impacts would be mitigated via on-site restoration. The Fashion Valley Road improvements, therefore, would be compatible with the biological objectives of the MSCP for the MHPA in that the improvements and habitat restoration would: 1) ensure the long-term viability and sustainability of the native ecosystem function and natural processes associated with the San Diego River and 2) restore native plant associations and functional wildlife connections to provide viable wildlife and sensitive species habitat.

6.3.2 Fencing, Lighting, and Signage

This section of the Subarea Plan includes three guidelines/policies. Each is summarized below along with an explanation as to how the Project complies where it occurs within or adjacent to the MHPA.

1. *Fencing or other barriers will be used where it is determined to be the best method to achieve conservation goals and adjacent to land uses incompatible with the MHPA.*

   The Project will utilize and maintain existing bridges in the MHPA and proposes to construct MSCP-compliant trails on site to direct public access for passive recreation purposes. These features will control public access, and passive recreation is considered a compatible use with the MHPA. Where the trails are located within the MHPA, split-rail fencing and signage are proposed to be installed along either side of each trail to discourage trespass into the sensitive habitats within the MHPA. Boulders or deterrent vegetation, as well peeler log fencing, are proposed between the 50-foot no use buffer adjacent to the MHPA to deter entrance into the wetland and no use buffer, MHPA, and restoration/mitigation areas. If constructed, the dog parks would be located in the active park, which is not adjacent to the MHPA, and would be fenced.

2. *Lighting shall be designed to avoid intrusion in the MHPA.*

   The River Park will be a dawn-to-dusk facility and is within the floodway, which includes the MHPA. Lighting will not be provided in the floodway. Any other Project lighting installed, however, will be shielded, as necessary, to prevent light from spilling into the MHPA. Shielding will consist of the installation of fixtures that physically direct light away from the outer edges of the MHPA or landscaping, berms, or other barriers that prevent such light overspill. Final Project plans will depict the shielded light fixtures or other mechanisms used to protect the MHPA from night lighting, and the lighting used will adhere to the City's Outdoor Lighting Regulations (SDMC §142.0740). Compliance with lighting regulations will be a condition of approval for the Project.

3. *Signage will be limited to access, litter control, and educational purposes.*

   The final River Park design will include signs for limiting access, litter control, and educational purposes. Signage appropriate for its location is proposed to be placed: 1) along split-rail fencing installed along the trails that occur within the MHPA; 2) along the peeler log fencing installed at the edge of the 50-foot no use buffer; and 3) at nature observation nodes with educational kiosks. The signage will discourage trespass, littering, dumping, feeding of wildlife, collecting wildlife; will note that dogs must be leashed and are not allowed in the MHPA (except on the bridges/trail segments passing through the MHPA); and will educate River Park users of the sensitivity and importance of the natural resources associated with the San Diego River. While not adjacent to the MHPA, the fenced dog parks will include signs that state dogs may only be unleashed within the fenced dog park areas and that dog waste must be collected and disposed of immediately and appropriately by their handlers. The dog parks also will include trash receptacles and dog waste bag dispensers. Compliance with the guideline will be a condition of approval for the Project.

6.3.3 Materials Storage

Storage of materials (e.g., hazardous or toxic chemicals, equipment, etc.) will not be located within the MHPA, and proper storage of such materials is required per applicable regulations in any areas that may impact the MHPA, especially due to potential leakage.

No storage is proposed within the MHPA. All storage for construction, on-site business, or residential uses will be done in accordance with relevant materials safety regulations. During construction, laydown areas, material stockpiles, vehicle parking, and construction trailers will be located within the limits of the project development areas. None of these interim construction uses will occur within the MHPA or the project mitigation/restoration areas. As the future development will be phased, the exact construction staging and laydown areas will be dependent upon the portion of the site that is being developed. Additionally, all construction uses must incorporate appropriate BMPs to ensure that there are no indirect effects to adjacent MHPA areas.

6.3.4 Flood Control

This section of the Subarea Plan includes three guidelines/policies. Each is summarized below along with an explanation as to how the Project complies where it occurs within or adjacent to the MHPA.

1. *Flood control should generally be limited to existing agreements with resource agencies unless demonstrated to be needed based on a cost benefit analysis and pursuant to a restoration plan. Floodplains within the MHPA, and upstream from the MHPA if feasible, should remain in a natural condition and configuration in order to allow for the ecological, geological, hydrological, and other natural processes to remain or be restored.*

The floodplain of the San Diego River in the vicinity of the Project has been previously developed with the Riverwalk golf course and Fashion Valley Road. Project grading to develop the River Park would create elevations that not only would support the River Park, but the native habitat restoration and mitigation components of the Project that are designed to create a more natural floodplain configuration and improve/restore hydrological and ecological processes.

Additionally, the proposed modifications to the Fashion Valley Road crossing of the San Diego River, while necessary to accommodate the proposed roadway improvements given the adjacent property constraints, would also improve river flows. This would occur through the replacement of existing pipe culverts with a Con/Span arch that would leave a natural, earthen-bottomed, river channel substrate. And, the habitat impacted temporarily during construction would be restored with native plant species. Therefore, the Fashion Valley Road improvements would also improve/restore hydrological and ecological processes.

2. *No berming, channelization, or man-made constraints or barriers to creek, tributary, or river flows should be allowed in any floodplain within the MHPA unless reviewed by all appropriate agencies, and adequately mitigated. Review must include impacts to upstream and downstream habitats, flood flow volumes, velocities and configurations, water availability, and changes to the water table level.*

   The Project does not propose berming, channelization, or man-made constraints to flows in the floodplain. All proposed restoration grading would occur in what is presently golf course and would not result in impacts to the wetlands in the San Diego River channel. A low berm would be left, however, between the graded restoration area and the existing river channel, which would allow for the grading to occur without disturbing existing wetland habitat or open water. A hydrological study for the Project (Chang Consultants 2019) was conducted to define the 2-, 5- and 10-year floodplain limits and found that the majority of the on-site habitat restoration area will be inundated during at least a 2-year storm event, and virtually the entire area would be inundated during a 10-year event. Therefore, it is expected that the low berm that would remain along the San Diego River would overtop during a 2-year storm event and that water would then flow through the restoration area.

3. *No riprap, concrete, or other unnatural material shall be used to stabilize river, creek, tributary, and channel banks within the MHPA. River, stream, and channel banks shall be natural, and stabilized where necessary with willows and other appropriate native plantings. Rock gabions may be used where necessary to dissipate flows and should incorporate design features to ensure wildlife movement.*

   Both the River Park and Fashion Valley Road improvements would utilize native wetland species to stabilize the created channel bank. No riprap, concrete, or unnatural material would be used to stabilize the newly contoured banks of the San Diego River.

6.4 GENERAL MANAGEMENT DIRECTIVES

The following summarized, general management directives for all areas of the City's MSCP Subarea Plan are applicable to the Project. Those directives not applicable to the Project include Adjacency Management Issues (except public access; see Section 6.4.3 of this biological technical report), and Invasives Exotics Control and Removal (except Invasive Plant Species; see Section 6.4.6 of this biological technical report).

6.4.1 Mitigation

Mitigation, when required as part of project approvals, shall be performed in accordance with the City of San Diego Environmentally Sensitive Lands Ordinance and Biology Guidelines.

The mitigation measures in Section 8.0 of this biological technical report have been formulated to satisfy the requirements of the City's MSCP Subarea Plan, Biology Guidelines, and ESL Regulations.

6.4.2 Restoration

Restoration or revegetation undertaken in the MHPA shall be performed in a manner acceptable to the City. Where covered species status identifies the need for reintroduction and/or increasing the population, the covered species will be included in restoration/revegetation plans, as appropriate. Restoration or revegetation proposals will be required to prepare a plan that includes elements addressing financial responsibility, site preparation, planting specifications, maintenance, monitoring and success criteria, and remediation and contingency measures. Wetland restoration/revegetation proposals are subject to permit authorization by federal and state agencies.

Restoration for B15 is addressed in a conceptual habitat restoration plan and includes all elements required to satisfy City requirements. Restoration proposed for Project wetland mitigation is included in a separate Mitigation Plan (Appendix A-1). Additional authorization by federal and State agencies is required for wetland restoration proposals.

6.4.3 Public Access, Trails, and Recreation

Provide sufficient signage to clearly identify public access to the MHPA. Barriers such as vegetation, rocks/boulders or fencing may be necessary to protect highly sensitive areas. Use appropriate type of barrier based on location, setting and use. For example, use chain link or cattle wire to direct wildlife movement, and natural rocks/boulders or split rail fencing to direct public access away from sensitive areas. Lands acquired through mitigation may preclude public access in order to satisfy mitigation requirements.

The Project will utilize and maintain existing bridges in the MHPA, rather than create new habitat impacts in the MHPA, and proposes to create MSCP-compliant trails on site to direct public access for passive recreation purposes. Those trails would be constructed in urban/developed land. These features would control public access, and the River Park is expected to provide the public with sufficient opportunities to experience the benefits of the MHPA without trespassing into its sensitive habitats. Where the trails are located within the MHPA, split-rail fencing and signage are proposed to be installed along either side of each trail to discourage trespass into the sensitive habitats within the MHPA.

Additionally, boulders or deterrent vegetation, as well peeler log fencing with signage, will be installed at the edge of the 50-foot no use buffer to deter entrance into the buffer, MHPA, and restoration areas. Signage will also be provided at nature observation nodes with educational kiosks. The final River Park design will include signs that follow this directive to discourage trespass, littering, dumping, feeding of wildlife, collecting wildlife, keeping pets on-leash, and will educate River Park users of the sensitivity and importance of the natural resources associated with the San Diego River and MHPA as a condition of Project approval.

Locate trails, view overlooks, and staging areas in the least sensitive areas of the MHPA. Locate trails along the edges of urban land uses adjacent to the MHPA, or the seam between land uses (e.g., agriculture/habitat), and follow existing dirt roads as much rather than entering habitat or wildlife movement areas. Avoid locating trails between two different habitat types (ecotones) for longer than necessary due to the typically heightened resource sensitivity in those locations.

The Project will utilize and maintain existing bridges in the MHPA and proposes to construct MSCP-compliant trails associated with the existing bridges. The trails would not meander through the MHPA but, rather, would lead directly through the MHPA and the 50-foot no use buffer and into the passive and active park components of the River Park. No other trails (or trail segments) are proposed within the MHPA.

In general, avoid paving trails unless management and monitoring evidence shows otherwise. Clearly demarcate and monitor trails for degradation and off-trail access and use. Provide trail repair/maintenance as needed. Undertake measures to counter the effects of trail erosion including the use of stone or wood crossjoints, edge plantings of native grasses, and mulching of the trail.

Pursuant to the City's MSCP Subarea Plan, the trails proposed would not be paved and would utilize materials acceptable in the floodplain. These features will control public access. As stated previously, where the trails are located within the MHPA, split-rail fencing and signage are proposed to be installed along either side of each trail to discourage trespass into the sensitive habitats within the MHPA. Additionally, boulders or deterrent vegetation, as well peeler log fencing with signage, will be installed at the edge of the 50-foot no use buffer to deter entrance into the buffer, MHPA, and restoration areas.

Minimize trail widths to reduce impacts to critical resources. For the most part, do not locate trails wider than four feet in core areas or wildlife corridors. Exceptions are in the San Pasqual Valley where other agreements have been made, in Mission Trails Regional Park, where appropriate, and in other areas where necessary to safely accommodate multiple uses or disabled access. Provide trail fences or other barriers at strategic locations when protection of sensitive resources is required.

The trails proposed would not exceed four feet in width (except where they approach the existing bridges and would widen to the bridge width). Where the trails are located within the MHPA, split-rail fencing and signage are proposed to be installed along either side of each trail to discourage trespass into the sensitive habitats within the MHPA.

Limit the extent and location of equestrian trails to the less sensitive areas of the MHPA. Locate staging areas for equestrian uses at a sufficient distance (e.g., 300-500 feet) from areas with riparian and coastal sage scrub habitats to ensure that the biological values are not impaired.

The Project does not include equestrian trails.

Off-road or cross-country vehicle activity is an incompatible use in the MHPA, except for law enforcement, preserve management or emergency purposes. Restore disturbed areas to native habitat where possible or critical, or allow to regenerate.

Off-road and cross-country vehicle activity within the MHPA is not expected with implementation of the Project.

Limit recreational uses to passive uses such as birdwatching, photography and trail use. Locate developed picnic areas near MHPA edges or specific areas within the MHPA, in order to minimize littering, feeding of wildlife, and attracting or increasing populations of exotic or nuisance wildlife (opossums, raccoons, skunks). Where permitted, restrain pets on leashes.

The Project will utilize and maintain existing bridges in the MHPA and proposes to construct MSCP-compliant trails on site to direct public access for passive recreation purposes. No developed picnic areas are proposed within or adjacent to the MHPA. Pets, where allowed, within or adjacent to the MHPA would be restrained on leashes.

Remove homeless and itinerant worker camps in habitat areas as soon as found pursuant to existing enforcement procedures.

Homeless camps, should they be discovered, will be removed in coordination with local law enforcement during habitat restoration efforts.

Maintain equestrian trails on a regular basis to remove manure (and other pet feces) from the trails and preserve system in order to control cowbird invasion and predation. Design and maintain trails where possible to drain into a gravel bottom or vegetated (e.g., grass-lined) swale or basin to detain runoff and remove pollutants.

The Project does not include equestrian trails.

6.4.4 Litter/Trash and Materials Storage

Remove litter and trash on a regular basis. Post signage to prevent and report littering in trail and road access areas. Provide and maintain trash cans and bins at trail access points.

The Project will install signage and trash receptacles to minimize littering. Trash receptacles will have covers to prevent rummaging by wildlife and will be located in proximity to potential picnic areas and other seating areas. Litter and trash removal within the MHPA and adjacent park space will be the responsibility of the land management entity (see Sections 8.2 and 8.3 of this report). The dog parks will include trash receptacles and dog waste bag dispensers and be cleaned and maintained by the City per standard City dog park requirements and guidelines.

Impose penalties for littering and dumping. Fines should be sufficient to prevent recurrence and also cover reimbursement of costs to remove and dispose of debris, restore the area if needed, and to pay for enforcement staff time.

The land management entity (see Sections 8.2 and 8.3 of this report) will be responsible for imposing penalties for littering and dumping within the MHPA.

Prohibit permanent storage of materials (e.g., hazardous and toxic chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any areas that may impact the MHPA, due to potential leakage.

No storage is proposed within the MHPA. All storage for construction, on-site business, or residential uses will be done in accordance with relevant materials safety regulations.

Keep wildlife corridor undercrossings free of debris, trash, homeless encampments, and all other obstructions to wildlife movement.

The Project will remove debris, trash, homeless encampments, and other obstructions to wildlife movement during habitat restoration efforts. The land management entity (see Sections 8.2 and 8.3 of this report) will be responsible for long-term management within the River Park and MHPA.

Evaluate areas where dumping recurs for the need for barriers. Provide additional monitoring as needed (possibly by local and recreational groups on a "Neighborhood Watch" type program), and/or enforcement.

Boulders or deterrent vegetation, as well peeler log fencing, will be installed at the edge of the 50-foot no use buffer to deter entrance into the buffer, MHPA, and restoration areas. The land management entity (see Sections 8.2 and 8.3 of this report) will be responsible for long-term monitoring of illegal dumping within the River Park and MHPA.

Litter, trash, and materials storage associated with Project construction would be addressed through City general mitigation (see Section 8.1.3 II.A of this biological technical report). Litter and trash associated with use of the bridges and trails in the River Park and MHPA will be the responsibility of the land management entity (see Sections 8.2 and 8.3 of this report).

6.4.5 Adjacency Management Issues

Enforce, prevent and remove illegal intrusions into the MHPA (e.g., orchards, decks, etc.) on an annual basis, in addition to complaint basis.

Boulders or deterrent vegetation, as well peeler log fencing, will be installed at the edge of the 50-foot no use buffer to deter entrance into the buffer, MHPA, and restoration areas. Enforcement and removal of illegal intrusions into the MHPA will be the responsibility of the land management entity (see Sections 8.2 and 8.3 of this report).

Disseminate educational information to residents adjacent to and inside the MHPA to heighten environmental awareness, and inform residents of access, appropriate plantings, construction or disturbance within MHPA boundaries, pet intrusion, fire management, and other adjacency issues.

The Project will include installation of signage in park areas to inform the public of the MHPA and the sensitive resources that exist therein. The Project Proponent will notify all residents that their domestic cats will be required to remain indoors and will be responsible for dissemination of additional information to residents to protect the MHPA as the need arises.

Install barriers (fencing, rocks/boulders, vegetation) and/or signage where necessary to direct public access to appropriate locations.

Boulders or deterrent vegetation, as well peeler log fencing with signage, will be installed at the edge of the 50-foot no use buffer to deter entrance into the buffer, MHPA, and restoration areas.

6.4.6 Invasive Exotics Control and Removal

Do not introduce invasive non-native species into the MHPA. Provide information on invasive plants and animals harmful to the MHPA, and prevention methods, to visitors and adjacent residents. Encourage residents to voluntarily remove invasive exotics from their landscaping.

The Project will remove invasive species during habitat restoration efforts. In addition, the landscape plan for the Project will avoid the use of exotic species within and adjacent to the MHPA. Non-native plant species potentially introduced via human use of trails and park space would be treated before proliferation into sensitive areas through ongoing maintenance of the park space by the land management entity (see Sections 8.2 and 8.3 of this report).

Remove giant reed, tamarisk, pampas grass, castor bean, artichoke thistle, and other exotic invasive species from creek and river systems, canyons and slopes, and elsewhere within the MHPA as funding or other assistance becomes available. If possible, it is recommended that removal begin upstream and/or upwind and move downstream/downwind to control reinvasion. Priorities for removal should be based on invasive species' biology (time of flowering, reproductive capacity, etc.), the immediate need of a specific area, and where removal could increase the habitat available for use by covered species such as the least Bell's vireo. Avoid removal activities during the reproductive seasons of sensitive species and avoid/ minimize impacts to sensitive species or native habitats. Monitor the areas and provide additional removal and apply herbicides if necessary. If herbicides are necessary, all safety and environmental regulations must be observed. The use of heavy equipment, and any other potentially harmful or impact-causing methodologies, to remove the plants may require some level of environmental or biological review and/or supervision to ensure against impacts to sensitive species.

The Project will remove non-native species from the MHPA during habitat restoration and enhancement efforts. The removal would begin at the upstream portion of the San Diego River on site where the Project mitigation area lies and move downstream into the other restoration areas. Removal efforts will be made by hand or with small machinery (e.g., line trimmers) whenever possible, but focused herbicide application may be used if needed. All restoration activities, including removal efforts, would avoid the nesting seasons of the least Bell's vireo and light-footed Ridgway's rail (March 15 through September 15) and southwestern willow flycatcher (May 1 through September 1) should any of those species be present as determined during a protocol, pre-restoration activity survey. Maintenance and monitoring of the restoration would occur for a period of five years to ensure that weed cover success criteria are met. Long-term monitoring and maintenance of the habitat mitigation and restoration will be the responsibility of the City, a mitigation banking entity, or other approved land management entity (see Sections 8.2 and 8.3 of this report). Mitigation and Restoration plans, respectively, are included with this report as Appendices A-1 and A-2 to addresses these issues and provide additional information.

If funding permits, initiate a baseline survey with regular follow-up monitoring to assess invasion or re-invasion by exotics, and to schedule removal. Utilize trained volunteers to monitor and remove exotic species as part of a neighborhood, community, school, or other organization's activities program (such as Friends of Peñasquitos Preserve has done). If done on a volunteer basis, prepare and provide information on methods and timing of removal to staff and the public if requested. For giant reed removal, the Riverside County multi-jurisdictional management effort and experience should be investigated and relevant techniques used. Similarly, tamarisk removal should use the Nature Conservancy's experience in the Southern California desert regions, while artichoke thistle removal should reference the Nature Conservancy's experience in Irvine. Other relevant knowledge and experience is available from the California Exotic Pest Plant Council and the Friends of Los Peñasquitos Canyon Preserve.

The Project's habitat restoration requires five years of monitoring and maintenance of restoration and enhancement areas consistent with the City's Biology Guidelines (unless success criteria are met sooner). Further monitoring and maintenance of non-native species within the MHPA will be the responsibility of the land management entity (See Sections 8.2 and 8.3 of this report).

Conduct an assessment of the need for cowbird trapping in each area of the MHPA where cattle, horses, or other animals are kept, as recommended by the habitat management technical committee in coordination with the wildlife agencies.

The Project does not include staging of cattle, horses, or other animals. However, brown-headed cowbirds have been observed on site. Brown-headed cowbirds will likely continue to occupy the site following implementation of the Project. Because cowbird presence is part of the existing conditions on site, the Project will conduct cowbird monitoring and control during the maintenance and monitoring period of the wetland habitat restoration. Any further cowbird control would be the responsibility of the land management entity (See Sections 8.2 and 8.3 of this report).

If eucalyptus trees die or are removed from the MHPA area, replace with appropriate native species. Ensure that eucalyptus trees do not spread into new areas, nor increase substantially in numbers over the years. Eventual replacement by native species is preferred.

The Project will replace any eucalyptus trees within the MHPA with native species during habitat restoration and enhancement efforts. The Project does not propose planting of new eucalyptus trees.

On a case by case basis some limited trapping of non-native predators may be necessary at strategic locations, and where determined feasible to protect ground and shrub-nesting birds, lizards, and other sensitive species from excessive predation. This management directive may be considered a Priority 1 if necessary to meet the conditions for species coverage. If implemented, the program would only be on a temporary basis and where a significant problem has been identified and therefore needed to maintain balance of wildlife in the MHPA. The program would be operated in a humane manner, providing adequate shade and water, and checking all traps twice daily. A domestic animals release component would be incorporated into the program. Provide signage at access points and noticing of adjacent residents to inform people that trapping occurs, and how to retrieve and contain their pets.

Residents' domestic cats will be required to remain indoors. Feeding of feral cats will be prohibited. All trash containers associated with the development project will be secured, and trash will be disposed of on a regular schedule such that containers will never overflow. In the park, trash receptacles will have covers to prevent rummaging by wildlife and will be located in proximity to potential picnic areas and other seating areas. Litter and trash removal within the MHPA and park space will be the responsibility of the land management entity (See Sections 8.2 and 8.3 of this report). The City should implement a monitoring program on a specified schedule for numbers of mesopredators and implement mesopredator control as needed.

6.4.7 Flood Control

Perform standard maintenance, such as clearing and dredging of existing flood channels, during the non-breeding or nesting season of sensitive bird or wildlife species utilizing the riparian habitat. For the least Bell's vireo, light-footed Ridgway's rail, and southwestern willow flycatcher the non-breeding season generally includes September through mid-March.

This directive will be followed for Fashion Valley Road.

Review existing flood control channels within the MHPA periodically (every five to ten years) to determine the need for their retention and maintenance, and to assess alternatives, such as restoration of natural rivers and floodplains.

There are no existing flood control channels on the Project site, and none will be constructed as part of the Project.

6.5 CONDITIONS FOR COVERAGE

Appendix A of the City's MSCP Subarea Plan (City 1997) includes conditions of coverage for species covered by the plan, including Area Specific Management Directives (ADMDs). Four species covered by the Subarea Plan occur on site: least Bell's vireo, light-footed Ridgway's rail, Cooper's hawk, and western bluebird. One species covered by the Subarea Plan has moderate potential to occur on site but was not found during focused surveys in 2015 and 2018: southwestern willow flycatcher. Conditions of coverage are provided in Appendix A of the City's MSCP Subarea Plan for the least Bell's Vireo, light-footed Ridgway's rail, Cooper's hawk, and southwestern willow flycatcher. The Project's conformance with conditions of coverage for these species is outlined below.

6.5.1 Least Bell's Vireo and Southwestern Willow Flycatcher

According to the conditions of coverage for least Bell's vireo and southwestern willow flycatcher, jurisdictions require surveys (using appropriate protocols) during the CEQA review process in suitable habitat proposed to be impacted and require incorporation of mitigation measures consistent with the Clean Water Act Section 404(b)1 guidelines to demonstrate compliance with the Clean Water Act. Participating jurisdictions' guidelines and ordinances, and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. Jurisdictions must require new developments adjacent to preserve areas that create conditions attractive to brown-headed cowbirds to monitor and control cowbirds. Area specific management directives must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Any clearing of occupied habitat must occur between September 16 and March 14 (i.e., outside of the nesting season).

The site was surveyed in 2015 and 2018 for presence of least Bell's vireo and southwestern willow flycatcher. The least Bell's vireo was found to be present, although the observations were of solitary, transient males. The southwestern willow flycatcher was not detected during surveys for the subspecies in 2015 and 2018 but it considered to have moderate potential to occur due to the presence of potentially suitable riparian breeding habitat. The least Bell's vireo was observed more than 350 feet outside the Project site (Figure 6).

The Project will restore, enhance, and protect all existing riparian habitat on site in a manner that increases the quality of the habitat from existing conditions. The Project will establish a 50-foot no use buffer adjacent to the MHPA and restored/enhanced/preserved wetland habitats, and uses nearer to that no use buffer and the MHPA would be passive in nature and would include walking/hiking trails and nature observation nodes with educational kiosks, which would provide additional buffer between the habitats and the active park uses. The wetland buffers and establishment of the River Park would allow for creation and enhancement of native upland transition habitat surrounding the wetlands. Only passive uses would be allowed in these areas. The buffers will include native plantings (following grading for flood control). See Section 5.5.4, *Wetland Buffer Analysis,* for more buffer details. Furthermore, the Project will comply with the Land Use Adjacency Guidelines to protect the wetlands in the MHPA from adverse indirect impacts (see Section 6.1 of this report).

The brown-headed cowbird (*Molothrus ater*), a nest parasite, has been observed on site and will likely continue to occupy the site following implementation of the Project. Because cowbird presence is part of the existing conditions on site, the Project will conduct cowbird monitoring and control during the maintenance and monitoring period of the wetland habitat restoration. Any further cowbird control would be the responsibility of the land management entity (See Sections 8.2 and 8.3 of this report).

As described in Section 8.1.3 of this report, construction activities shall be restricted during the nesting season (i.e., March 15–September 15).

6.5.2 Light-footed Ridgway's Rail

According to the conditions of coverage for the light-footed Ridgway's rail in Appendix A of the City's MSCP Subarea Plan, this species will be covered by the MSCP because 93 percent of its habitat will be conserved. Furthermore, participating jurisdictions' guidelines and ordinances, and State and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. ASMDs for the species must include active management of wetlands to ensure a healthy tidal saltmarsh environment, and specific measures to protect against detrimental edge effects to this species. Furthermore, the Project has incorporated measures to avoid direct and indirect impacts to this species as explained in Section 1.2, *Project Description*, of this report.

The River Park portion of the Project includes grading for flood control purposes and planting of native wetland species to create native habitats adjacent to the San Diego River and the existing wetlands in the southwestern portion of the Project site. The goal is to create a mosaic of site-appropriate wetland/riparian associated habitats similar to those on site through the installation of a broad species mix. The habitat restoration could create appropriate habitat for this species on site as addressed in Section 5.5.4, *Wetland Buffer Analysis*. Additionally, the transitional upland/wetland habitat to be planted in the buffer between the river and proposed development to the north and the MHPA/wetland buffer to the south (Figure 9), as well as compliance with the Land Use Adjacency Guidelines and avoidance of noise impacts, will provide protection against detrimental edge effects to this species.

6.5.3 Cooper's Hawk

In the design of future projects within the Metro-Lakeside-Jamul segment, design of preserve areas shall conserve patches of oak woodland and oak riparian forest of adequate size for nesting and foraging habitat. Area specific management directives must include 300-foot impact avoidance areas around the active nests, and minimization of disturbance in oak woodlands and oak riparian forests.

The Proposed Project is not located within the Metro-Lakeside-Jamul segment. Therefore, this Area Specific Management Directive is not applicable to the Project. Pre-construction nesting surveys would be conducted for any activities proposed during the typical avian breeding season (February 1 to September 15) in order to comply with the MBTA and California Fish and Game Code. If an active Cooper's hawk nest is found, a biologist will coordinate with the wildlife agencies to determine appropriate avoidance measures, which would include a 300-foot impact avoidance area.

7.0 PROJECT IMPACT ANALYSIS

The City's CEQA Significance Determination Thresholds (Appendix I to City 2018) are used to establish whether or not there is a significant effect from the above-described types of impacts. A significant effect is defined as a "substantial or potentially substantial adverse change in the environment."

Impacts to biological resources are assessed by City staff through the CEQA review process, and through review of the Project's consistency with the ESL regulations, the Biology Guidelines, and with the City's Subarea Plan. Before a determination of the significance of an impact can be made, the presence and nature of the biological resources must be established. The following two steps summarize the procedure for collecting the necessary information.

STEP 1: Determine the extent of biological resources and values present on the site.

Based on the literature review (see Section 3.1 of this report), it was determined that the site is part of the MHPA, contains a natural drainage (San Diego River), is within the 100-year floodplain, and supports listed and sensitive species.

STEP 2: Based on Step 1, if significant biological resources are present, then a survey to determine the nature and extent of the biological resources on the site is warranted.

Based on the results of Step 1, surveys to map vegetation, delineate wetlands, and search for listed species were conducted (see Section 3.2 of this report).

> Direct Impacts: Any physical alteration, disturbance, or destruction of biological resources that would result from project-related activities is considered a direct impact. Examples include vegetation clearing and loss of individual species and/or their habitats.
>
> Indirect Impacts: Indirect impacts occur later in time or are farther removed in distance but are still reasonably foreseeable and attributable to project-related activities. Indirect impacts may result from elevated noise levels, human activity, decreased water quality, and introduction of invasive species.
>
> Cumulative Impacts: Cumulative impacts are the regional effects of a project in combination with other projects and conditions that may affect an ecosystem or one of its components beyond the project limits and on a regional scale.
>
> Permanent Impacts: Direct or indirect impacts that result in the irreversible removal of biological resources are considered permanent. An example of a direct, permanent impact is the removal of vegetation and the construction of a building or paved roadway in its place. An example of a permanent, indirect impact is stormwater from a developed site flowing, without treatment, into a natural drainage and decreasing the quality of the water in the drainage.

Temporary Impacts: Direct or indirect impacts that are limited in duration or reversible can be viewed as temporary. An example of a temporary, indirect impact is the generation of fugitive dust occurring during construction. An example of a temporary, direct impact is the removal of vegetation for construction of an underground pipeline, after which natural vegetation can be allowed to recolonize the impact area, or the area can be revegetated through the planting of container stock and/or seed. The City's Biology Guidelines do not decipher between temporary and permeant impacts to wetland habitats. All impacts to wetland habitats are mitigated in accordance with the City's Biology Guidelines.

The determination of significance for the Project's impacts is presented beginning in Section 7.1 of this report.

7.1 DIRECT IMPACTS

The following sections describe direct impacts from the Project. While potential impacts from the future development of the roadway IOD have been included below for direct impacts to vegetation communities and land cover types as well as jurisdictional waters and wetlands, these impacts will be further analyzed in future environmental analyses as the roadway designs are refined. All associated direct impacts (to particular species, wildlife corridors, etc.) also would be addressed in future environmental analyses.

7.1.1 Direct Impacts to Vegetation Communities and Land Cover Types

Approximately 162.71 acres would be permanently impacted by the multi-use, River Park, and Fashion Valley Road improvements components of the Project. An additional 13.5 acres would be impacted by the wetland restoration/mitigation component of the Project (Table 5 and Figure 6). These impacts include:

- 0.80 acre of impacts to the following wetland/riparian vegetation communities:
  - Southern cottonwood-willow riparian forest
  - Disturbed southern willow scrub (man-made)
  - Coastal and valley freshwater marsh
  - Emergent wetland (man-made)
  - Open water

- 6.72 acres of impacts to other uplands (disturbed land)

- 168.69 acres of impacts to land cover (urban/developed)

The majority of the permanent and temporary impacts to construct the Fashion Valley Road improvements would be within the existing Fashion Valley Road limits. However, there would be permanent and temporary impacts that overlap with Town & Country restoration enhancement area off site, but the area of overlap is outside the Town & Country Site Development Permit's required mitigation area (#400602). The overlap includes permanent impacts to <0.01 acre of freshwater marsh, 0.11 acre of southern cottonwood-willow riparian forest, and 0.16 acre of urban/developed. The overlap also includes temporary impacts to 0.01 acre of freshwater marsh, 0.06 acre of open water, 0.12 acre of southern cottonwood-willow riparian forest, and <0.01 acre of urban/developed.

Approximately 8.21 acres would be impacted within the IOD for future Riverwalk Streets "J" and "U" (Table 5 and Figure 6). These impacts (assumed to be permanent herein) include:

- 1.24 acres of impacts to the following wetland/riparian vegetation communities, none of which overlap with the impacts for the Riverwalk Project:
    - Disturbed southern cottonwood-willow riparian forest
    - Southern willow scrub
    - Disturbed southern willow scrub
    - Emergent wetland
    - Open water

- 6.97 acres of impacts to land cover (urban/developed); some if which overlaps with Riverwalk Project impacts to urban/developed.

The Project would not impact any Tier I – IIIB habitats as none is present. Upland impacts are limited to non-sensitive developed/disturbed areas.

Analysis of Significance of Impacts to Vegetation Communities/Land Cover Types

Wetland/Riparian Vegetation Communities. Permanent impacts to a total of 0.16 acre of wetland/riparian vegetation communities (disturbed southern willow scrub and emergent wetland) from the mixed-use component would not be significant because the vegetation is in a constructed drainage and is not considered City Wetland. The vegetation in the constructed drainage became established and is maintained because of urban runoff. The drainage is man-made and not in an area of historic wetland; that is, this area did not support a channel or wetland species before the drainage was constructed. Given that the vegetation has become established within a constructed drainage feature, it is viewed as a developed feature rather than a naturally occurring native vegetation community. While not considered a significant impact for the City, the regulatory agencies may require permits and mitigation for impacts to this constructed drainage feature; therefore, it remains on the biological resource maps and figures in this document.

Permanent and temporary impacts to a total of 0.64 acre of wetland/riparian vegetation communities from Fashion Valley Road improvements (southern cottonwood-willow riparian forest, coastal and valley freshwater marsh; Figure 6) and open water would be significant. This includes permanent and temporary impacts that overlap with Town & Country restoration enhancement area, but the area of overlap is outside the Town & Country Site Development Permit's required mitigation area (#400602). Specifically, the overlap includes permanent impacts to <0.01 acre of freshwater marsh, and 0.11 acre of southern cottonwood-willow riparian forest, and temporary impacts to 0.01 acre of freshwater marsh, 0.06 acre of open water, and 0.12 acre of southern cottonwood-willow riparian forest. These communities and open water are considered City Wetland and also under CDFW, RWQCB, and Corps jurisdiction. These impacts would be significant; mitigation and regulatory agency permitting, as well as a deviation from ESL regulations, would be required.

Impacts (assumed herein to be permanent) to a total of 1.24 acre of wetland/riparian vegetation communities in the IOD impact area (southern willow scrub, disturbed southern willow scrub, disturbed southern cottonwood-willow riparian forest, emergent wetland, and open water) would be significant. These communities are considered City Wetland and under CDFW, RWQCB, and Corps jurisdiction. These impacts would be significant; mitigation and regulatory agency permitting, as well as a deviation from ESL regulations, would be required. Because the streets are not being built as part of this Project, a full analysis of the roadway impacts is not provided. Additional analysis will be provided as the roadway designs are refined.

Upland Vegetation Communities. Permanent impacts to Tier IV Other Uplands (i.e., disturbed land) would be less than significant.

Land Cover. Permanent impacts to urban/developed would be less than significant.

Table 5
DIRECT IMPACTS TO VEGETATION COMMUNITIES AND LAND COVER TYPES[1]

Vegetation Community/ Land Cover Type	Multi-Use	River Park	Wetland Restoration		Fashion Valley Road Improvements[2]		Riverwalk Project Total	IOD for Riverwalk Streets "J" and "U"[3]
			Wetland Mitigation	Other	Permanent	Temporary		Permanent
Wetland/Riparian								
Southern cottonwood-willow riparian forest	0.00	0.00	0.00	0.00	0.34 (0.34)	0.23 (0.23)	0.57 (0.57)	0.00
Disturbed southern cottonwood-willow riparian forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98 (0.09)
Southern willow scrub	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Disturbed southern willow scrub	0.05[4]	0.00	0.00	0.00	0.00	0.00	0.05	0.12
Coastal and valley freshwater marsh	0.00	0.00	0.00	0.00	<0.01 (<0.01)	0.01 (0.01)	0.01 (0.01)	0.00
Emergent wetland	0.11[4]	0.00	0.00	0.00	0.00	0.00	0.11	0.03
Open water	0.00	0.00	0.00	0.00	0.00	0.06 (0.06)	0.06 (0.06)	0.02
Subtotal	**0.16**	**0.00**	**0.00**	**0.00**	**0.34 (0.34)**	**0.30 (0.30)**	**0.80 (0.64)**	**1.24 (0.09)**
Other Uplands (Tier IV)								
Disturbed land	6.72	0.00	0.00	0.00	0.00	0.00	6.72	0.00
Land Cover								
Urban/Developed	91.83 (0.09)	62.69	0.81 (0.81)	12.69 (12.45)	0.64 (0.50)	0.03 (0.03)	168.69 (13.88)	6.97 (0.14)
TOTAL	**98.71 (0.09)**	**62.69**	**0.81 (0.81)**	**12.69 (12.45)**	**0.98 (0.84)**	**0.33 (0.33)**	**176.21 (14.52)**	**8.21 (0.23)**

[1]Numbers in parentheses is the acreage that is in the MHPA
[2]This includes permanent and temporary impacts that overlap with T&C enhancement area, but is outside the T&C SDP required mitigation area (#400602). The overlap includes permanent impacts to <0.01 acre of freshwater marsh, 0.11 acre of southern cottonwood-willow riparian forest, and 0.16 acre of urban/developed. The overlap also includes temporary impacts to 0.01 acre of freshwater marsh, 0.06 acre of open water, 0.12 acre of southern cottonwood-willow riparian forest, and <0.01 acre of urban/developed.
[3]IOD overlaps with urban/developed habitat impacted by the Riverwalk project. While potential impacts from the future development of the roadway IOD have been included herein, these impacts will be addressed in future environmental analyses as the roadway designs are refined.
[4]Vegetation in Drainage A established within man made (constructed) and maintained stormwater drainage feature

7.1.2 Direct Impacts to Sensitive Plant Species

No sensitive plant species have been observed on site. See Section 7.1.4 of this biological technical report for an analysis of impacts to sensitive plant species that were not observed but that have potential to occur.

7.1.3 Direct Impacts to Sensitive Animal Species

All sensitive animal species observed or detected on site utilize wetland/riparian habitats along the San Diego River channel (Figure 6). These species include:

- Cooper's hawk
- Clark's marsh wren
- Willow flycatcher
- Yellow-breasted chat
- Double-crested cormorant
- Yellow warbler
- Light-footed Ridgway's rail
- Western bluebird
- Least Bell's vireo (observed off site to the west)

Direct impacts to wetland/riparian habitats along the river channel are associated with the Fashion Valley Road improvements (refer to Section 7.1.5). The Project would avoid direct impacts to the sensitive species identified above through compliance with the MBTA and State Fish & Game Code and pre-construction and nest avoidance requirements. Furthermore, impacts to the species listed above are not anticipated otherwise for the Project because the wetland/riparian habitats along the river are avoided by the Project, and a buffer around them is provided (Figures 4 and 6). Additionally, the River Park portion of the Project includes planting of native wetland species to create native habitats adjacent to the San Diego River and the existing wetlands in the southwestern portion of the Project site, which may provide suitable habitat for these species. The native areas will not have any active park uses in them—only passive uses.

7.1.4 Direct Impacts to Sensitive Species with Potential to Occur

Appendix F summarizes the sensitive plant and animal species reported as having the potential to occur. None of the potentially occurring plant species are expected to occur or otherwise have low potential to occur because none of their habitats occur on site. Therefore, impacts to sensitive plant species are not anticipated.

Six species listed in Appendix F have moderate potential to occur on site: two-striped garter snake, Vaux's swift, southwestern willow flycatcher, least Bell's vireo, least bittern, and osprey. Vaux's swift, least Bells' vireo, and osprey were observed off site to the west (Figure 6). The wetland/riparian habitats of these species occur along the San Diego River channel and would be directly impacted by the Project at Fashion Valley Road. Therefore, these species could be significantly impacted during construction. However, as noted in Section 7.1.3 above, compliance with MBTA and State Fish & Game and pre-construction and nest avoidance requirements would reduce potential impacts to below significance. Indirect noise impacts from

construction would also be avoided as addressed in Section 7.2 of this report. Post-construction noise impacts from active park uses on sensitive species with potential to occur are not anticipated as explained in Section 6.1.4 of this report.

7.1.5 Direct Impacts to Jurisdictional Waters and Wetlands

A total of 0.64 acre of jurisdictional wetlands would be permanently and temporarily impacted by Fashion Valley Road improvements in Drainage B (including 0.30 acre within the adjacent Town & Country project site to the east); and 1.24 acre of jurisdictional wetlands would be impacted in the IOD impact area for future Riverwalk Streets "J" and "U" in Drainages B and C (permanent impacts assumed herein for these streets). Because the streets are not being built as part of this Project, however, a full analysis of the roadway impacts is not provided. Additional analysis will be provided in a future environmental document as the street designs are refined. More specifically:

The Project (i.e., multi-use, River Park, wetland restoration, and Fashion Valley Road improvements; Table 6) would directly impact:

- 0.41 acre of wetland Waters of the U.S. along Drainage B,
- 0.64 acre of wetland Waters of the State along Drainage B, and
- 0.64 acre of City Wetlands along Drainage B.

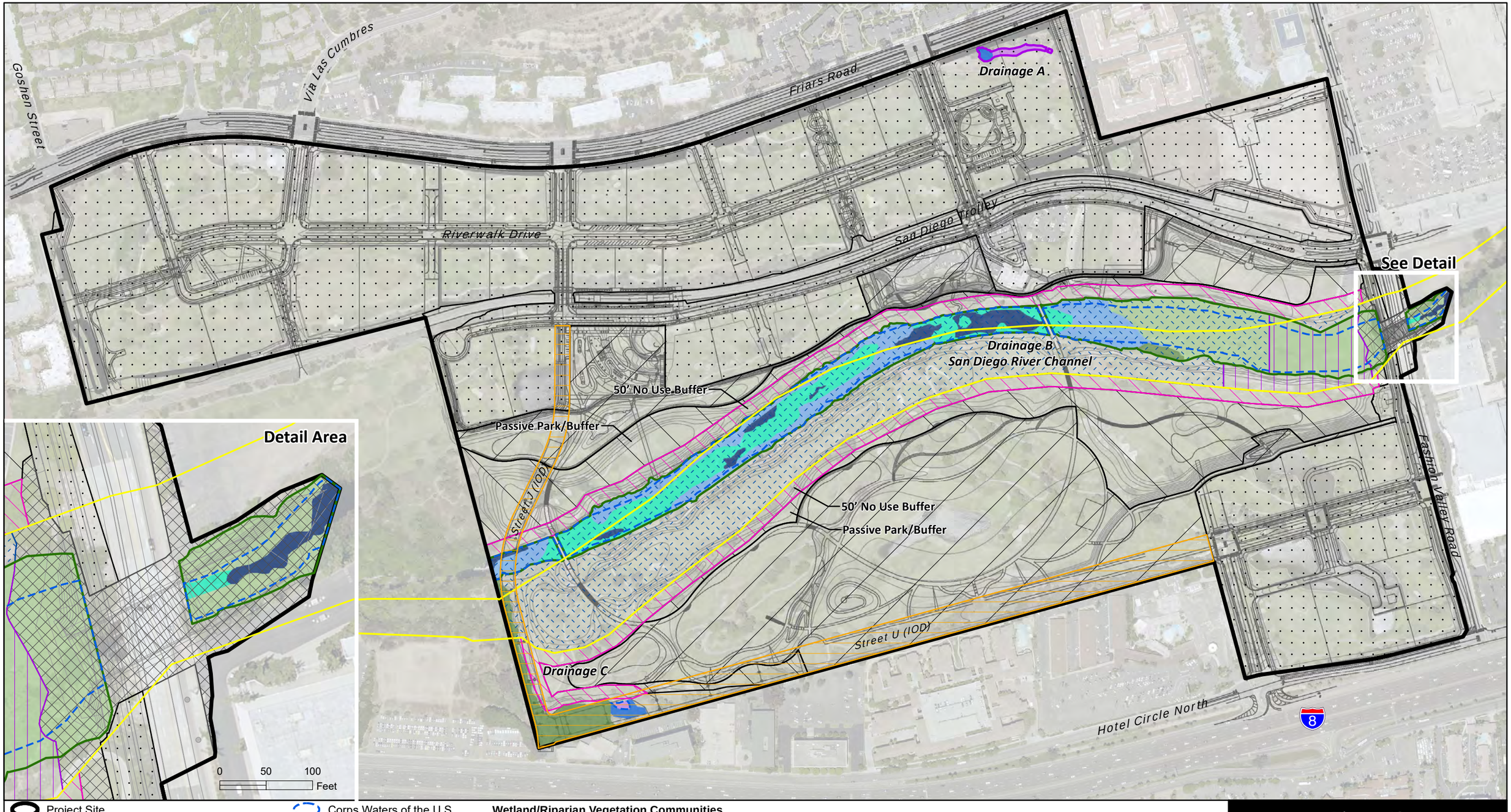
There would be no impacts to jurisdictional waters and wetlands from the park grading or wetland restoration since they would occur in what is presently golf course. Expansion of the river channel would involve removal of all of the golf course facilities, and the habitat creation area would be graded to create an expanded channel area that is at an elevation within 2 – 4 feet of the existing channel bottom. This grading would occur adjacent to the existing channel but would not breach the channel or encroach upon any of the existing wetland habitat.

Approximately 1.24 acres would be directly impacted within the IOD for future Riverwalk Streets "J" and "U" (these impacts do not overlap with Riverwalk Project impacts to jurisdictional waters and wetland). The impacts include:

- 0.11 acre of wetland Waters of the U.S. along Drainage B,
- 0.03 acre of wetland Waters of the U.S. along Drainage C,
- 0.11 acre of wetland Waters of the State along Drainage B,
- 1.13 acres of wetland Waters of the State along Drainage C,
- 0.11 acre of City Wetlands along Drainage B, and
- 1.13 acres of City Wetlands along Drainage C.

Table 6 presents a breakdown of the acreages of impact to Waters of the U.S., Waters of the State, and City Wetlands. Figure 10 shows the impacts to the jurisdictional waters and wetlands. Impacts to Waters of the U.S. and Waters of the State would require permitting from the Corps, CDFW, and Regional Board.

The impacts to City Wetlands from Fashion Valley Road improvements (0.64 acre of coastal and valley freshwater marsh, southern cottonwood-willow riparian forest, and open water; Table 6) and the IOD (1.24 acres) are considered unavoidable. Unavoidable impacts include those necessary to allow reasonable use of a parcel entirely constrained by wetlands, roads where the only access to the developable portion of a site results in impacts to wetlands, and essential public facilities (essential roads such as Fashion Valley Road, Riverwalk Street "J", sewer, water lines, etc.) where no feasible alternative exists. This is discussed further in Section 7.1.6, *Deviation from Wetland Regulations*.



- Project Site
- Riverwalk Project Development
- Fashion Valley Road Improvements[1]
- River Park - Active Park
- River Park - Passive Park
- Project Mitigation Area – Wetland Restoration
- Future Mitigation Bank – Wetland Restoration
- 50' No Use Buffer
- MHPA
- City Roadway IOD
- Corps Waters of the U.S.
- CDFW/RWQCB/City Wetland
- RWQCB Wetland

Wetland/Riparian Vegetation Communities

- Southern Cottonwood-Willow Riparian Forest
- Disturbed Southern Cottonwood-Willow Riparian Forest
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Open Water

[1] Includes temporary impact area during construction.

N W E S

0 175 350 Feet

ALDEN ENVIRONMENTAL, INC

Figure 10

Jurisdictional Areas/Impacts

RIVERWALK PROJECT

Table 6
IMPACTS TO JURISDICTIONAL WATERS AND WETLANDS

Feature	Wetland WUS			Wetland WS			City Wetlands		
	Project		IOD	Project		IOD	Project		IOD
	Permanent	Temporary[1]	Permanent[2]	Permanent	Temporary[1]	Permanent[2]	Permanent	Temporary[1]	Permanent[2]
Drainage A[3]									
Emergent wetland[3]	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	0.00
Disturbed southern willow scrub[3]	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	0.00
Drainage B – San Diego River Channel									
Coastal and valley freshwater marsh	<0.01	0.01	0.00	<0.01	0.01	0.00	<0.01	0.01	0.00
Southern willow scrub	0.00	0.00	0.09	0.00	0.00	0.09	0.00	0.00	0.09
Southern cottonwood-willow riparian forest	0.17	0.17	0.00	0.34	0.23	0.00	0.34	0.23	0.00
Disturbed southern cottonwood-willow riparian forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Open water	0.00	0.06	0.02	0.00	0.06	0.02	0.00	0.06	0.02
Drainage C									
Emergent wetland	0.00	0.00	0.03	0.00	0.00	0.03	0.00	0.00	0.03
Disturbed southern cottonwood-willow riparian forest	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00	0.98
Disturbed southern willow scrub	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.12
TOTAL	**0.17**	**0.24**	**0.14**	**0.34**	**0.30**	**1.24**	**0.34**	**0.30**	**1.24**

[1]Temporary impacts are associated with the Fashion Valley Road improvements
[2]All impacts within the IOD are assumed to be permanent, and none overlaps with Riverwalk Project impacts. While potential impacts from the future development of the roadway IOD have been included herein, these impacts will be addressed in future environmental analyses as the roadway designs are refined.
3Vegetation in Drainage A established within man made (constructed) and maintained stormwater drainage feature

Analysis of Significance of Impacts to Jurisdictional Waters and Wetlands

Impacts to Waters of the U.S. and State would be significant by having an adverse effect on wetlands. Mitigation would be required. Impacts City Wetlands would be significant; mitigation and a deviation from ESL regulations would be required.

7.1.6 Deviation from Wetland Regulations

The City Biology Guidelines (2018) and the ESL Regulations state that impacts to wetlands should be avoided, and unavoidable impacts should be minimized to the maximum extent practicable. A wetland buffer shall be maintained around all wetlands as appropriate to protect the functions and values of the wetland.

Impacts to City Wetlands from Fashion Valley Road improvements would require a deviation from the City's ESL wetland regulations. Because Drainage A has been determined not to be a City Wetland, a wetland deviation for the mixed-use component of the Project is not required. Deviations from the wetland regulations shall not be granted unless the development qualifies to be processed as one of these three options: Essential Public Projects Option, Economic Viability Option, and Biologically Superior Option.

The Fashion Valley Road construction qualifies for a deviation under the EPP Option because it meets all of the following criteria:

- *The project must be an EPP (i.e., circulation element road, trunk sewer, water main) that will service the community at large and not just a single development project or property.*

  Fashion Valley Road connects Friars Road in the north with Hotel Circle North in the south, providing a crossing of the San Diego River, and it provides access to Fashion Valley Mall and Fashion Valley Transit Center to the east, as well as access to the Project site to the west. Therefore, improvements to Fashion Valley Road as part of the Project would serve the community at large and not just the Project. Fashion Valley Road is a 4-lane major arterial roadway, and the Mission Valley Community Plan adopted September 2019 proposes widening the road, which accounts for the majority of the impact.

- *The proposed project and all biological alternatives, both practicable and impracticable shall be fully described and analyzed in an appropriate CEQA document. Alternatives to the proposed project shall be comprehensively included in the CEQA document (e.g., Mitigated Negative Declaration) and/or the biological technical report for the CEQA document. Alternatives must include the following: 1) a no project alternative; 2) a wetlands avoidance alternative, including an analysis of alternative sites irrespective of ownership; and 3) an appropriate range of substantive wetland impact minimization alternatives. Public review of the environmental document must occur pursuant to the provisions of CEQA.*

No Project Alternative

A no project alternative would result in no improvements to the Fashion Valley Road crossing of the river and would allow continued flooding of the roadway and areas upstream during heavy or prolonged rainfall events. Upstream flooding could result in soil erosion, removal of habitat, and wildlife displacement and/mortality. Improvements to the roadway, coupled with the park grading for flood control purposes on site, would allow for better flows through the site avoiding the potential adverse effects of upstream flooding. Therefore, a no project alternative is considered impracticable.

Wetlands Avoidance Alternatives

Since Fashion Valley Road is the only existing roadway that crosses the river in the immediate vicinity, no alternative site exists for improvements to a roadway crossing of the San Diego River that would alleviate the flooding impacts to the roadway and immediate environs. Therefore, there is no other location suitable for the crossing.

Impacts to 0.64 acre (0.30 acre of temporary and 0.34 acre of permanent) of City Wetlands would occur with the proposed Con/Span improvements to the low water crossing of the San Diego River at Fashion Valley Road. Avoidance of wetland impacts would be possible with a spanned bridge; however, a spanned bridge solution would require significantly raising the entire profile of the roadway, which is not feasible due to adjacent property constraints (MTS trolley track and station).

Wetland Impact Minimization Alternatives

A traditional river crossing for Fashion Valley Road would involve in-channel structural supports/culverts and would not allow for an open span of the river, nor would a soft channel bottom be left underneath. This traditional river crossing alternative would be expected to have the greatest permanent wetland impacts of all alternatives considered.

Wetland impacts would be minimized by a large Con/Span arch for Fashion Valley Road improvements. However, construction of that alternative would require a much larger footprint (than the proposed Con/Span arch; see below) with deeper supports, more temporary and permanent wetland impacts, and only a marginal increase in the soft bottom channel with essentially the same flood conveyance properties over the proposed Con/Span arch.

Therefore, the proposed Con/Span arch solution presents the best way to meet flood conveyance goals, minimize impacts to wetlands, and meet street operations needs for Fashion Valley Road. The proposed Con/Span arch solution would replace the existing pipe culverts and would have the least wetland impacts of all the alternatives considered. The arch footing is buried beneath and adjacent to the roadway, and the channel is not concrete-lined but left with a soft bottom.

The proposed grading for the Con/Span is needed to ensure the integrity of the arch structure and to protect adjacent properties should there be a major flood. Sufficient cleared work space is needed for excavation and diverting the river so the contractor can get in and get out as quickly as possible in order to minimize potential construction and flooding issues, as well as time spent working in the river (estimated to be approximately seven months).

Temporary construction impacts to City Wetlands from the proposed Con/Span arch would be 0.30 acre (Table 5). The arch would be buried below ground, and would not be identifiable a few years after construction due to revegetation with natives. Permanent impacts (0.34 acre; Table 5) would occur from retaining walls that could have buried footings and/or piles similar to the arch. It should be noted that no distinction is made between permanent and temporary impacts; mitigation for these impacts will be provided at the same ratio. This is described in greater detail in Section 8.1.1, *Mitigation for Direct Impacts to Wetland/Riparian Vegetation Communities*.

A portion of these impacts (approximately 0.46 acre) overlap with the adjacent Town & Country Project's additional habitat restoration area outside of its Site Development Permit (#400602) required mitigation area shown on Figure 5 of the Town & Country Project Biological Technical Report (AECOM Technical Services 2017, Appendix E to the Town & County Project Environmental Impact Report [City 2017]). Therefore, the Riverwalk Project is not required to increase its mitigation for the overlapping impacts since it does not impact another project's mitigation. The overlapping impacts include permanent impacts to <0.01 acre of freshwater marsh, 0.11 acre of southern cottonwood-willow riparian forest, and 0.16 acre of urban/developed and temporary impacts to 0.01 acre of freshwater marsh, 0.06 acre of open water, 0.12 acre of southern cottonwood-willow riparian forest, and <0.01 acre of urban/developed.

- *The potential impacts to wetland resources shall be minimized to the maximum extent practicable and the project shall be the least environmentally damaging practicable biological alternative considering all the technical constraints of the project (e.g., roadway geometry, slope stability, geotechnical hazards, etc.). Recognizing the wetland resources involved, minimization to the maximum extent practicable may include, but is not limited to, adequate buffers and/or designs that maintain full hydrologic function and wildlife movement (e.g., pipeline tunneling, bridging, Arizona crossings, arch culverts). The project applicant will solicit input from the U.S. Fish and Wildlife Service and the California Department of Fish and Game (e.g., Wildlife Agencies) prior to the first public hearing.*

  As previously discussed, the Con/Span arch is a pre-fabricated structure that would minimize impacts associated with construction by having an overall footprint that is less than a traditionally constructed in-place bridge or larger Con/Span arch. Also, a constructed in-place feature would require central supports and would not be a truly open span like a Con/Span arch. Different Con/Span options were evaluated, and the one proposed for use is the least impactful that would serve the Fashion Valley Road improvements needs. The Con/Span arch would solve current roadway flooding issues, and because the existing pipe culverts would be removed and it would span the river channel, the new roadway river crossing would improve wildlife movement in the river corridor.

- *All impacts shall be mitigated according to the requirements of Table 2a and the project shall not have a significant adverse impact to the MSCP.*

  The Project will comply with these requirements for improvements to Fashion Valley Road (including the area of overlap with Town & Country restoration enhancement area outside the Site Development Permit #400602 required mitigation area).

Specifically, mitigation will be provided according to the requirements of Table 2a, and because the City does not distinguish between permanent and temporary impacts, all impacts to wetlands will be mitigated as permanent impacts as shown in Table 7 in Section 8.1.1, *Mitigation for Direct Impacts to Wetland/Riparian Vegetation Communities.* The Town & Country restoration enhancement, which the Fashion Valley Road improvements would impact, is outside of Town & Country Site Development Permit's required mitigation area (#400602). Therefore, the mitigation provided for the impacts in this area from the Fashion Valley Road improvements meet the requirements of Table 2a, and the Riverwalk Project is not required to increase its mitigation for the overlapping impacts.

7.1.7 Multi-habitat Planning Area

Besides the Fashion Valley Road improvements and future Riverwalk Street "J" (see Table 5), habitat restoration (creation and enhancement) is the only activity proposed within the existing MHPA area. Habitat restoration includes initial removal of golf course facilities, grading, weed/trash removal, and habitat installation. Grading for expansion of the river channel would achieve an elevation within 2 – 4 feet of the existing channel bottom. This grading would occur adjacent to the existing channel but would not breach the channel or encroach upon any of the existing wetland habitat.

The MHPA within the restoration area is shown on Figure 9 and described in the mitigation/restoration plans (Appendices A-1 and A-2). This activity is a requirement of MSCP guideline B15 and is, therefore, an allowable activity. As the habitat restoration would not impact any sensitive resources there would be no significant impacts associated with this work. Sensitive species in habitat in the MHPA adjacent to the habitat restoration could, however, be adversely affected by noise. Project compliance with the MHPA Land Use Adjacency Guideline for Noise (see Section 6.1.4 of this report) as well as mitigation (see Section 8.1.4 of this report) would reduce the potential impact to below a level of significant, however.

7.2 INDIRECT IMPACTS

The following sections describe indirect impacts from the Project. Potential indirect impacts from the future development of the roadway IOD will be addressed in future environmental analyses as the roadway designs are refined.

Fugitive Dust

Fugitive dust produced by construction could disperse onto adjacent native vegetation (inside and outside the MHPA). A continual cover of dust may reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. This, in turn, could affect animals dependent on these plants (e.g., seed-eating rodents). Fugitive dust also may make plants unsuitable as habitat for insects and birds. Construction of the Project would include the use of dust control measures required in SDMC Section 142.0101 et seq. These measures could include, for example, reduced driving speeds on unpaved roads and regular watering of dirt surfaces. Therefore, Project construction would result in less-than-significant impacts.

Noise

Noise-related impacts would be considered significant if species sensitive to noise are present in the MHPA.

Potentially significant noise impacts would occur if the least Bell's vireo and/or southwestern willow flycatcher and/or light-footed Ridgway's rail are present, construction occurs during the period March 15 through September 15 (May 1 and September 1 for the flycatcher), and construction noise levels exceed 60 decibels dB(A) hourly average (or to the ambient noise level if it already exceeds 60 dB (A) hourly average) at the edge of occupied habitat. Specific avoidance measures for the light-footed Ridgeway's rail have been included in the project description (Section 1.2) and will be conditions of approval for the project. Compliance with the MHPA Land Use Adjacency Guideline for Noise is required (see Section 6.1.4 of this report) as well as mitigation (see Section 8.1.4 of this report) to reduce the potential noise levels to less than significant levels.

The Project's park land will be developed under the San Diego River Park Master Plan. Uses within the river park, which will be a dawn-to-dusk facility that would not generate noise from dusk to dawn, would include such facilities as sports fields, picnic areas, playgrounds, fenced dog parks, water features, a ranger station, a recreation center, amphitheater restroom facilities, parking, and walking/jogging/biking paths and trails. The active park uses (ball fields, etc.) are located on the far north and south ends of the park, away from the river channel and the MHPA. Uses nearer to the channel and partially within the MHPA would be passive in nature and would include walking/hiking trails and nature observation nodes with educational kiosks. Table 4 presented the different active park uses and their noise levels relative to the MHPA. Due to the distances between those park uses and species sensitive to noise in the MHPA, noise impacts from the operational Project would be less than significant.

Avian Collisions

According to the USFWS (2016):

> Glass reflectivity and transparency create a lethal illusion of clear airspace that birds do not see as a barrier. During the daytime, birds collide with windows because they see reflections of the landscape in the glass (e.g., clouds, sky, vegetation, or the ground); or they see through glass to perceived habitat (including potted plants or vegetation inside buildings) or to the sky on the other side…The majority of collisions with both residential and urban buildings happen during the day, as birds fly around looking for food… avian mortalities at night more frequently occur at communication towers, offshore drilling platforms and in other situations where there is a bright light source in a dark area, especially during inclement weather.

To the extent practicable, the Project will incorporate architectural design (windows/glass) and landscaping that is consistent with American Bird Conservancy Bird-Friendly Design (Sheppard and Phillips 2015) to minimize the potential for avian collisions with windows/glass and landscaping associated with the Project and to reduce the potential impact to a less-than-significant level.

7.3 CUMULATIVE IMPACTS

The MSCP was designed to compensate for the cumulative loss of biological resources throughout the San Diego region. Projects that conform to the MSCP as specified by the City's Subarea Plan and implementing ordinances, (i.e., Biology Guidelines and ESL Regulations) are not expected to result in a significant cumulative impact for those biological resources adequately covered by the MSCP. These resources include the vegetation communities identified as Tier I through IV and MSCP Covered Species (City 2018).

The Project would comply with the City's Subarea Plan by conforming to the MHPA Land Use Adjacency Guidelines and any Area Specific Management Directives for Covered Species and by mitigating for significant impacts in accordance with ESL Regulations and the City's Biology Guidelines (see Section 8.0 of this biological technical report). Other projects in the City would also be required to comply with the City's Subarea Plan. Therefore, the Project would not contribute considerably to cumulatively significant impacts on sensitive biological resources in the City, and no mitigation for cumulative impacts would be required.

The Project would not contribute to the cumulative loss of wetlands because it would: 1) preserve/enhance existing wetlands in the river channel; 2) mitigate Project impacts through on-site creation of wetlands at a 3:1 ratio (including those impacts that overlap with the Town & Country Project additional habitat restoration area); and 3) create additional acreage of wetland habitat for a mitigation bank.

The roadway IOD's contribution to cumulatively significant impacts will be addressed in future environmental analyses as the roadway designs are refined.

8.0 MITIGATION PROGRAM

City of San Diego Biology Guidelines require a Mitigation Program that consists of three elements: (1) Mitigation Element; (2) Protection and Notice Element; and (3) Management Element.

8.1 MITIGATION ELEMENT

The following mitigation measures have been formulated to satisfy the requirements of the City's MSCP Subarea Plan, ESL Regulations, and Biology Guidelines.

8.1.1 Mitigation for Direct Impacts to Wetland/Riparian Vegetation Communities

Fashion Valley Road Improvements Mitigation

Mitigation would be provided for impacts to wetland/riparian vegetation and open water (City wetlands) from Fashion Valley Road improvements as shown in Table 7. The Project would significantly impact a total of 0.64 acre of wetland/riparian vegetation (0.01 acre of coastal and valley freshwater marsh, 0.57 acre of southern cottonwood-willow riparian forest) and 0.06 acre of open water that are City wetlands (Figures 9 and 10). Mitigation for impacts to City wetlands would occur at a 3:1 ratio in accordance with Table 2a of the Biology Guidelines because the road improvements are an EPP. Therefore, 1.92 acres of mitigation would be required for

impacts to 0.64 acre of City wetlands. The mitigation for open water impacts would occur through restoration of freshwater marsh habitat. Open water is less of a wetland vegetation community and more of a water feature that can act as an impediment in the San Diego River, disrupting water flow and segmenting native habitat (City 2013). Open water requires deeper areas that would pond water year-round and likely be dependent upon groundwater at least during a portion of the year. Water ponding and reduced flows can increase water temperature, promote algae and macrophyte growth, deplete oxygen, and have a deleterious effect upon riparian habitats and the organisms that depend up on them. Additionally, the open water ponds an increase sedimentation and reduce downstream transport of sediment load.

Rather than grade the wetland mitigation area deep enough to breach the groundwater table to create open water ponds, the proposed freshwater marsh would occur in a relatively shallow area that would be subject to periodic inundation and contribute to the overall mosaic of native habitats to be restored on site.

The impacts are proposed to be mitigated through creation of 0.21 acre of freshwater marsh, 0.57 acre of southern cottonwood-willow riparian forest, and enhancement of 1.14 acres of southern cottonwood-willow riparian forest in the Riverwalk Project Wetland Mitigation area. The creation component would be at least at a 1:1 ratio to ensure that there would be no net loss of wetlands on site.

The identified mitigation area also includes an additional 0.53 acre of creation (0.38 acre) and enhancement (0.15 acre) to meet additional mitigation requirements anticipated to be required by the regulatory agencies.

Additionally, the 0.30-acre of temporary impact area at the Fashion Valley Road crossing also would be restored to native habitat; however, no mitigation credit is being applied to this restoration. That is, the restoration of temporarily impacted areas is not counted as part of the Project's mitigation. Instead, all impacts due to the Fashion Valley Road improvements would be met as described above, and the restoration of temporarily impacted area is above and beyond the mitigation requirement.

The Riverwalk Project Wetland Mitigation area (Figure 9) is suitable for the wetland habitat creation and enhancement. because of the presence of appropriate soils, topography, and existing wetland/riparian features. Additionally, the adjacent golf course areas are within the historic limits of the San Diego River and support suitable soils, topography, and landscape features for successful expansion (creation) of native wetland/riparian habitat. Site suitability is further described in Section 3.3 of the mitigation/restoration plans for the Project provided in Appendices A-1 and A-2. While Appendix A-1 provides the restoration plan for the Project's mitigation, federal or State permitting may require alterations to the proposed mitigation.

A Wetland Mitigation Habitat Management Plan (HMP) has been prepared to direct long-term management of the wetland habitat mitigation area for the Riverwalk Project and addresses applicable management guidelines for the MHPA (Appendix H).

Though not mitigation, the Wetland Restoration Plan (Appendix A-2) similarly describes proposed wetland habitat restoration to comply with Guideline B15 in the City's MSCP Subarea Plan, in addition to the Project's mitigation requirements identified above. To accommodate the B15 requirement, the plan recommends measures to expand existing wetland/riparian features within and adjacent to the existing San Diego River channel. The overall restoration includes 11.54 acres of wetland habitat enhancement, 13.32 acres of creation, as well as 0.30 acre of restoration of habitat temporarily impacted by the Fashion Valley Road improvements. Proposed wetland restoration and enhancement acreage exceeds what is required for Project mitigation, with the surplus area intended to serve as a future wetland habitat mitigation bank. While on-site mitigation bank use is disclosed in this report, the permitting and approvals for the mitigation bank are not included as part of the current proposed Project. An additional effort will be required to obtain mitigation banking approvals in the future.

Finally, should the mitigation bank become established prior to impacts at Fashion Valley Road then, bank credits could be used for mitigation, as opposed to the standalone mitigation effort identified above. In this event, the HMP (Appendix H) would be superseded by the requirements in the mitigation banking agreement, permits, and approvals.

IOD Mitigation

Future construction of Riverwalk Streets "J" and "U" in the IOD impact area would have significant permanent impacts to 1.24 acres wetland/riparian vegetation and open water (Table 5), based on current mapping and site conditions. A future environmental review including impact analysis, determination of mitigation requirements, and agency permitting will be required at such time as the City (or other entity) chooses to pursue construction of Streets "J" and "U". Final permitting requirements and mitigation obligations will be determined through this future permitting process.

Table 7
IMPACTS TO VEGETATION COMMUNITIES
AND LAND COVER TYPES AND REQUIRED MITIGATION FOR THE RIVERWALK PROJECT[1]

Vegetation Community/ Land Cover Type	Multi-use Impacts	River Park and Wetland Restoration Impacts	Fashion Valley Road Improvements[2]	Total Impacts	Mitigation Ratio[3]	Mitigation Required
Wetland/Riparian						
Southern cottonwood-willow riparian forest	0.00	0.00	0.57 (0.57)	0.57 (0.57)	3:1	1.71
Disturbed southern cottonwood-willow riparian forest	0.00	0.00	0.00	0.00	3:1	0.00
Southern willow scrub	0.00	0.00	0.00	0.00	3:1	0.00
Disturbed southern willow scrub	0.05	0.00	0.00	0.05	3:1	0.00[4]
Coastal and valley freshwater marsh	0.00	0.00	0.01 (0.01)	0.01 (0.01)	3:1	0.03
Emergent wetland	0.11	0.00	0.00	0.11	3:1	0.00[4]
Open water	0.00	0.00	0.06 (0.06)	0.06 (0.06)	3:1	0.18
Subtotal	0.16	0.00	0.64 (0.64)	0.80 (0.64)	--	1.92
Other Uplands (Tier IV)						
Disturbed land	6.72	0.00	0.00	6.72	0:1	0.00
Land Cover						
Urban/Developed	91.83 (0.09)	76.19 (13.26)	0.67 (0.53)	168.69 (13.88)	0:1	0.00
TOTAL	**98.71 (0.09)**	**76.19 (13.26)**	**1.31 (1.17)**	**176.21 (14.52)**	**--**	**1.92**

[1]Impacts and mitigation in acres. Number in parentheses is the acreage that is in the MHPA. Impacts include those that are temporary and permanent.
[2]The Town & Country restoration enhancement, which the Fashion Valley Road improvements would impact, is outside Town & Country Site Development Permit #400602. Therefore, the mitigation provided in Table 7 for the impacts in this area from the Fashion Valley Road improvements meets the requirements of Table 2a of the Biology Guidelines.
[3]Mitigation for wetland/riparian impacts is proposed to occur at a 3:1 ratio in accordance with Table 2a of the Biology Guidelines because the road improvements are an EPP.
[4]Mitigation has not been provided for this impact because, although the drainage within which it occurs (Drainage A) supports wetland plant species characteristic of this vegetation community, the drainage is man-made in a historically non-wetland area, and the vegetation became established and is maintained because of urban runoff.

8.1.2 Mitigation for Impacts to Sensitive Species

Six sensitive species have moderate potential to occur and be impacted in the Fashion Valley Road improvements area: two-striped garter snake, Vaux's swift, southwestern willow flycatcher, least Bell's vireo, least bittern, and osprey (Appendix F). The light-footed Ridgway's rail was observed on site (Figure 6) and has potential to occur and be impacted as well; however, impacts to this species must be, and would be, completely avoided as described in Section 1.2, *Project Description*, and through compliance with the Land Use Adjacency Guidelines.

Mitigation for impacts to sensitive species will be accomplished through habitat-based mitigation for wetland/riparian habitat impacts described in Section 8.1.1 of this report as well as measures to provide avian protection noted in Section 8.1.3 of this report.

8.1.3 Biological Resource Protection During Construction

I. Prior to Construction

A. **Biologist Verification:** The owner/permittee shall provide a letter to the City's Mitigation Monitoring Coordination section stating that a Project Biologist (Qualified Biologist), as defined in the City of San Diego's Biological Guidelines (2018), has been retained to implement the Project's biological monitoring program. The letter shall include the names and contact information of all persons involved in the biological monitoring of the project.

B. **Pre-construction Meeting:** The Qualified Biologist shall attend a pre-construction meeting, discuss the Project's biological monitoring program, and arrange to perform any follow up mitigation measures and reporting including site-specific monitoring, restoration or revegetation, and additional fauna surveys.

C. **Biological Documents:** The Qualified Biologist shall submit all required documentation to Mitigation Monitoring Coordination verifying that any special mitigation reports including but not limited to, maps, plans, surveys, survey timelines, or buffers are completed or scheduled per City Biology Guidelines, MSCP, ESL Ordinance, project permit conditions; CEQA; endangered species acts; and/or other local, State or federal requirements.

D. **Biological Construction Mitigation/Monitoring Exhibit:** The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit which includes the biological documents in C, above. In addition, include: restoration/revegetation plans, avian or other wildlife surveys/survey schedules (including general avian nesting and USFWS protocol), timing of surveys, wetland buffers, avian construction avoidance areas/noise buffers/ barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City Assistant Deputy Director/Mitigation Monitoring Coordination. The Biological Construction Mitigation/Monitoring Exhibit shall include a site plan, written and graphic depiction of the project's biological mitigation/monitoring program, and a schedule. The Biological Construction Mitigation/Monitoring Exhibit shall be approved by Mitigation Monitoring Coordination and referenced in the construction documents.

E. **Avian Protection Requirements:** To avoid any direct impacts to Clark's marsh wren, Cooper's hawk, double-crested cormorant, yellow warbler, yellow breasted chat, and western bluebird observed on site and with potential to nest there, as well as MSCP-covered least Bell's vireo and southwestern willow flycatcher, Vaux's swift, least bittern, and osprey with moderate potential to be present and nest on site, removal of habitat that supports active nests in the proposed area of disturbance should occur outside of the breeding season for these species (February 1 to September 15). If removal of habitat in the proposed area of disturbance must occur during the breeding season, the Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The applicant shall submit the results of the pre-construction survey to City DSD and the Wildlife Agencies for review and approval prior to initiating any construction activities. If nesting Clark's marsh wren, Cooper's hawk, double-crested cormorant, yellow warbler, yellow breasted chat, western bluebird, least Bell's vireo, southwestern willow flycatcher, Vaux's swift, least bittern, or osprey is detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines and applicable State and Federal Law (i.e. appropriate follow up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report or mitigation plan shall be submitted to the City and Wildlife Agencies for review and approval and implemented to their satisfaction. The City's MMC Section and Biologist shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

F. **Resource Delineation:** Prior to construction activities including the erection of any permanent fencing, the Qualified Biologist shall supervise the placement of silt and orange construction fencing or equivalent along the limits of disturbance and verify compliance with any other project conditions as shown on the Biological Construction Mitigation/Monitoring Exhibit. This phase shall include delimiting buffers to protect sensitive biological resources (e.g., habitats and fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.

G. **Education:** Prior to commencement of construction activities, the Qualified Biologist shall meet with the owner/permittee or designee and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside of the approved construction area and to protect sensitive fauna (e.g., explain the avian and wetland buffers and clarify acceptable access routes/methods and staging areas, etc.).

II. During Construction

A. **Monitoring:** All construction (including access/staging areas) shall be restricted to areas previously identified, proposed for development/staging, or previously disturbed as shown on "Exhibit A" and/or the Biological Construction Mitigation/Monitoring Exhibit. No parking or other construction/development-related material/activities shall be allowed outside any approved construction limits. The Qualified Biologist shall monitor construction activities as needed to ensure that construction activities do not encroach into biologically sensitive areas, or cause other similar damage, and that the work plan has been amended to accommodate any sensitive species located during the pre-construction surveys. In addition, the Qualified Biologist shall document field activity via the Consultant Site Visit Record. The Consultant Site Visit Record shall be e-mailed to Mitigation Monitoring Coordination on the 1st day of monitoring, the 1st week of each month, the last day of monitoring, and immediately in the case of any undocumented condition or discovery.

B. **Subsequent Resource Identification:** The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna on site (e.g., flag habitat for avoidance during access, etc.). If active nests or other previously unknown sensitive resources are detected, all Project activities that directly impact the resource shall be delayed until species specific local, State or federal regulations have been determined and applied by the Qualified Biologist.

III. Post Construction

A. In the event that impacts exceed previously allowed amounts, additional impacts shall be mitigated in accordance with City Biology Guidelines, ESL Ordinance and MSCP, CEQA, and other applicable local, State and federal laws. The Qualified Biologist shall submit a final Biological Construction Mitigation/Monitoring Exhibit /report to the satisfaction of the City Assistant Deputy Director /Mitigation Monitoring Coordination within 30 days of construction completion.

8.1.4 Mitigation for Indirect Impacts

The MHPA Land Use Adjacency Guidelines would become conditions of Project approval. The following mitigation measures remain, however, to minimize potential noise impacts to the least Bell's vireo (present) and southwestern willow flycatcher (moderate potential to occur) to below a level of significance.

Least Bell's Vireo (State Endangered/Federally Endangered)

Prior to the issuance of any grading permit (for public utility projects: prior to the preconstruction meeting), the City Manager (or appointed designee) shall verify that the following project requirements regarding the least Bell's vireo are shown on the construction plans:

No clearing, grubbing, grading, or other construction activities shall occur between March 15 and September 15, the breeding season of the least bell's vireo, until the following requirements have been met to the satisfaction of the City manager and Wildlife Agencies:

A. A qualified biologist (possessing a valid endangered species act section 10(a)(1)(a) recovery permit) shall survey those wetland areas that would be subject to construction noise levels exceeding 60 decibels dB(A) hourly average for the presence of the least bell's vireo. Surveys for this species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service within the breeding season prior to the commencement of construction. If the least bell's vireo is present, then the following conditions must be met:

- Between March 15 and September 15, no clearing, grubbing, or grading of occupied least bell's vireo habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; and
- Between March 15 and September 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) hourly average at the edge of occupied least bell's vireo habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) hourly average at the edge of occupied habitat must be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the city manager at least two weeks prior to the commencement of construction activities. Prior to the commencement of any of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; or
- At least two weeks prior to the commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) hourly average at the edge of habitat occupied by the least bell's vireo. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16).

* Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB (A) hourly average or to the ambient noise level if it already exceeds 60 dB (A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to

below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

B. If least Bell's vireo is not detected during the protocol survey, the qualified biologist shall submit substantial evidence to the city manager and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 15 and September 15 as follows:

I. If this evidence indicates the potential is high for least bell's vireo to be present based on historical records or site conditions, then condition a.iii shall be adhered to as specified above.

II. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

Southwestern Willow Flycatcher (Federally Endangered)

Prior to the issuance of any grading permit (for public utility projects: prior to the preconstruction meeting), the City Manager (or appointed designee) shall verify that the following project requirements regarding the southwestern willow flycatcher are shown on the construction plans:

No clearing, grubbing, grading, or other construction activities shall occur between May 1 and September 1, the breeding season of the southwestern willow flycatcher, until the following requirements have been met to the satisfaction of the City manager and Wildlife Agencies:

A. A qualified biologist (possessing a valid endangered species act section 10(a)(1)(a) recovery permit) shall survey those wetland areas that would be subject to construction noise levels exceeding 60 decibels [dB(A)] hourly average for the presence of the southwestern willow flycatcher. Surveys for this species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service within the breeding season prior to the commencement of any construction. If the southwestern willow flycatcher is present, then the following conditions must be met:

- Between May 1 and September 1, no clearing, grubbing, or grading of occupied southwestern willow flycatcher habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; and

- Between May 1 and September 1, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) hourly average at the edge of occupied southwestern willow flycatcher habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) hourly average at the edge of occupied habitat must be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the city manager at least two weeks prior to the

commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; or

- At least two weeks prior to the commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) hourly average at the edge of habitat occupied by the southwestern willow flycatcher. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 1).

* Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB (A) hourly average or to the ambient noise level if it already exceeds 60 dB (A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

B. If southwestern willow flycatcher is not detected during the protocol survey, the qualified biologist shall submit substantial evidence to the city manager and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between May 1 and September 1 as follows:

I. If this evidence indicates the potential is high for southwestern willow flycatcher to be present based on historical records or site conditions, then condition a.iii shall be adhered to as specified above.

II. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

8.2 PROTECTION AND NOTICE ELEMENT

The Applicant may dedicate the MHPA lands on site to the City in fee title after the habitat restoration for Project mitigation and the B15 compliance effort (Figure 9) are successfully completed, unless transferred over to a mitigation banking entity or other approved land management entity. There also may be more than one entity responsible for long-term management of the on-site restoration/mitigation areas. For example, the City or an approved management entity may be responsible for the management of the Project-specific habitat mitigation area, while a separate mitigation banking entity may be responsible for the area of the potential, future mitigation bank (once established). There also may be more than one entity

responsible for long-term management of the on-site restoration/mitigation areas. For example, the City or an approved management entity may be responsible for the management of the Project-specific habitat mitigation area, while a separate mitigation banking entity may be responsible for the area of the mitigation bank (once established). The final protection document(s) will depend upon several factors, including whether the mitigation bank is established and if the City is willing/able to accept management responsibility for the mitigation area.

A Temporary Covenant of Easement (COE) and IOD would be recorded over the Project mitigation area and mitigation bank area until such time as the permanent management entities are identified or the Park and Recreation Open Space Division accepts the IOD and fee title to the land. Identification of permissible passive activities and other permit conditions for the Project will be incorporated into the COE. The COE(s) will be recorded against the title of the property and would run with the land.

8.3 MANAGEMENT ELEMENT

8.3.1 Wetland Mitigation Area

The Applicant will be responsible for 0.21 acre of freshwater marsh creation, 0.57 acre of southern cottonwood-willow riparian forest creation, and 1.14 acres of southern cottonwood-willow riparian forest (see Section 8.1.1 of this report and Appendix A-1) in order to meet the Project's 1.92-acre City wetland habitat mitigation requirement. This includes monitoring and maintenance of the mitigation creation and enhancement areas for five years to ensure success criteria are met (or less than five years if the success criteria are met sooner). The Applicant also will be required to provide funding for long-term management of the wetland mitigation component. The amount of funding shall be calculated through the use of a Property Analysis Record (PAR) or other equivalent method and shall be approved by the City. Long-term management will be conducted per an approved HMP to be prepared in conjunction with the regulatory agency permitting process. Pursuant to the City's Biology Guidelines: For all wetland mitigation sites, funding must be provided to cover the costs of their in-perpetuity management and monitoring. Funding may be provided by a variety of means including, but not limited to, the establishment of an endowment or Community Facilities District.

Either the City or another approved land management entity would be responsible for the long-term management of the wetland mitigation area, in perpetuity. If the City is to be responsible for long-term management of the mitigation area then, prior to recordation of a COE, the Applicant will enter into a Maintenance Agreement with the City for ongoing maintenance of habitats within the mitigation area. Under this scenario, the City would be responsible for long-term maintenance and management of the mitigation area (after the initial five-year management period). The above would not occur if a non-City management entity takes responsibility for the long-term management of the mitigation area. Regardless of the management entity selected, the Applicant still would be responsible for providing the long-term funding and establishing a COE over the mitigation area.

8.3.2 Mitigation Bank Area

The Applicant will be responsible for carrying out the habitat creation and enhancement within the wetland habitat mitigation bank area, including the five-year maintenance and monitoring period (Appendix A-2). This restoration would comply with the Guideline B15 requirement, but it does not serve as mitigation for the proposed Project and remains available for use as mitigation on future projects. As such, the Applicant intends to establish a wetland mitigation bank on this non-mitigation habitat restoration area. The Applicant and/or the approved mitigation bank entity will be responsible for long term management of this area.

The Applicant is responsible for obtaining all permits and authorizations required for the establishment of the bank. The Applicant also will be responsible for management and maintenance of the mitigation bank area in the interim period between habitat creation and bank establishment. The intent of the mitigation bank is that, once established, there will be a long-term management/banking entity that would be responsible for the site in perpetuity. This banking entity would be responsible for the funding of the long-term management effort, as well. Under this scenario, the City would have no management responsibility of the mitigation bank area.

If the mitigation bank does not become established, the Applicant would maintain responsibility over the non-mitigation restoration area until such time as it can be turned over to the City in fee title. Under this scenario, the City would become responsible for the long-term management of the habitat restoration that was conducted per B15 and originally intended to become a mitigation bank.

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APPENDIX A-1

WETLAND MITIGATION PLAN

Riverwalk Project
Wetland Mitigation Plan
(Project No. 581894)

February 19, 2020

Prepared for:

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ALDEN
ENVIRONMENTAL, INC

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1.0 INTRODUCTION

This wetland mitigation plan (Plan) has been prepared for the Riverwalk Project (Project) in accordance with the requirements of the City of San Diego (City). Specifically, the wetland mitigation described herein is required to meet the Project's wetland mitigation needs. The measures identified herein are intended to meet the requirements of the City, as well as pending permits/authorizations from the U.S. Army Corps of Engineers (Corps), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB). Other Project-related mitigation requirements are not addressed in this Plan. All mitigation activities will occur within the limits of the Riverwalk Project and are intended to increase and enhance the native habitats along the San Diego River within and adjacent to the Multi-habitat Planning Area (MHPA).

2.0 PROJECT DESCRIPTION AND IMPACTS

2.1 PROJECT LOCATION

The approximately 195.0-acre Project site is located in Mission Valley in the City, on the La Jolla U.S. Geological Survey (USGS) 7.5-minute Quadrangle (Figures 1 and 2). Regional access to the site is provided by Interstate 8 (I-8), located immediately south of the Project site; State Route 163 (SR 163), located approximately one mile east of the Project site; and Interstate 5 (I-5), located less than two miles west of the Project site. Primary vehicle access to the Project would occur at Fashion Valley Road from the east, Hotel Circle North from the south, and Friars Road from the north.

The wetland mitigation area is located in the eastern portion of the Project site and along the existing San Diego River channel, which traverses the Project site in an east-west direction. All mitigation activities would occur adjacent to the river channel and almost entirely within the MHPA.

2.2 PROJECT SUMMARY

The Project site is currently developed as the Riverwalk Golf Course with three, 9-hole courses and a clubhouse building. The golf course operates under an existing Conditional Use Permit (CUP No. 94-0563). The Project proposes an amendment to the existing Levi-Cushman Specific Plan to replace the 195-acre Riverwalk property with the Riverwalk Specific Plan and redevelop the existing golf course as a walkable, transit-centric, and modern live-work-play mixed-use neighborhood that features an expansive Regional River Park along the San Diego River (Figure 3).

Additionally, the Project includes modifications to Fashion Valley Road (Figure 3) to improve this crossing of the San Diego River in a manner that avoids wetland impacts to the maximum extent possible. The existing culverts would be replaced with a Con/Span arch. The foundation for the arch is buried beneath the roadway, leaving an earthen-bottomed channel. The majority of the impacts to construct the roadway improvements would be restored with native vegetation.

The Project's mitigation would include the removal of invasive, non-native plant species and the planting of native seed and container stock in accordance this Plan when approved by the City. The mitigation is intended to offset impacts through creation and enhancement of native habitats along the San Diego River within and adjacent to the MHPA.

The Project also includes a habitat restoration effort along the existing river channel and within the MHPA on site. This is to comply with Guideline B15 in the City's MSCP Subarea Plan (City 1997) and to create a future wetland mitigation bank. That habitat restoration is addressed in a separate wetland restoration plan.

3.0 DESCRIPTION OF THE MITIGATION SITE

3.1 LOCATION AND SIZE OF MITIGATION AREA

The mitigation would be conducted within an approximately 2.45-acre area along the existing river channel, near the eastern limits of the Riverwalk Project (Figure 4). This area supports, or has the potential to support, wetland habitats.

3.2 EXISTING FUNCTIONS AND SERVICES

The mitigation area is located along the existing San Diego River Channel, which flows through the Riverwalk Golf Course. The channel is incised and supports wetland/riparian habitats. The land adjacent to the north and south of the channel is an existing, developed golf course and does not support sensitive vegetation communities.

3.3 SITE SUITABILITY

The mitigation area is considered suitable for the proposed wetland mitigation as a result of the presence of appropriate soils and topography and the presence of existing wetland/riparian features. The adjacent golf course areas are within the historic limits of the San Diego River and support suitable soils, topography, and landscape features for successful expansion (creation) of native wetland habitat. A hydrological study (Chang Consultants 2019) was conducted for the Project to define the 2-, 5- and 10-year floodplain limits and found that the majority of the mitigation area will be inundated during at least a 2-year storm event. Virtually the entire area would be inundated during a 10-year event.

The grading for habitat creation is designed to occur within the Ordinary High Water Mark (OHWM) in the active channel area, adjacent to the low-flow channel. The OHWM defines the lateral extent of waters in ephemeral and intermittent streams in the Arid West. The active channel, a short-term geomorphic feature formed by prevailing stream discharges, is narrower than the bank-full channel and is defined by a break in bank slope that also typically is the edge of permanent vegetation (Lawlor 2004). Typically, riverine restoration would occur within and adjacent to the OHWM, within the active channel. The OHWM is associated with flood events ranging from <1- to the 15.5-year event (Corps 2011). The grading and hydrological design for the created habitat is well within this standard for the identification of the OHWM and active channel area. The target hydrological conditions would meet the Corps requirements for determination of the OHWM and limits of jurisdictional feature areas.

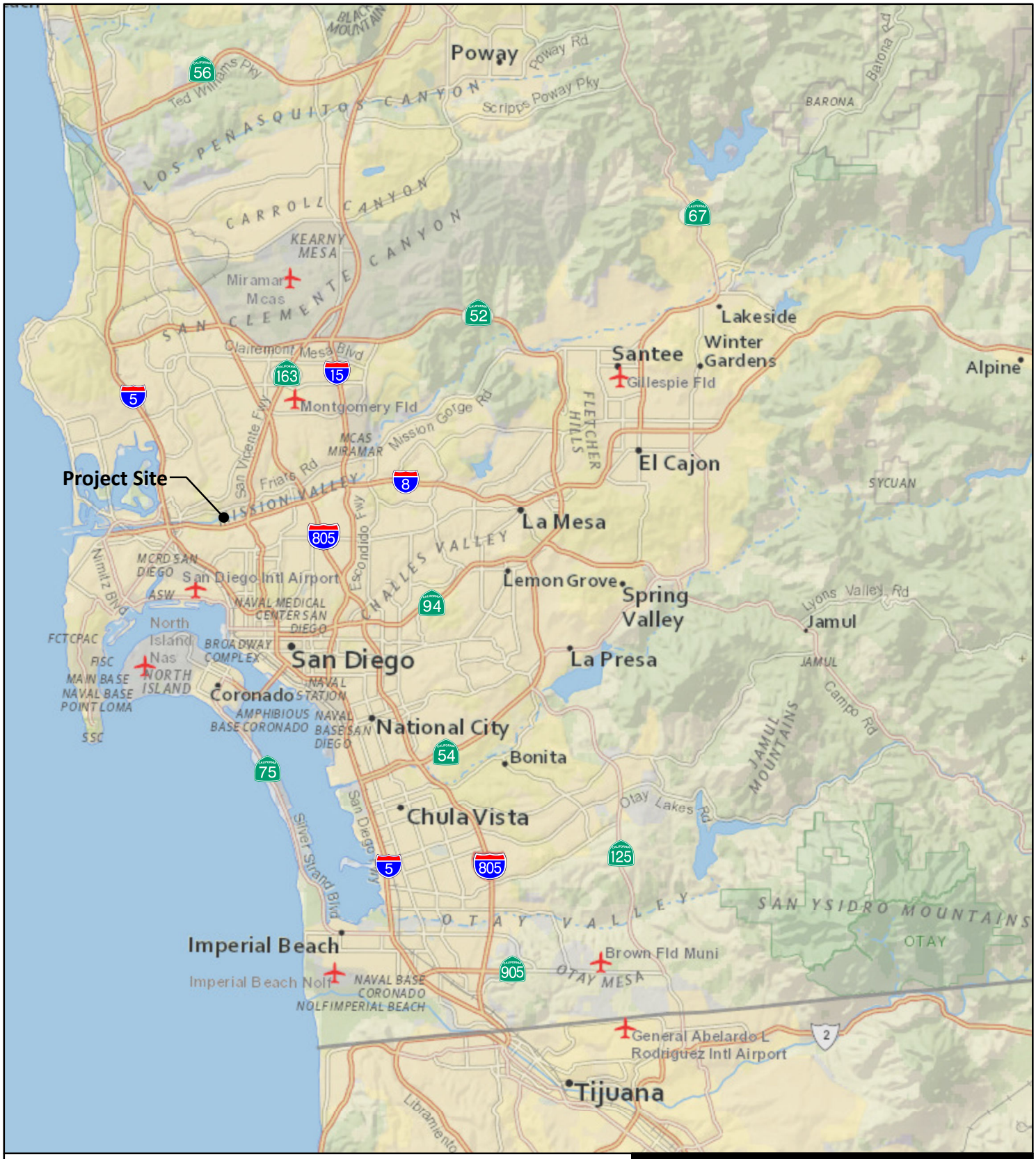

Figure 1

Regional Location

RIVERWALK PROJECT
WETLAND MITIGATION PLAN

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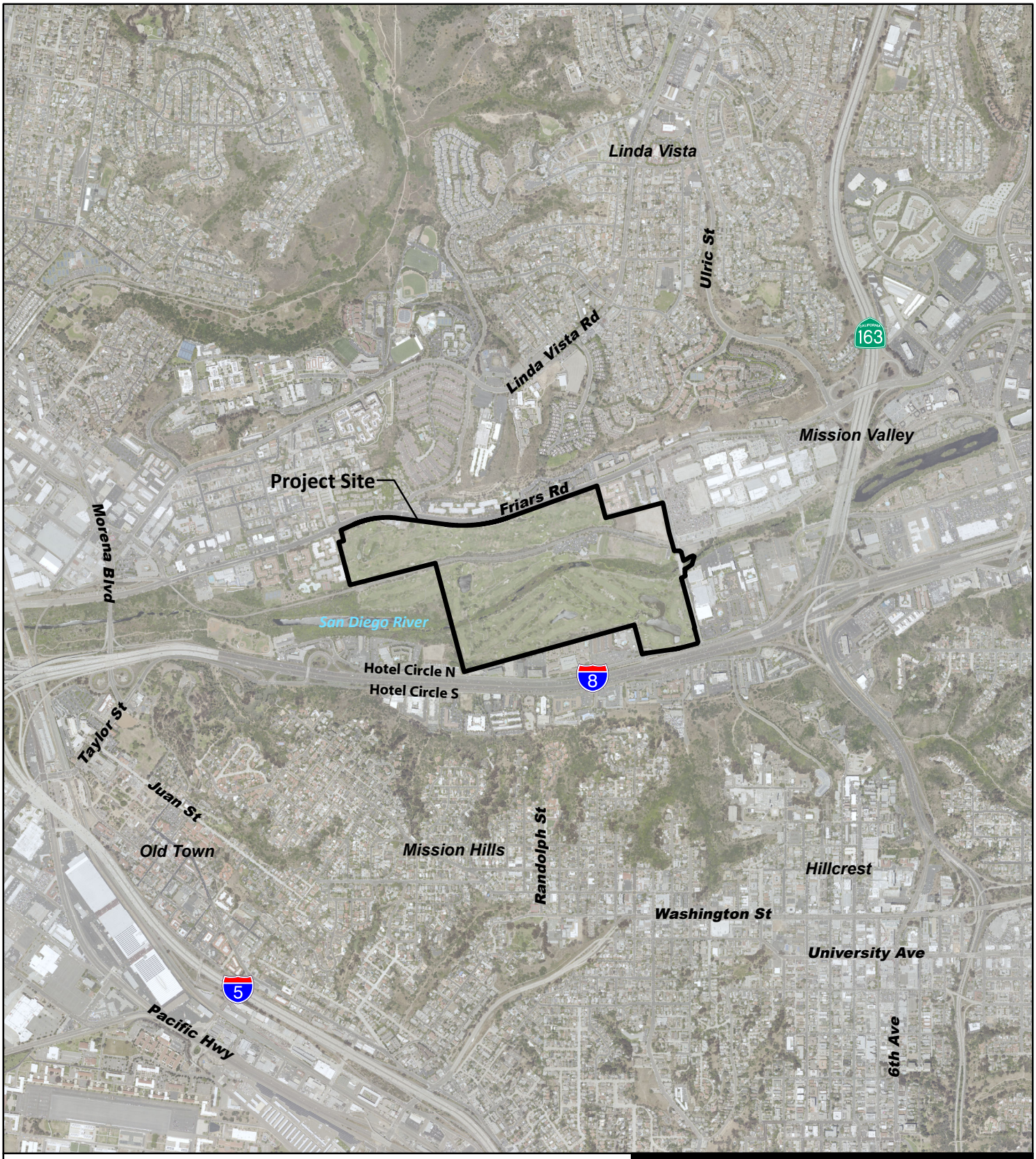

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Figure 2

Project Location

RIVERWALK PROJECT
WETLAND MITIGATION PLAN

Goshen Street
Via Las Cumbres
Friars Road
Riverwalk Drive
San Diego Trolley
Detention Basin
MTS Trolley Station
Existing Clubhouse to Remain
River Park
See Detail
Existing Outfall
Habitat Restoration Area
Detention Basin
River Park
Existing Bridge to Remain
50' No Use Buffer
Existing San Diego River Channel
Outfall Detention Basin
Connect to Existing Outfall
Passive Park/Buffer
Street J (IOD)
Habitat Restoration Area
50' No Use Buffer
Passive Park/Buffer
River Park
Existing Bridge to Remain
Fashion Valley Road
Street U (IOD)
Hotel Circle North
8
Detail Area
0 50 100 Feet
Project Site
MHPA
San Diego River Trail
City Roadway IOD
Project Impacts
Existing Storm Drain
Proposed Storm Drain
Existing San Diego River Channel
Riverwalk Project Development
Fashion Valley Road Improvements
River Park - Active Park
River Park - Passive Park
50' No Use Buffer
Wetland Habitat Restoration
N
W E
S
0 175 350 Feet
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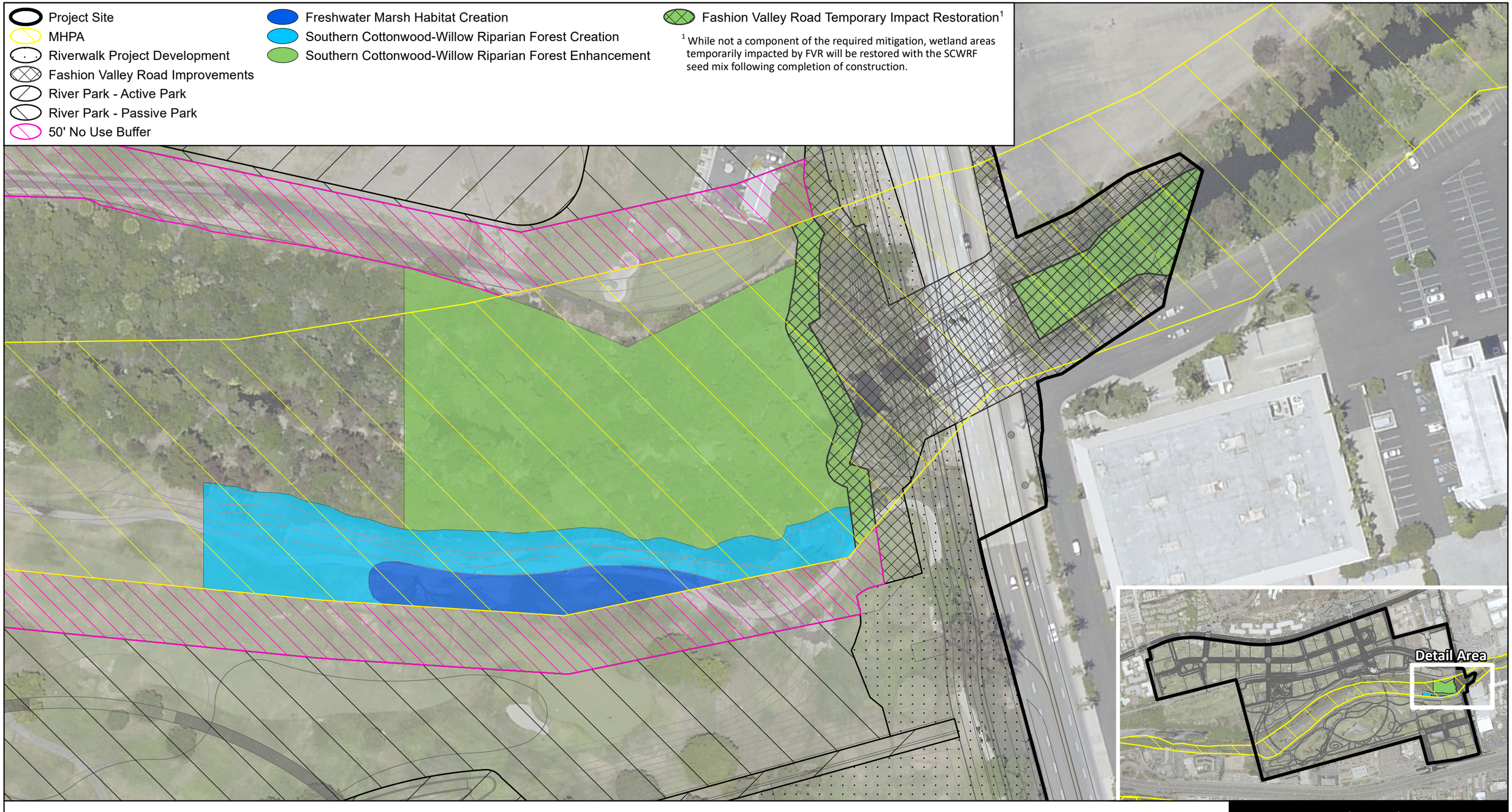
Figure 3

Development Plan

RIVERWALK PROJECT
WETLAND MITIGATION PLAN

- Project Site
- MHPA
- Riverwalk Project Development
- Fashion Valley Road Improvements
- River Park - Active Park
- River Park - Passive Park
- 50' No Use Buffer
- Freshwater Marsh Habitat Creation
- Southern Cottonwood-Willow Riparian Forest Creation
- Southern Cottonwood-Willow Riparian Forest Enhancement
- Fashion Valley Road Temporary Impact Restoration[1]

[1] While not a component of the required mitigation, wetland areas temporarily impacted by FVR will be restored with the SCWRF seed mix following completion of construction.



N
W E
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0 40 80
Feet

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ENVIRONMENTAL, INC

Figure 4

Wetland Mitigation

RIVERWALK PROJECT
WETLAND MITIGATION PLAN

The goal in the habitat creation area within the new OHWM limits is to create a variable streambed adjacent to the existing low flow channel that would be ephemeral in nature but may also become intermittent depending upon rainfall, groundwater levels, and overflow conditions from the existing low flow channel. The proposed storm event inundation conditions (2-year event) are consistent with this goal.

A broad range of species that are appropriate for wetland habitat adjacent to the low-flow channel in the active channel area have been selected for the habitat creation effort. The range of species goes from true hydrophytes in the freshwater marsh area to transitional wetland/upland species in the SCWRF area. The location selected for the freshwater marsh creation is at a lower elevation that the adjacent berm and is designed to have suitable water holding characteristics to support this habitat. The elevations for the SCWRF creation are within the range of elevations for the existing habitat in the vicinity. The species selected also are prevalent upstream and downstream from the Project site, along the San Diego River. Overall, the vegetative goal is for a diverse riparian scrub community that is well adapted to variable water flow and rainfall conditions. This community also is adapted to the intermittent seasonal rainfall events, interspersed with relatively dry periods, that are characteristic of coastal San Diego County.

Additionally, the new surface elevation would be within approximately 4 to 8 feet of the existing groundwater level, based on the available soils data collected previously on the site. One goal for the mitigation effort is to ensure that the grading does not go deep enough to breach the groundwater level as this could create a perennial surface ponded situation (i.e., the MTS site downstream and FSDRIP upstream), as opposed to a natural seasonal surface stream flow condition. The species identified for the habitat creation (freshwater marsh and SCWRF) are relatively shallow-rooted (2 to 6 feet) and typically do not depend upon groundwater for their survival. The deeper-rooted species (i.e. cottonwood) may reach down to the groundwater level, but typically they will stop in the capillary fringe area above the groundwater layer. The wetland vegetation in the habitat creation area may use groundwater in dry years with little rainfall; however, the intent of the effort is to not create habitat that is dependent upon groundwater for its long-term persistence.

More specifically, the area of proposed wetland habitat creation is in alignment with the previous San Diego River channel (pre-MTS project) on site and is of a similar width as that of the wetland habitat located just off site and downstream. As such, the habitat creation is within the limits of the larger San Diego River system and would not result in an attempt to convert historic upland habitat to wetland habitat.

Finally, the above approach is in line with other projects approved by the regulatory agencies in the region. An example is the off-site wetland habitat mitigation effort for the Merge 56 Development Project. That effort is in the final approval stages with the Corps and RWQCB, would occur in McGonigle Creek, and has much the same approach and characteristics as the proposed Riverwalk Project effort.

4.0 MITIGATION DESIGN

The approximately 2.45-acre mitigation site (Figure 4) encompasses the area required to meet the Project's City wetland habitat mitigation acreage (1.92 acres), as well as an additional 0.53 acre area that may be required to meet future agency mitigation requirements. In order to meet the Project's City mitigation requirements, the enhancement area will include a minimum of 1.14 acres of SCWRF habitat (Figure 4). The Project also will create a minimum of 0.57 acre of southern cottonwood-willow riparian forest (SCWRF) and 0.21 acre of freshwater marsh to meet the Project's City wetland mitigation requirements. Upon successful completion, the functions and services of the enhanced and created habitats within the overall mitigation area will be increased.

In addition to the required mitigation, this plan includes restoration of wetland habitat temporarily impacted by the Fashion Valley Road improvement component of the overall Project. This restoration is not a mitigation requirement; however, it is required to ensure that impacts to the wetland habitat at the Fashion Valley Road improvement location are minimized to the extent practicable.

4.1 WETLAND ENHANCEMENT

The river channel within the mitigation area supports SCWRF that has been affected by, for example, non-native plant species and trash dumping. The Project would preserve and enhance a minimum of 1.14 acres to meet the Project's City wetland mitigation requirement. The existing channel would stay in place, and no grading would occur within its limits. Enhancement activities would include removing weeds, trash, cement, and/or other materials that have been dumped within and adjacent to the stream over time. Native seed also will be installed within the enhancement area, as necessary, to help ensure improved habitat function.

4.2 WETLAND CREATION

In addition to enhancing the preserved wetlands, 0.81 acre of wetland habitat will be created (0.03 acre more than the 0.78 acre required) by providing a side channel area along the south side of the existing San Diego River channel. This effort will involve remove of all of the golf course facilities including greens, holes, sand traps, etc. Once the facilities have been removed, the creation area will be graded to create an expanded channel area that is at an elevation within 2 to 4 feet of the existing river channel bottom. This grading will occur adjacent to the existing channel but will not breach the channel or encroach upon any of the existing wetland habitat. The habitat goal is to create freshwater marsh in the lower area and SCRWF along and adjacent to the existing SCWRF.

4.3 TARGET FUNCTIONS AND SERVICES

The goals of this mitigation effort are to enhance existing wetland habitat and create wetland habitats that would increase the habitat quantity and quality along the San Diego River. With the completed mitigation, it is expected that functions and services (water filtration, sensitive wildlife and plant habitat, etc.) would be improved and increased by the end of the mitigation effort. This realization of target functions and values would be documented by conducting quantitative and qualitative analyses throughout the monitoring period.

5.0 IMPLEMENTATION PLAN

The on-site habitat enhancement and creation will consist of several components, including:

- Pre-condition photographic documentation
- Initial site preparation
- Enhancement of preserved wetland areas
- Creation of additional wetland habitats

5.1 RATIONALE FOR EXPECTING IMPLEMENTATION SUCCESS

The site selected for the mitigation effort currently supports wetland habitat along the existing San Diego River channel and within the historic San Diego River limits. This Plan would enhance and expand the limits of wetland/riparian area and would improve habitat quality and functions. The hydrological analyses concluded that the site would be inundated regularly, the built condition would be above groundwater (maintain surface flow condition), the soils are suitable for the proposed vegetation, and the habitat creation area currently supports golf course. Given the above, suitable parameters for successful implementation occur on the site. Refer to Section 3.3 of this Plan for additional site suitability information.

5.2 RESPONSIBLE PARTIES

5.2.1 Project Proponent

SD Riverwalk, LLC (or the owner at the time of implementation) will be responsible for financing the installation, maintenance, and monitoring of the mitigation measures.

5.2.2 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of this mitigation program will be the responsibility of a restoration specialist with a minimum of 5 years of habitat restoration experience. The restoration specialist will educate all participants with regard to program goals and directly oversee all aspects of the project. In addition, the specialist will collect pre-condition biological information (photographic documentation), conduct all monitoring data collection, annual assessments, and prepare all required reports. If necessary, the restoration specialist will provide the project proponent and contractor with a brief report, including a written list of items in need of attention following each monitoring visit. The contractor will be responsible for carrying out all required measures in a timely manner. The restoration specialist will notify the contractor and responsible party if any requested remediation is not addressed. A checklist with the main tasks and responsibilities is included in Table 1.

Table 1 MITIGATION PLAN CHECKLIST						
Construction Phase	**Task**	**Applicable Parties**				
		Project Proponent	**Grading Contractor**	**Installation Contractor**	**Maintenance Contractor**	**Restoration Specialist**
Pre-construction	Order seed and container stock			X		
	Attend pre-construction meeting	X	X	X		X
	Document pre-impact conditions					X
	Identify site limits and staging area					X
Installation	Delineate boundaries			X		X
	Remove existing facilities		X			X
	Grade creation area		X			X
	Install container stock and seed			X		X
	Install irrigation system			X		X
	Prepare/submit as-built report					X
Five-year Maintenance & Monitoring Period	Conduct maintenance monitoring and annual monitoring					X
	Maintain site for remainder of 5 years (or fewer than 5 years if success criteria are met sooner)				X	X

5.2.3 Installation/Maintenance Contractor

The installation and maintenance contractor(s) will have habitat restoration experience and will, under the direction of the restoration specialist, be responsible for completion of grading, pre-planting weed control, planting, seeding, and maintenance. The restoration specialist will educate the contractor(s) on the installation and maintenance of native plant species.

After the installation is complete, maintenance personnel will initiate the maintenance program under the direction of the restoration specialist. Maintenance crews will service the entire enhancement area regularly following installation. Service will include but not be limited to weed control, trash removal, watering, fence repair, dead plant replacement, and re-seeding. All activities conducted will be seasonally appropriate and approved by the restoration specialist. The maintenance crew will meet the restoration specialist at the site when requested and will perform all checklist items in a timely manner as directed by the restoration specialist. The restoration specialist will ensure that maintenance personnel are capable of discerning between native plant species and non-native weed species.

5.3 CONTRACTOR EDUCATION

Prior to the commencement of site activities, the contractor(s) will review all aspects of this Plan including permit requirements, site protection, maintenance inspections, landscape procedures, and monitoring. The restoration specialist will make the Contractor and all other contractors, subcontractors and the project supervisors aware of any agency permits and authorizations associated with the project. Copies of project permits will be kept on site at all times during periods of active work and must be presented to any agency personnel upon demand.

5.4 IMPLEMENTATION SCHEDULE

Implementation of the mitigation would commence in conjunction with the grading for the Riverwalk Project. The grading and initial site preparation will be a component of the River Park component of the Riverwalk Project and shown on the final grading plans for that project. Installation of the habitat (seeding, planting, irrigation, etc.) will begin once all mitigation area grading activities are complete. Habitat enhancement and creation activities are anticipated to take between 8 and 12 weeks to complete.

Installation activities would avoid the nesting seasons of the least Bell's vireo and light-footed Ridgway's rail (March 15 through September 15) and southwestern willow flycatcher (May 1 through September 1) should any of those species be present, and potentially affected, as determined during a protocol, pre-activity survey.

5.5 SITE PREPARATION

As described above, the initial site preparation will involve removal of the golf course facilities and grading of the areas adjacent to the river channel to achieve the target elevations for the wetland mitigation. Once the mitigation area grading is complete, the site will be de-compacted to increase soil permeability and the potential for establishment of native habitats. Weeds, refuse, debris, and deleterious soil will be removed and disposed of in a licensed landfill.

5.6 FENCING

Prior to and during implementation (grading/planting) of the mitigation effort, a temporary orange construction fence will restrict access to the creation/enhancement areas. Three-strand, barbless wire fences will be installed along the boundary of the wetland mitigation area, preventing OHV and pedestrian use of the preserved area. Steel signs will be attached to the fences that will provide notice, in both English and Spanish, that the area is an ecological preserve and that trespassing is prohibited. These wire fences will remain in place during the maintenance and monitoring period. Once the mitigation effort is established and successful, the fences will be removed.

Permanent barriers will consist of boulders or deterrent vegetation, as well peeler log fencing that will be installed as part of the Riverwalk Project. These barriers will be located along the edge of the 50-foot no use buffer to deter entrance into the MHPA and wetland mitigation area. Installation of these permanent barriers is not a component of this Plan.

5.7 WETLAND HABITAT

The target habitats within the wetland creation area are freshwater marsh and SCWRF. These are to mitigate in-kind for project impacts to wetland habitat. To this end wetland seed mixes have been prepared that include native wetland species that occur within these target wetland habitats.

5.7.1 Wetland Seed Mixes

Wetland seeding will take place within the entire creation area and as needed in the enhancement area (Figure 4). The wetland seed mixes are presented in Tables 2 and 3. The seed will be sourced from as close to the site as possible and includes plant species traditionally used by Native American tribes. The source and proof (tags) for all seed will be provided.

Table 2
FRESHWATER MARSH SEED MIX[1]

SPECIES	POUNDS/ACRE
Yerba mansa (*Anemopsis californica*)	3
Cat tail (*Typha latifolia*)	3
Spiny rush (*Juncus acutus*)	4
Pale spikerush (*Eleocharis macrostachya*)	4
Mugwort (*Artemisia douglasiana*)[2]	4
Saltmarsh fleabane (*Pluchea odorata*)	3
Creeping wild rye (*Leymus triticoides*)	5
Tall flatsedge (*Cyperus eragrostis*)	3
TOTAL	29

[1]Applied within creation area and as needed in enhancement area

[2]Plant species traditionally used by Native American tribes

Table 3 SOUTHERN COTTONWOOD-WILLOW RIPARIAN FOREST SEED MIX[1]	
SPECIES	**POUNDS/ACRE**
Yerba mansa (*Anemopsis californica*)	3
Mugwort (*Artemisia douglasiana*)[2]	4
Creeping wild rye (*Leymus triticoides*)	5
San Diego sagewort (*Artemisia palmeri*)	4
Mulefat (*Baccharis salicifolia*)[2]	4
Tarragon (*Artemisia dracunculus*)	6
Western ragweed (*Ambrosia psilostachya*)[2]	6
Purple needlegrass (*Stipa pulchra*)	6
California deergrass (*Muhlenbergia rigens*)[2]	4
Red willow (*Salix laevigata*)[2]	3
Spiny rush (*Juncus acutus*)	4
Arroyo willow (*Salix lasiolepis*)[2]	3
Cottonwood (*Populus fremontii*) [2]	3
Elderberry (*Sambucus nigra*)[2]	3
TOTAL	58

[1]Applied within creation area and as needed in enhancement area

[2]Plant species traditionally used by Native American tribes

A hydroseed slurry will be evenly applied in two stages such that an even, homogeneous distribution is made in each area. The first stage will include the seed, a small amount of fiber mulch, and dye. This application will help ensure that maximum seed/soil contact is made. A second layer will be applied immediately following the first. The second layer will include additional fiber mulch, dye, and a tackifier. The tackifier will serve to help bind seed and soil until germination. Hydroseed specifications are presented in Table 4.

Table 4 HYDROSEED APPLICATION SPECIFICATIONS		
Material	**First Application**	**Second Application**
Seed	As called for per site	N/A
Long fiber wood mulch	500 lbs/acre	1,000 lbs/acre
Dye	As necessary	As necessary
Tackifier	N/A	90 lbs/acre
Water	Sufficient to maintain slurry	Sufficient to maintain slurry

Hand seeding may be conducted in focused areas to help ensure targeted application of seed. Areas not treated with the hydroseed slurry will be hand seeded following hydroseeding to make sure all areas are seeded. These areas will be determined at the time of seeding and will include areas where hydroseeding may not be possible, where existing native plants may be negatively affected by the hydroseed slurry, or where it is thought that certain species may be appropriate in small areas. Seed of different species will only be mixed when they are to be applied to the same location. Individual species may be seeded separately as directed by the restoration specialist. Hand broadcasters will be used to help ensure a consistent application of seed. An inert carrier (sand,

sawdust) may also be mixed with the seed to help maintain consistency. Seeding will not be conducted during windy conditions. Seed will be raked into soil after application to help increase seed/soil contact.

5.7.2 Wetland Container Stock

In addition to seed, native container stock will be planted in the wetland creation areas (Tables 5 and 6). The container stock will be sourced from as close to the site as possible and includes plant species traditionally used by Native American tribes. If container stock is unavailable from the project vicinity, the restoration specialist may substitute species as necessary. The source and proof for all plant material will be provided. All container stock will be inspected and approved by the restoration specialist prior to being installed. Specifically, the restoration specialist will ensure that:

- The correct number, size, and species ordered are delivered;
- Plants are healthy and showing no sign of disease;
- Roots fill the containers, but are not root bound;
- There is no breakage of plants;
- Plants show no evidence of pests;
- Plants are in a state suitable for out-planting.

The restoration specialist will reject any plants not meeting these requirements.

Table 5
FRESHWATER MARSH CONTAINER STOCK[1]

SPECIES	NUMBER PER ACRE[2]
Yerba mansa (*Anemopsis californica*)	200
Spiny rush (*Juncus acutus*)	200
Mexican rush (*Juncus mexicanus*)	200
San Diego marsh elder (*Iva hayesiana*)	200
TOTAL	800

[1]Applied within wetland creation area

[2]All container stock is 1 gallon in size

Table 6 SOUTHERN COTTONWOOD-WILLOW RIPARIAN FOREST CONTAINER STOCK[1]	
SPECIES	**NUMBER PER ACRE[2]**
Yerba mansa (*Anemopsis californica*)	200
Spiny rush (*Juncus acutus*)	200
San Diego marsh elder (*Iva hayesiana*)	200
Freemont's cottonwood (*Populus fremontii*)[3]	200
Creeping wild rye (*Leymus triticoides*)	50
Fuchsia-flowered gooseberry (*Ribes speciosum*)	100
Mulefat (*Baccharis salicifolia*)[3]	200
California deergrass (*Muhlenbergia rigens*)[3]	50
Black willow (*Salix exigua*)[3]	100
Arroyo willow (*Salix lasiolepis*)[3]	100
Elderberry (*Sambucus nigra*) [3]	100
TOTAL	1,500

[1]Applied within wetland creation area

[2]All container stock is 1 gallon in size

[3]Plant species traditionally used by Native American tribes

The installation contractor will be responsible for planting all container stock within 4 days following delivery. Container stock staged on site will be placed in a protected area and watered regularly prior to planting. Container stock will be planted in such a way as to mimic a natural species distribution. The restoration specialist will specify the locations for all planting. Plants will be placed in natural groupings with appropriate spacing for the given species/target habitat type. Holes for each plant will be dug twice as deep and twice as wide as the container size. The hole will then be refilled to the halfway point, slightly compacted, and filled with water. Once all the water has soaked into the soil, the container stock will be planted such that the container plant soil level is slightly above ground level. Loose soil will be used to fill in the areas around the root ball and help ensure that there are no air spaces. Remaining soil will be used to create a watering basin around the plant.

5.7.3 Material Salvage

The seed and container stock identified above is intended to be implemented without using any native plant/soil material salvaged from the adjacent development project. If salvaged upland soil/plant material is made available to the mitigation effort during the installation phase it will be incorporated to the extent practicable.

5.8 IRRIGATION

A temporary, above ground irrigation system will be installed within the habitat creation area. The system will provide head-to-head coverage to ensure adequate irrigation of both the installed seed mix and container stock species. The system will include timers and ground moisture sensors to help prevent over watering. The timers will be set to emulate a normal rainfall year in the event that actual rainfall does not reach normal levels.

5.9 WILDLIFE HABITAT ENHANCEMENT

As an aid to wildlife establishment within the mitigation area, shelter for small animal species will be created. The first type of shelter involves placement of 20 half-inch thick plywood boards, measuring 2 x 4 feet. These boards will provide shade, cover, and nesting locations for species including mice, lizards, snakes, and numerous invertebrate species (e.g., insects, spiders, etc.). The boards also provide an opportunity to monitor the wildlife usage of the site. During regularly scheduled monitoring visits, the restoration specialist will be able to lift each board and note the species present. There are no specific monitoring requirements or performance standards for the boards. The boards are intended to be left in place and allowed to break down naturally.

Additionally, shrub and brush material available on site will be collected by hand and stacked into low brush piles to provide additional cover for small animals. Each pile will be approximately 4 to 6 feet in diameter and 2 to 3 feet in height, provided sufficient material is available. This can be especially beneficial during the initial stages of the effort when there will be no cover available for small animals to utilize. The brush piles will be distributed throughout the mitigation area. The final number and size of piles will depend upon the amount of material available on site. There are no specific monitoring requirements or performance standards for the brush piles.

5.10 AS-BUILT CONDITIONS

The revegetation specialist shall prepare and submit a map showing the as-built conditions of the mitigation area upon successful completion of the 120-day plant establishment period. Areas of grading, seeding, and planting shall be shown on the map.

6.0 MAINTENANCE PLAN

6.1 HABITAT MAINTENANCE ACTIVITIES

The maintenance program begins during the 120-day plant establishment period and includes trash removal, weed control, replacement planting and reseeding, fencing and signage maintenance, vandalism repair, and irrigation maintenance. Following the 120-day plant establishment period, a 5-year maintenance program is proposed to help ensure the persistence of the enhanced and created habitat. The length of the maintenance program may be shortened if the mitigation program is deemed successful before 5 years have elapsed. The maintenance program will also involve removal of trash, weed control, fence and signage repair/replacement, and any remedial measures deemed necessary for mitigation program success (e.g., re-seeding and recontouring).

All maintenance activities would avoid the nesting seasons of the least Bell's vireo and light-footed Ridgway's rail (March 15 through September 15) and southwestern willow flycatcher (May 1 through September 1) should any of those species be present, and potentially affected, as determined during a protocol, pre-activity survey.

6.1.1 Trash Removal

The maintenance contractor will remove trash encountered within the mitigation area during every maintenance event and dispose of it in a legally acceptable fashion.

6.1.2 Weed Control

Particular maintenance emphasis will be placed on pro-active weed control within the mitigation area. All weed species observed during mitigation activities will be considered invasive and targeted for removal. All workers conducting weed removal activities will be educated to distinguish between native and non-native species, with special attention paid to rare and endangered plant species.

Weeds will be removed by hand or with small machinery (e.g., line trimmers) whenever possible, but focused herbicide application may be used if needed and requested by the restoration specialist. Herbicides will only be applied by workers licensed to use those chemicals. Additionally, herbicide will not be used during wet or windy conditions.

Weeds will be removed from the mitigation area and disposed of in a legal manner. All weeds will be removed prior to reaching 12 inches in height or before developing seed. Leaf and branch drop of native species should be left in place and not removed from the site.

6.2 HABITAT MAINTENANCE SCHEDULE

Regular maintenance, trash removal, and weed control of the mitigation area will be conducted during the first 5 years following implementation of the mitigation program or until the mitigation program is deemed successful. Maintenance personnel will visit the site at least monthly for the 5-year maintenance and monitoring period. Additional visits will be conducted as directed by the restoration specialist during the rainy season (generally December through May) each year to keep weeds under control.

7.0 PERFORMANCE STANDARDS

The following sections provide performance standards to determine the successful completion of the 5-year maintenance and monitoring program, which could be less than 5 years in length if success criteria are met before 5 years have elapsed. Attainment of these standards indicates the mitigation area is progressing toward the habitat functions and services specified for this Plan. The standards are based on representative habitats in the San Diego River on site and Holland Vegetation Descriptions for San Diego County (Oberbauer et al. 2008). Methods used to measure these performance standards are described in the following text. If the restored areas fail to meet the Year 5 standards after the full monitoring term, a specific set of remedial measures will be developed, implemented, and the monitoring and maintenance period would be extended until all Year 5 standards are met or as otherwise provided in this Plan. If the site does not meet Year 5 standards, the monitoring and maintenance period would be extended a full year until all are met. Only when the entire mitigation site has attained the Year 5 standards will the entire site be signed off.

7.1 CONTAINER STOCK

During each annual monitoring event there will be no less than 80 percent survival of the initial container plants installed for each monitoring and maintenance year unless their function has been replaced by natural recruitment.

7.2 NATIVE SPECIES RICHNESS

Species richness cover success criteria have been established to determine the success of the mitigation effort. Species richness will be measured by visual assessment in Years 1 and 2, and by quantitative transect data in Years 3, 4, and 5. No specific richness criteria are established for Years 1 or 2, but annual success criteria for species richness in Years 3, 4, and 5 are provided in Table 7. Corrective measures will be implemented in areas not meeting the species richness goals in any given year.

Table 7
SPECIES RICHNESS SUCCESS CRITERIA[1]

Habitat	Year 3	Year 4	Year 5
Freshwater Marsh	3	4	5
SCWRF	10	12	12

[1]Pre-determined, non-relative values

7.3 NATIVE SPECIES COVER

Native species cover success criteria have also been established to determine success of the mitigation effort. Species cover will be measured by visual assessment in Years 1 and 2, and by quantitative transect data in Years 3, 4, and 5. No specific cover criteria are established for Years 1 or 2, but annual success criteria for species richness in Years 3, 4, and 5 are provided in Table 8. Corrective measures will be implemented in areas not meeting the species richness goals in any given year.

Table 8
NATIVE SPECIES COVER SUCCESS CRITERIA[1]

Habitat	Year 3	Year 4	Year 5
Freshwater Marsh	20	30	50
SCWRF	50	70	80

[1]Pre-determined, non-relative values

7.4 WEED COVER

General and target weed cover success criteria have been established for the mitigation effort. Given the size of the area and the extent of the weed seed bank, 100 percent weed eradication for all weed species is not a realistic goal (some species are highly invasive, and others are easier to eradicate). Therefore, species in Table 7 are zero tolerance species and will be controlled at 100 percent on a yearly basis. Other non-native species are more ubiquitous and can never be completely eliminated and will, therefore, be managed to a level of 10 percent or less. If the weed cover success criteria are not met in any given year, then remedial measures will be conducted.

Table 9 ZERO TOLERANCE WEED SPECIES		
Latin name	**Common name**	**Cal-IPC Rating[1]**
Atriplex semibaccata	Australian saltbush	M
Carpobrotus spp.	ice plant, hottentot fig	H/M
Cynodon dactylon	Bermuda grass	M
Euphorbia lathyris	gopher plant	N/A
Foeniculum vulgare	fennel	H
Hordeum spp.	barley	M
Nicotiana glauca	tree tobacco	M
Ricinus communis	castor bean	L
Salsola tragus	Russian thistle	L
Silybum marianum	milk thistle	L
Sorghum halepense	Johnson grass	N/A
Xanthium strumarium	cocklebur	N/A

[1]H= High invasiveness, M= Moderate invasiveness, L= Low invasiveness N/A= Not listed.

8.0 MONITORING PLAN

8.1 INSTALLATION MONITORING

The restoration specialist will be on site daily during the installation period to direct all habitat mitigation activities including site preparation, weed control, seeding, planting, and watering. Upon successful completion of the 120-day plant establishment period, the restoration specialist will prepare an as-built map and letter to confirm that the 5-year maintenance and monitoring period may begin.

8.2 MAINTENANCE MONITORING

The restoration specialist will conduct regular maintenance monitoring visits during the 120-day plant establishment period and then in accordance with the following schedule during the following 5-year maintenance period. The 5-year maintenance period visits will be made monthly in Year 1, bi-monthly in Years 2 to 3, and quarterly in Years 4 to 5. Additional visits may be required as conditions warrant. During each visit, the restoration specialist will assess the condition of the site and identify remedial measures as necessary. A brief monitoring memo will be prepared and submitted to the maintenance contractor following each maintenance monitoring visit.

8.3 ANNUAL MONITORING

Annual monitoring visits will be conducted by the restoration specialist in the fall during the 5-year maintenance period. During each annual monitoring, the success of the mitigation effort will be evaluated, and species richness and cover data will be collected. In Years 1 and 2, species richness and cover will be determined by visual assessment. In Years 3 through 5, quantitative transect data will be collected within the mitigation area.

Quantitative transect data will be collected using the point intercept line transect sampling methods described in the California Native Plant Society's Field Sampling Protocol (Sawyer and Keeler-Wolf 1995). Two 50-meter (m) long sampling transects will be established in Year 3 within each habitat creation area. The ends of each transect will be marked with a re-bar stake and recorded with a Global Positioning System (GPS) unit.

Species cover will be determined by dividing each transect into 50 half-meter intervals. A point will be projected into the vegetation at each interval, and any species intercepted by the point will be recorded. Species also will be divided into herb (0 to 60 centimeters [cm]), shrub (60 cm to 3 m), and tree (greater than 3 m) layers. Percent cover will be measured by dividing the number of hits by the number of possible hits. Total native and non-native cover values will be determined separately.

Native species richness (the number of species) will be calculated by counting all of the species encountered within a 5-m wide belt transect along each transect (2.5 m on each side). All plants observed will be categorized by origin (native/non-native) and height layer.

Photographs will be taken each year from the same photograph points used prior to initiation of site preparation. The photographs will help track project progress over time and will be included in the annual report each year.

8.4 ANNUAL REPORTS

As part of the monitoring program, annual reports will be prepared and submitted by the restoration specialist that evaluate the success of the mitigation effort to date, along with any recommendations for future work that may be deemed necessary. Each annual monitoring report will include data collected throughout the year in addition to the annual monitoring visit. To detect the overall trend of the mitigation, the annual monitoring report will contain comparisons of the monitoring data for all of the years that data were collected.

8.5 REMEDIAL MEASURES/ADAPTIVE MANAGEMENT

If the mitigation is not progressing as desired, corrective measures may be implemented. Corrective measures may include, but are not limited to, additional planting or seeding, altered maintenance effort, and increased watering regime.

8.6 MONITORING SCHEDULE

As described above, monthly inspections of the mitigation and maintenance effort would be performed during Year 1, every other month during Years 2 and 3, and quarterly for the remainder of the 5-year maintenance and monitoring period. The first annual botanical monitoring event will occur in the first winter following installation. Reports will be prepared and submitted within 3 months of each annual monitoring visit.

9.0 COMPLETION OF PROGRAM

9.1 NOTIFICATION OF COMPLETION

The permittee shall notify the City, Corps, CDFW, and U.S. Fish and Wildlife Service upon the mitigation achieving the Year 5 performance standards through the submittal of the final monitoring report.

9.2 CONFIRMATION

After receipt of the final monitoring report, the City, Corps, CDFW, and U.S. Fish and Wildlife Service may inspect the mitigation to determine if the enhancement and creation have been conducted in accordance with this Plan.

10.0 CONTINGENCY MEASURES

10.1 INITIATING PROCEDURES

An integral part of a successful mitigation program is the ability to detect problems with it early in the process, determine the cause of the problem, and attempt to modify the program to accommodate emerging issues or situations. Minor problems, such as trash, vandalism, isolated instances of plant mortality, or small-scale weed or pest infestations will be rectified as they are discovered during routine site monitoring and would not warrant the implementation of contingency measures.

If a performance standard is not met for all or any portion of the mitigation in any given year, or if the final performance standards are not met, the restoration specialist will prepare an analysis of the cause(s) of failure, and if determined necessary by the participating agencies, propose remedial measures for approval. These measures may include supplemental site grading, manipulation, planting, changes to the plant palettes, adjustment of the management of the site or a re-evaluation of species composition or other design changes. Additionally, the mitigation site is located within a dynamic riverine system that is subject to seasonal changes based on rainfall patterns and flood conditions. Assessments of target habitats will take into consideration riverine functionality in addition to specific success criteria and adaptive measures implemented to help ensure a functioning riverine system.

Should the mitigation fail as a result of a natural disaster such as an earthquake or flood, the project proponent will still be held responsible for any measures that are required to re-establish the mitigation. The project proponent is responsible to have the site meet performance standards in order to receive sign-off, regardless of the problems encountered.

10.2 FUNDING MECHANISM

The project proponent shall be responsible for all costs associated with any remedial measures.

10.3 RESPONSIBLE PARTIES

The project proponent shall be the responsible party for any remedial measures.

11.0 REFERENCES

Chang Consultants. 2019. Preliminary Drainage Report for Riverwalk-Vesting Tentative Map No. 2046680. July 16.

Lawlor, S.M. 2004. Determination of Channel-Morphology Characteristics, Bank-full Discharge, and Various Design-Peak Discharges in Western Montana. Scientific Investigations Report 2004-5263. U.S. Department of the Interior. U.S. Geological Survey in cooperation with the Montana Department of Transportation and the U.S. Department of Agriculture-Forest Service. Reston, Virginia.

Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge. March 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Robert F. Holland, Ph.D., October 1986.

U.S. Army Corps of Engineers. 2011. Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region. Curtis, K. E., Lichvar, R.W., & Dixon, L.E. Washington, DC: U.S. Army Engineer Research and Development Center.

APPENDIX A-2

WETLAND RESTORATION PLAN

Riverwalk Project
Wetland Restoration Plan
(Project No. 581894)

February 19, 2020

Prepared for:

SD Riverwalk, LLC
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Prepared by:

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ALDEN
ENVIRONMENTAL, INC

Riverwalk Project
Wetland Restoration Plan

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1.0 INTRODUCTION

This wetland restoration plan (Plan) has been prepared for the Riverwalk Project (Project) in accordance with the requirements of the City of San Diego (City). Specifically, the wetland restoration described herein is required to comply with MHPA Guideline B15 of the MSCP Subarea Plan. Guideline B15 requires restoration of native vegetation along this portion of the San Diego River Corridor as a condition of development proposals. In addition, this Plan identifies habitat creation/enhancement efforts that, along with the B15 enhancement, would contribute to a future wetland habitat mitigation bank on the Riverwalk Project site. Additional approvals, permits, and authorizations will be required for the future mitigation bank establishment. This Plan is not intended to be a component of those future bank approval efforts. All restoration activities are intended to increase and enhance the native habitats along the San Diego River within and adjacent to the Multi-habitat Planning Area (MHPA).

2.0 PROJECT DESCRIPTION AND IMPACTS

2.1 PROJECT LOCATION

The approximately 195.0-acre Project site is located in Mission Valley in the City, on the La Jolla U.S. Geological Survey (USGS) 7.5-minute Quadrangle (Figures 1 and 2). Regional access to the site is provided by Interstate 8 (I-8), located immediately south of the Project site; State Route 163 (SR 163), located approximately one mile east of the Project site; and Interstate 5 (I-5), located less than two miles west of the Project site. Primary vehicle access to the Project would occur at Fashion Valley Road from the east, Hotel Circle North from the south, and Friars Road from the north.

The habitat restoration and enhancement area is located along the existing San Diego River channel, which traverses the Project site in an east-west direction. All restoration activities would occur adjacent to this channel and within the MHPA.

2.2 PROJECT SUMMARY

The Project site is currently developed as the Riverwalk Golf Course with three, 9-hole courses and a clubhouse building. The golf course operates under an existing Conditional Use Permit (CUP No. 94-0563). The Project proposes an amendment to the existing Levi-Cushman Specific Plan to replace the 195-acre Riverwalk property with the Riverwalk Specific Plan and redevelop the existing golf course as a walkable, transit-centric, and modern live-work-play mixed-use neighborhood that features an expansive Regional River Park along the San Diego River.

Additionally, the Project includes modifications to Fashion Valley Road to improve this crossing of the San Diego River in a manner that avoids wetland impacts to the maximum extent possible. The existing culverts would be replaced with a Con/Span arch. The foundation for the arch is buried beneath the roadway, leaving an earthen-bottomed channel. Wetland/riparian habitat impacts from the Fashion Valley Road improvements would require mitigation. That mitigation, which requires habitat creation and enhancement, is addressed in a separate mitigation plan.

The Project also includes a habitat restoration effort along the existing river channel and within the MHPA on site (Figures 3 and 4). This is to comply with Guideline B15 in the City's MSCP Subarea Plan (City 1997) and to create a future wetland mitigation bank.

The restoration would include the removal of invasive, non-native plant species and the planting of native seed and container stock in accordance this Plan when approved by the City. The restoration is intended to increase and enhance the native habitats along the San Diego River, within and adjacent to the MHPA.

3.0 DESCRIPTION OF THE RESTORATION SITE

3.1 LOCATION AND SIZE OF RESTORATION AREA

The restoration effort would be conducted within an approximately 22.43-acre area along the existing river channel, within the limits of the Riverwalk Project (Figures 3 and 4). This area supports, or has the potential to support, wetland/riparian habitats.

3.2 EXISTING FUNCTIONS AND SERVICES

The restoration area is located along the existing San Diego River Channel, which flows through the Riverwalk Golf Course. The channel is incised and supports wetland/riparian habitats. The land adjacent to the north and south of the channel is an existing, developed golf course and does not support sensitive vegetation communities.

3.3 SITE SUITABILITY

The restoration area is considered suitable for the proposed wetland habitat enhancement and creation as a result of the presence of appropriate soils and topography and the presence of existing wetland/riparian features. The adjacent golf course areas are within the historic limits of the San Diego River and support suitable soils, topography, and landscape features for successful expansion (creation) of native wetland/riparian habitat. A hydrological study (Chang Consultants 2019) was conducted for the Project to define the 2-, 5- and 10-year floodplain limits and found that the majority of the restoration area will be inundated during at least a 2-year storm event. Virtually the entire area would be inundated during a 10-year event.

The grading for habitat creation is designed to occur within the Ordinary High Water Mark (OHWM) in the active channel area, adjacent to the low-flow channel. The OHWM defines the lateral extent of waters in ephemeral and intermittent streams in the Arid West. The active channel, a short-term geomorphic feature formed by prevailing stream discharges, is narrower than the bank-full channel and is defined by a break in bank slope that also typically is the edge of permanent vegetation (Lawlor 2004). Typically, riverine restoration would occur within and adjacent to the OHWM, within the active channel. The OHWM is associated with flood events ranging from <1- to the 15.5-year event (U.S. Army Corps of Engineers [Corps] 2011). The grading and hydrological design for the created habitat is well within this standard for the identification of the OHWM and active channel area. The target hydrological conditions would meet the Corps requirements for determination of the OHWM and limits of jurisdictional feature areas.

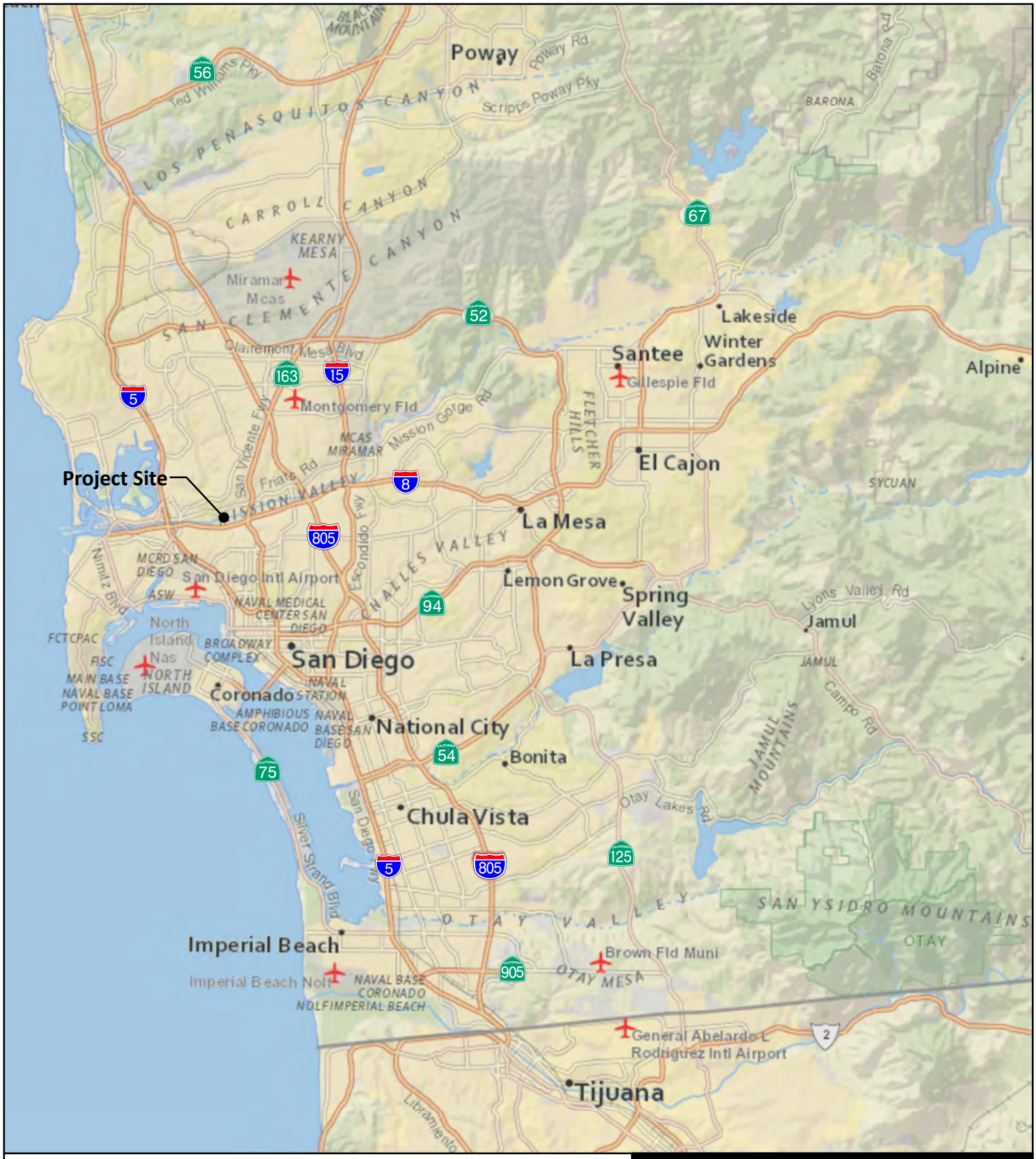

Figure 1

Regional Location

RIVERWALK PROJECT
WETLAND RESTORATION PLAN

N
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S

0 2 4 Miles

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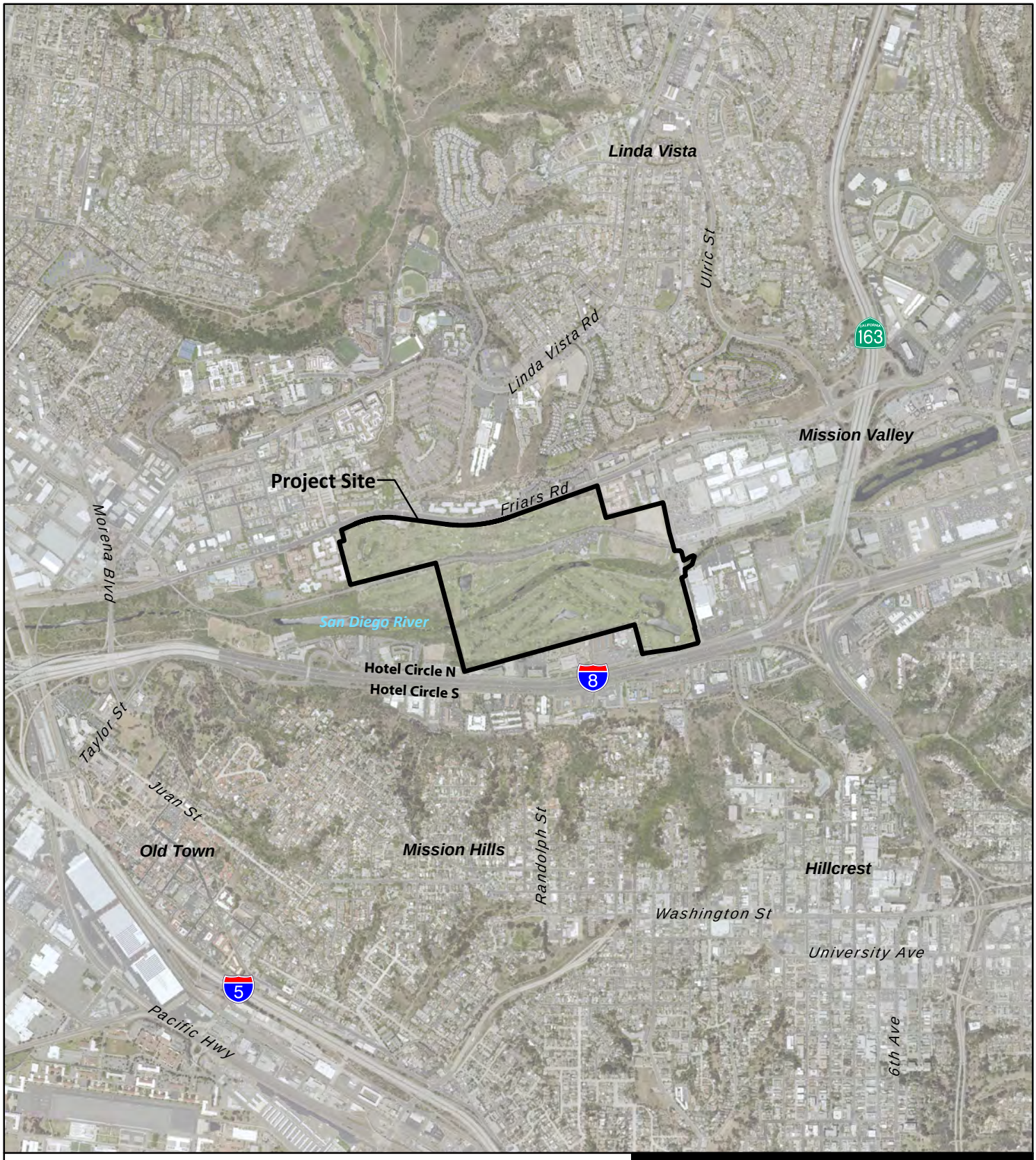

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Figure 2

Project Location

RIVERWALK PROJECT
WETLAND RESTORATION PLAN

Goshen Street
Via Las Cumbres
Friars Road
Riverwalk Drive
San Diego Trolley
Detention Basin
MTS Trolley Station
Existing Clubhouse to Remain
River Park
See Detail
Existing Outfall
Habitat Restoration Area
Detention Basin
River Park
Existing Bridge to Remain
50' No Use Buffer
Existing San Diego River Channel
Outfall
Detention Basin
Connect to Existing Outfall
Passive Park/Buffer
Street J (IOD)
Connect to Existing Outfall
50' No Use Buffer
Passive Park/Buffer
River Park
Habitat Restoration Area
Existing Bridge to Remain
Fashion Valley Road
Street U (IOD)
Hotel Circle North
8
Detail Area
0 50 100 Feet
Project Site
MHPA
San Diego River Trail
City Roadway IOD
Project Impacts
Existing Storm Drain
Proposed Storm Drain
Existing San Diego River Channel
Riverwalk Project Development
Fashion Valley Road Improvements
River Park - Active Park
River Park - Passive Park
50' No Use Buffer
Wetland Habitat Restoration
N
W E
S
0 175 350 Feet
ALDEN ENVIRONMENTAL, INC

Figure 3

Development Plan

RIVERWALK PROJECT
WETLAND RESTORATION PLAN

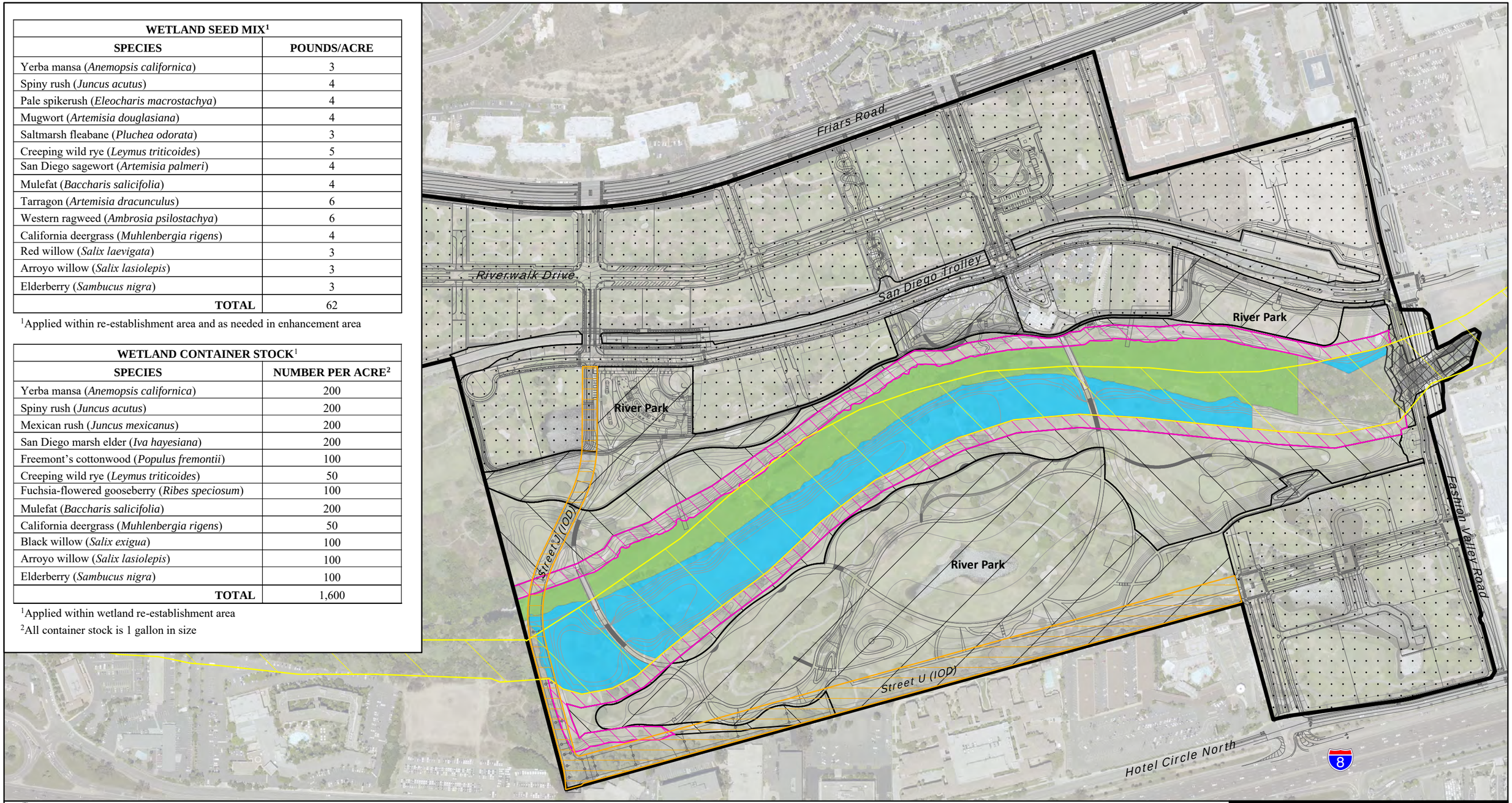
WETLAND SEED MIX[1]	
SPECIES	**POUNDS/ACRE**
Yerba mansa (*Anemopsis californica*)	3
Spiny rush (*Juncus acutus*)	4
Pale spikerush (*Eleocharis macrostachya*)	4
Mugwort (*Artemisia douglasiana*)	4
Saltmarsh fleabane (*Pluchea odorata*)	3
Creeping wild rye (*Leymus triticoides*)	5
San Diego sagewort (*Artemisia palmeri*)	4
Mulefat (*Baccharis salicifolia*)	4
Tarragon (*Artemisia dracunculus*)	6
Western ragweed (*Ambrosia psilostachya*)	6
California deergrass (*Muhlenbergia rigens*)	4
Red willow (*Salix laevigata*)	3
Arroyo willow (*Salix lasiolepis*)	3
Elderberry (*Sambucus nigra*)	3
TOTAL	62

[1]Applied within re-establishment area and as needed in enhancement area

WETLAND CONTAINER STOCK[1]	
SPECIES	**NUMBER PER ACRE[2]**
Yerba mansa (*Anemopsis californica*)	200
Spiny rush (*Juncus acutus*)	200
Mexican rush (*Juncus mexicanus*)	200
San Diego marsh elder (*Iva hayesiana*)	200
Freemont's cottonwood (*Populus fremontii*)	100
Creeping wild rye (*Leymus triticoides*)	50
Fuchsia-flowered gooseberry (*Ribes speciosum*)	100
Mulefat (*Baccharis salicifolia*)	200
California deergrass (*Muhlenbergia rigens*)	50
Black willow (*Salix exigua*)	100
Arroyo willow (*Salix lasiolepis*)	100
Elderberry (*Sambucus nigra*)	100
TOTAL	1,600

[1]Applied within wetland re-establishment area

[2]All container stock is 1 gallon in size



Riverwalk Project Limits
MHPA
City Roadway IOD

Riverwalk Project Development
Fashion Valley Road Improvements[1]
River Park - Active Park
River Park - Passive Park
50' No Use Buffer

Wetland Restoration
Existing San Diego River Channel Habitat Enhancement (9.92 ac)
Wetland Habitat Creation (12.51 ac)

[1] Includes temporary impact area during construction. Temporary impacts associated with the Fashion Valley Road improvements will be restored to native wetland habitat, in concurrence with the re-establishment measures identified in this plan.

N W E S
0 175 350
Feet

ALDEN ENVIRONMENTAL, INC

Figure 4

Wetland Restoration

RIVERWALK PROJECT
WETLAND RESTORATION PLAN

The goal in the habitat creation area within the new OHWM limits (restoration boundary) is to create a variable streambed adjacent to the existing low flow channel that would be ephemeral in nature but may also become intermittent depending upon rainfall, groundwater levels, and overflow conditions from the existing low flow channel. The proposed storm event inundation conditions (2-year event) are consistent with this goal.

A broad range of riparian scrub species that are appropriate for wetland/riparian habitat adjacent to the low-flow channel in the active channel area have been selected for the habitat creation effort. The range of species goes from true hydrophytes to transitional wetland/upland species. The intent is to provide a mosaic of wetland/riparian habitats that are best suited to the final conditions in the habitat creation area. The species selected also are prevalent upstream and downstream from the Project site, along the San Diego River. Overall, the vegetative goal is for a diverse riparian scrub community that is well adapted to variable water flow and rainfall conditions. This community also is adapted to the intermittent seasonal rainfall events, interspersed with relatively dry periods, that are characteristic of coastal San Diego County.

Additionally, the new surface elevation would be within approximately 4 to 8 feet of the existing groundwater level, based on the available soils data collected previously on the site. One goal for the restoration effort is to ensure that the grading does not go deep enough to breach the groundwater level as this could create a perennial surface ponded situation (i.e., the MTS site downstream and FSDRIP upstream), as opposed to a natural seasonal surface stream flow condition. The species identified for the habitat creation are relatively shallow-rooted (2 to 6 feet) and typically do not depend upon groundwater for their survival. The deeper-rooted species may reach down to the groundwater level, but typically they will stop in the capillary fringe area above the groundwater layer. The wetland vegetation in the habitat creation area may use groundwater in dry years with little rainfall; however, the intent of the effort is to not create habitat that is dependent upon groundwater for its long-term persistence.

More specifically, the area of proposed wetland habitat creation is in alignment with the previous San Diego River channel (pre-MTS project) on site and is of a similar width as that of the wetland habitat located just off site and downstream. As such, the habitat creation is within the limits of the larger San Diego River system and would not result in an attempt to convert historic upland habitat to wetland habitat.

Finally, the above approach is in line with other projects approved by the regulatory agencies in the region. An example is the off-site wetland habitat mitigation effort for the Merge 56 Development Project. That effort is in the final approval stages with the Corps and Regional Water Quality Control Board, would occur in McGonigle Creek, and has much the same approach and characteristics as the proposed Riverwalk Project effort.

4.0 RESTORATION DESIGN

To meet MSCP B15 requirement, this Plan recommends measures to expand existing wetland/riparian features within and adjacent to the existing San Diego River channel. The restoration includes 9.92 acres of wetland habitat enhancement and 12.51 acres of wetland habitat creation (Figure 4). It is anticipated that the functions and services of the enhanced and created habitats within the restoration area would be increased.

4.1 WETLAND ENHANCEMENT

The river channel within the restoration area supports southern cottonwood-willow riparian forest, southern willow scrub, coastal and valley freshwater marsh, emergent wetland, and open water, much of which has been affected by, for example, non-native plant species and trash. The Project would preserve and enhance these habitat areas, many of which are in a disturbed condition. The existing channel would stay in place, and no grading would occur within its limits. Enhancement activities would include removing weeds, trash, cement, and other materials that have been dumped within and adjacent to the stream over time. Native seed also will be installed within the enhancement areas, as necessary, to help ensure improved habitat function.

4.2 WETLAND CREATION

In addition to enhancing the preserved wetlands, an additional 12.51 acres of wetland habitat area will be created by expanding the width of the existing channel. Expansion of the channel will involve removal of all of the golf course facilities including greens, holes, sand traps, etc. Once the facilities have been removed, the creation area will be graded to create an expanded channel area that is at an elevation within 2 to 4 feet of the existing river channel bottom. This grading will occur adjacent to the existing channel but will not breach the channel or encroach upon any of the existing wetland habitat. The habitat goal is to create a mosaic of site appropriate wetland/riparian-associated habitats through the installation of a broad species mix. The habitats to become established are anticipated to range from freshwater marsh adjacent to existing channel that experience steady water flows to riparian scrub and forest habitats along the periphery of the wetland creation area.

4.3 TARGET FUNCTIONS AND SERVICES

The goals of this restoration effort are to enhance existing wetland habitat and create wetland habitats that would increase the habitat quantity and quality along the San Diego River. With the completed restoration, it is expected that functions and services (water filtration, sensitive wildlife and plant habitat, etc.) would be improved and increased by the end of the restoration effort. This realization of target functions and values would be documented by conducting quantitative and qualitative analyses throughout the monitoring period. This effort would meet the City's B15 requirement and enable wetland habitat mitigation bank to be created.

5.0 IMPLEMENTATION PLAN

The on-site habitat enhancement and creation will consist of several components, including:

- Initial site preparation
- Enhancement of preserved wetland areas
- Creation of additional wetland/riparian areas habitats

5.1 RATIONALE FOR EXPECTING IMPLEMENTATION SUCCESS

The site selected for the restoration effort currently supports wetland habitat along the existing San Diego River channel and within the historic San Diego River limits. This Plan would enhance and expand the limits of wetland/riparian area and would improve habitat quality and functions. The hydrological analyses (Change Consultants 2019) concluded that the site would be inundated regularly, the built condition would be above groundwater (maintain surface flow condition), the soils are suitable for the proposed vegetation, and the habitat creation area currently supports golf course. Given the above, suitable parameters for successful implementation occur on the site. Refer to Section 3.3 of this Plan for additional site suitability information.

5.2 RESPONSIBLE PARTIES

5.2.1 Project Proponent

SD Riverwalk, LLC (or the owner at the time of implementation) will be responsible for financing the installation, maintenance, and monitoring of the restoration measures.

5.2.2 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of this mitigation program will be the responsibility of a restoration specialist with a minimum of 5 years of habitat restoration experience. The restoration specialist will educate all participants with regard to program goals and directly oversee all aspects of the project. In addition, the specialist will collect pre-condition biological information (photographic documentation), conduct all monitoring data collection, annual assessments, and prepare all required reports. If necessary, the restoration specialist will provide the project proponent and contractor with a brief report, including a written list of items in need of attention following each monitoring visit. The contractor will be responsible for carrying out all required measures in a timely manner. The restoration specialist will notify the contractor and responsible party if any requested remediation is not addressed. A checklist with the main tasks and responsibilities is included in Table 1.

Table 1 RESTORATION PLAN CHECKLIST						
Construction Phase	**Task**	**Applicable Parties**				
		Project Proponent	**Grading Contractor**	**Installation Contractor**	**Maintenance Contractor**	**Restoration Specialist**
Pre-construction	Order seed and container stock			X		
	Attend pre-construction meeting	X	X	X		X
	Document pre-impact conditions					X
	Identify site limits and staging area					X
Installation	Delineate boundaries			X		X
	Remove existing facilities		X			X
	Grade creation area		X			X
	Install container stock and seed			X		X
	Install irrigation system			X		X
	Prepare/submit as-built report					X
Five-year Maintenance & Monitoring Period	Conduct maintenance monitoring and annual monitoring					X
	Maintain site for remainder of 5 years (or fewer than 5 years if success criteria are met sooner)				X	X

5.2.3 Installation/Maintenance Contractor

The installation and maintenance contractor(s) will have habitat restoration experience and will, under the direction of the restoration specialist, be responsible for completion of grading, pre-planting weed control, planting, seeding, and maintenance. The restoration specialist will educate the contractor(s) on the installation and maintenance of native plant species.

After the installation is complete, maintenance personnel will initiate the maintenance program under the direction of the restoration specialist. Maintenance crews will service the entire enhancement area regularly following installation. Service will include but not be limited to weed control, trash removal, watering, fence repair, dead plant replacement, and re-seeding. All activities conducted will be seasonally appropriate and approved by the restoration specialist. The maintenance crew will meet the restoration specialist at the site when requested and will perform all checklist items in a timely manner as directed by the restoration specialist. The restoration specialist will ensure that maintenance personnel are capable of discerning between native plant species and non-native weed species.

5.3 CONTRACTOR EDUCATION

Prior to the commencement of site activities, the contractor(s) will review all aspects of this Plan including permit requirements, site protection, maintenance inspections, landscape procedures, and monitoring. The restoration specialist will make the Contractor and all other contractors, subcontractors and the project supervisors aware of any agency permits and authorizations associated with the project. Copies of project permits will be kept on site at all times during periods of active work and must be presented to any agency personnel upon demand.

5.4 IMPLEMENTATION SCHEDULE

Implementation of the restoration would commence in conjunction with the grading for the Riverwalk Project. The grading and initial site preparation will be a component of the River Park component of the Riverwalk Project and shown on the final grading plans for that project. Installation of the habitat (seeding, planting, irrigation, etc.) and the 120-day plant establishment period will begin once all restoration area grading activities are complete. Habitat enhancement and creation activities are anticipated to take between 8 and 12 weeks to complete.

Installation activities would avoid the nesting seasons of the least Bell's vireo and light-footed Ridgway's rail (March 15 through September 15) and southwestern willow flycatcher (May 1 through September 1) should any of those species be present, and potentially affected, as determined during a protocol, pre-activity survey.

5.5 SITE PREPARATION

As described above, the initial site preparation will involve removal of the golf course facilities and grading of the areas adjacent to the river channel to achieve the target elevations for wetland restoration. Once the restoration area grading is complete, the site will be de-compacted to increase soil permeability and the potential for establishment of native habitats. Weeds, refuse, debris, and deleterious soil will be removed and disposed of in a licensed landfill.

5.6 FENCING

Prior to and during implementation (grading/planting) of the restoration effort, a temporary orange construction fence will restrict access to the creation/enhancement areas. Three-strand, barbless wire fences will be installed along the boundary of the restoration area, preventing OHV and pedestrian use of the preserve area. Steel signs will be attached to the fences that will provide notice, in both English and Spanish, that the area is an ecological preserve and that trespassing is prohibited. These wire fences will remain in place during the maintenance and monitoring period. Once the restoration effort is established and successful, the fences will be removed.

Permanent barriers will consist of boulders or deterrent vegetation, as well peeler log fencing that will be installed as part of the Riverwalk Project. These barriers will be located along the edge of the 50-foot no use buffer to deter entrance into the MHPA and wetland restoration area. Installation of these permanent barriers is not a component of this Plan.

5.7 WETLAND HABITAT

The target habitat within the wetland creation area has been designed to allow for a mosaic of wetland associated species to become established as determined by specific conditions. To this end, an overall wetland seed mix has been prepared that includes native wetland species that occur within wetland riparian scrub/forest habitats (mule fat scrub, southern willow scrub, freshwater marsh, etc.).

5.7.1 Wetland Seed Mix

Wetland seeding will take place within the entire creation area and as needed in the enhancement area (Figure 4). The wetland seed mix is presented in Table 2 and shown on Figure 4. The seed will be sourced from as close to the site as possible and includes plant species traditionally used by Native American tribes. The source and proof (tags) for all seed will be provided.

Table 2 WETLAND SEED MIX[1]	
SPECIES	**POUNDS/ACRE**
Yerba mansa (*Anemopsis californica*)	3
Spiny rush (*Juncus acutus*)	4
Pale spikerush (*Eleocharis macrostachya*)	4
Mugwort (*Artemisia douglasiana*)[2]	4
Saltmarsh fleabane (*Pluchea odorata*)	3
Creeping wild rye (*Leymus triticoides*)	5
San Diego sagewort (*Artemisia palmeri*)	4
Mulefat (*Baccharis salicifolia*)[2]	4
Tarragon (*Artemisia dracunculus*)	6
Western ragweed (*Ambrosia psilostachya*)[2]	6
Purple needlegrass (*Stipa pulchra*)	6
California deergrass (*Muhlenbergia rigens*)[2]	4
Red willow (*Salix laevigata*)[2]	3
Arroyo willow (*Salix lasiolepis*)[2]	3
Elderberry (*Sambucus nigra*)[2]	3
TOTAL	62

[1]Applied within creation area and as needed in enhancement area

[2]Plant species traditionally used by Native American tribes

A hydroseed slurry will be evenly applied in two stages such that an even, homogeneous distribution is made in each area. The first stage will include the seed, a small amount of fiber mulch, and dye. This application will help ensure that maximum seed/soil contact is made. A second layer will be applied immediately following the first. The second layer will include additional fiber mulch, dye, and a tackifier. The tackifier will serve to help bind seed and soil until germination. Hydroseed specifications are presented in Table 3.

Table 3 HYDROSEED APPLICATION SPECIFICATIONS		
Material	**First Application**	**Second Application**
Seed	As called for per site	N/A
Long fiber wood mulch	500 lbs/acre	1,000 lbs/acre
Dye	As necessary	As necessary
Tackifier	N/A	90 lbs/acre
Water	Sufficient to maintain slurry	Sufficient to maintain slurry

Hand seeding may be conducted in focused areas to help ensure targeted application of seed. Areas not treated with the hydroseed slurry will be hand seeded following hydroseeding to make sure all areas are seeded. These areas will be determined at the time of seeding and will include areas where hydroseeding may not be possible, where existing native plants may be negatively affected by the hydroseed slurry, or where it is thought that certain species may be appropriate in small areas. Seed of different species will only be mixed when they are to be applied to the same location.

Individual species may be seeded separately as directed by the restoration specialist. Hand broadcasters will be used to help ensure a consistent application of seed. An inert carrier (sand, sawdust) may also be mixed with the seed to help maintain consistency. Seeding will not be conducted during windy conditions. Seed will be raked into soil after application to help increase seed/soil contact.

5.7.2 Wetland Container Stock

In addition to seed, native container stock will be planted in the wetland creation area (Table 4). The container stock will be sourced from as close to the site as possible and includes plant species traditionally used by Native American tribes. If container stock is unavailable from the project vicinity, the restoration specialist may substitute species as necessary. The source and proof for all plant material will be provided. All container stock will be inspected and approved by the restoration specialist prior to being installed. Specifically, the restoration specialist will ensure that:

- The correct number, size, and species ordered are delivered;
- Plants are healthy and showing no sign of disease;
- Roots fill the containers, but are not root bound;
- There is no breakage of plants;
- Plants show no evidence of pests;
- Plants are in a state suitable for out-planting.

The restoration specialist will reject any plants not meeting these requirements.

Table 4
WETLAND CONTAINER STOCK[1]

SPECIES	NUMBER PER ACRE[2]
Yerba mansa (*Anemopsis californica*)	200
Spiny rush (*Juncus acutus*)	200
Mexican rush (*Juncus mexicanus*)	200
San Diego marsh elder (*Iva hayesiana*)	200
Freemont's cottonwood (*Populus fremontii*)[3]	100
Creeping wild rye (*Leymus triticoides*)	50
Fuchsia-flowered gooseberry (*Ribes speciosum*)	100
Mulefat (*Baccharis salicifolia*)[3]	200
California deergrass (*Muhlenbergia rigens*)[3]	50
Black willow (*Salix exigua*)[3]	100
Arroyo willow (*Salix lasiolepis*)[3]	100
Elderberry (*Sambucus nigra*)[3]	100
TOTAL	1,600

[1]Applied within wetland creation area
[2]All container stock is 1 gallon in size
[3]Plant species traditionally used by Native American tribes

The installation contractor will be responsible for planting all container stock within 4 days following delivery. Container stock staged on site will be placed in a protected area and watered regularly prior to planting. Container stock will be planted in such a way as to mimic a natural species distribution. The restoration specialist will specify the locations for all planting. Plants will be placed in natural groupings with appropriate spacing for the given species/target habitat type. Holes for each plant will be dug twice as deep and twice as wide as the container size. The hole will then be refilled to the halfway point, slightly compacted, and filled with water. Once all the water has soaked into the soil, the container stock will be planted such that the container plant soil level is slightly above ground level. Loose soil will be used to fill in the areas around the root ball and help ensure that there are no air spaces. Remaining soil will be used to create a watering basin around the plant.

5.7.3 Material Salvage

The seed and container stock identified above is intended to be implemented without using any native plant/soil material salvaged from the adjacent development project. If salvaged upland soil/plant material is made available to the restoration effort during the installation phase it will be incorporated to the extent practicable.

5.8 IRRIGATION

A temporary, above ground irrigation system will be installed within the habitat creation area. The system will provide head-to-head coverage to ensure adequate irrigation of both the installed seed mix and container stock species. The system will include timers and ground moisture sensors to help prevent over watering. The timers will be set to emulate a normal rainfall year in the event that actual rainfall does not reach normal levels.

5.9 WILDLIFE HABITAT ENHANCEMENT

As an aid to wildlife establishment within the restoration area, shelter for small animal species will be created. The first type of shelter involves placement of 20 half-inch thick plywood boards, measuring 2 x 4 feet. These boards will provide shade, cover, and nesting locations for species including mice, lizards, snakes, and numerous invertebrate species (e.g., insects, spiders, etc.). The boards also provide an opportunity to monitor the wildlife usage of the site. During regularly scheduled monitoring visits, the restoration specialist will be able to lift each board and note the species present. There are no specific monitoring requirements or performance standards for the boards. The boards are intended to be left in place and allowed to break down naturally.

Additionally, shrub and brush material available on site will be collected by hand and stacked into low brush piles to provide additional cover for small animals. Each pile will be approximately 4 to 6 feet in diameter and 2 to 3 feet in height, provided sufficient material is available. This can be especially beneficial during the initial stages of the effort when there will be no cover available for small animals to utilize. The brush piles will be distributed throughout the restoration area. The final number and size of piles will depend upon the amount of material available on site. There are no specific monitoring requirements or performance standards for the brush piles.

5.10 AS-BUILT CONDITIONS

The revegetation specialist shall prepare and submit a map using showing the as-built conditions of the restoration area within 6 weeks of completion of site preparation and planting. Areas of grading, seeding, and planting shall be shown on the map.

6.0 MAINTENANCE PLAN

6.1 HABITAT MAINTENANCE ACTIVITIES

A 5-year maintenance program is proposed to help ensure the successful establishment and persistence of the enhanced and created habitat. The length of the maintenance program may be shortened if the mitigation program is deemed successful before 5 years have elapsed. The maintenance program will involve removal of trash, weed control, fence and signage repair/replacement, and any remedial measures deemed necessary for restoration program success (e.g., re-seeding and recontouring).

Maintenance activities would avoid the nesting seasons of the least Bell's vireo and light-footed Ridgway's rail (March 15 through September 15) and southwestern willow flycatcher (May 1 through September 1) should any of those species be present, and potentially affected, as determined during a protocol, pre-activity survey.

6.1.1 Trash Removal

The maintenance contractor will remove any trash encountered within the restoration area during every maintenance event and dispose of it in a legally acceptable fashion.

6.1.2 Weed Control

Particular maintenance emphasis will be placed on pro-active weed control within the restoration area. All weed species observed during restoration activities will be considered invasive and targeted for removal. All workers conducting weed removal activities will be educated to distinguish between native and non-native species, with special attention paid to rare and endangered plant species.

Weeds will be removed by hand or with small machinery (e.g., line trimmers) whenever possible, but focused herbicide application may be used if needed and requested by the restoration specialist. Herbicides will only be applied by workers licensed to use those chemicals. Additionally, herbicide will not be used during wet or windy conditions.

Weeds will be removed from the restoration area and disposed of in a legal manner. All weeds will be removed prior to reaching 12 inches in height or before developing seed. Leaf and branch drop of native species should be left in place and not removed from the site.

6.2 HABITAT MAINTENANCE SCHEDULE

Regular maintenance, trash removal, and weed control of the restoration area will be conducted during the first 5 years following implementation of the mitigation program or until the restoration program is deemed successful. Maintenance personnel will visit the site at least monthly for the 5-year maintenance and monitoring period. Additional visits will be conducted as directed by the restoration specialist during the rainy season (generally December through May) each year to keep weeds under control.

7.0 PERFORMANCE STANDARDS

The following sections provide performance standards to determine the successful completion of the 5-year maintenance and monitoring program, which could be less than 5 years in length if success criteria are met before 5 years have elapsed. Attainment of these standards indicates the restoration area is progressing toward the habitat functions and services specified for this Plan. Methods used to measure these performance standards are described in the following text. If the restored areas fail to meet the Year 5 standards after the full monitoring term, a specific set of remedial measures will be developed, implemented, and the monitoring and maintenance period would be extended until all Year 5 standards are met or as otherwise provided in this Plan. If the site does not meet Year 5 standards, the monitoring and maintenance period would be extended a full year until all are met. Only when the entire restoration site has attained the Year 5 standards will the entire site be signed off.

7.1 SPECIES SURVIVORSHIP/CONTAINER STOCK

During each annual monitoring event, survivorship of the container stock will be measured, and there will be no less than 80 percent survival of the initial container plants installed for each monitoring and maintenance year unless their function has been replaced by natural recruitment.

7.2 NATIVE SPECIES RICHNESS

Species richness (i.e., the number of species in the area assessed) success criteria have been established to determine the success of the restoration effort. Species richness will be measured by visual assessment in Years 1 and 2, and by quantitative transect data in Years 3, 4, and 5. No specific richness criteria are established for Years 1 or 2, but annual success criteria for species richness in Years 3, 4, and 5 are provided in Table 5. Corrective measures will be implemented in areas not meeting the species richness goals in any given year.

Table 5
SPECIES RICHNESS SUCCESS CRITERIA[1]

Year 3	Year 4	Year 5
10	12	12

[1]Richness is the number of species in an area assessed. These are pre-determined, non-relative values.

7.3 NATIVE SPECIES COVER

Native species percent cover success criteria have also been established to determine success of the restoration effort. Species cover will be measured by visual assessment in Years 1 and 2, and by quantitative transect data in Years 3, 4, and 5. No specific cover criteria are established for Years 1 or 2, but annual success criteria for species richness in Years 3, 4, and 5 are provided in Table 6. Corrective measures will be implemented in areas not meeting the species richness goals in any given year.

Table 6
NATIVE SPECIES COVER SUCCESS CRITERIA[1]

Year 3	Year 4	Year 5
40	60	70

[1]Pre-determined, non-relative values

7.4 WEED COVER

General and target weed cover success criteria have been established for the restoration effort. Given the size of the area and the extent of the weed seed bank, 100 percent weed eradication for all weed species is not a realistic goal (some species are highly invasive, and others are easier to eradicate). Therefore, species in Table 7 are zero tolerance species and will be controlled at 100 percent on a yearly basis. Other non-native species are more ubiquitous and can never be completely eliminated and will, therefore, be managed to a level of 10 percent or less. If the weed cover success criteria are not met in any given year, then remedial measures will be conducted.

Table 7
ZERO TOLERANCE WEED SPECIES

Latin name	Common name	Cal-IPC Rating[1]
Atriplex semibaccata	Australian saltbush	M
Carpobrotus spp.	ice plant, hottentot fig	H/M
Cynodon dactylon	Bermuda grass	M
Euphorbia lathyris	gopher plant	N/A
Foeniculum vulgare	fennel	H
Hordeum spp.	barley	M
Nicotiana glauca	tree tobacco	M
Ricinus communis	castor bean	L
Salsola tragus	Russian thistle	L
Silybum marianum	milk thistle	L
Sorghum halepense	Johnson grass	N/A
Xanthium strumarium	cocklebur	N/A

[1]H= High invasiveness, M= Moderate invasiveness, L= Low invasiveness N/A= Not listed.

8.0 MONITORING PLAN

8.1 INSTALLATION MONITORING

The restoration specialist will be on site daily during the 120-day plant establishment period to direct all habitat restoration activities including site preparation, weed control, seeding, planting, and watering. Upon completion, the restoration specialist will prepare an as-built map and letter to confirm that the 5-year maintenance and monitoring period may begin.

8.2 MAINTENANCE MONITORING

The restoration specialist will conduct regular maintenance monitoring visits during the 5-year maintenance period. Visits will be conducted monthly in Year 1, every other month in Years 2 to 3, and quarterly in Years 4 to 5. Additional visits may be required as conditions warrant. During each visit, the restoration specialist will assess the condition of the site and identify remedial measures as necessary. A brief monitoring memo will be prepared and submitted to the City's Monitoring and Coordination (MMC) Section and Maintenance Contractor following each maintenance monitoring visit.

8.3 ANNUAL MONITORING

Annual monitoring visits will be conducted by the restoration specialist in the fall during the 5-year maintenance period. During each annual monitoring, the success of the restoration effort will be evaluated, and species richness and cover data will be collected. In Years 1 and 2, species richness and cover will be determined by visual assessment. In Years 3 through 5, quantitative transect data will be collected within the restoration area.

Quantitative transect data will be collected using the point intercept line transect sampling methods described in the California Native Plant Society's Field Sampling Protocol (Sawyer and Keeler-Wolf 1995). Four 50-meter (m) long sampling transects will be established in Year 3 within the creation area. The ends of each transect will be marked with a re-bar stake and recorded with a Global Positioning System (GPS) unit.

Species cover will be determined by dividing each transect into 50 half-meter intervals. A point will be projected into the vegetation at each interval, and any species intercepted by the point will be recorded. Species also will be divided into herb (0 to 60 centimeters [cm]), shrub (60 cm to 3 m), and tree (greater than 3 m) layers. Percent cover will be measured by dividing the number of hits by the number of possible hits. Total native and non-native cover values will be determined separately.

Native species richness (the number of species) will be calculated by counting all of the species encountered within a 5-m wide belt transect along each transect (2.5 m on each side). All plants observed will be categorized by origin (native/non-native) and height layer.

Photographs will be taken each year from the same photograph points used prior to initiation of site preparation. The photographs will help track project progress over time and will be included in the annual report each year.

8.4 ANNUAL REPORTS

As part of the monitoring program, annual reports will be prepared and submitted to the City's MMC Section and Wildlife Agencies (as applicable per resource agency permitting) by the restoration specialist that evaluate the success of the restoration effort to date, along with any recommendations for future work that may be deemed necessary. Each annual monitoring report will include data collected throughout the year in addition to the annual monitoring visit. To detect the overall trend of the restoration, the annual monitoring report will contain comparisons of the monitoring data for all of the years that data were collected.

8.5 REMEDIAL MEASURES/ADAPTIVE MANAGEMENT

If the restoration is not progressing as desired, corrective measures may be implemented. Corrective measures may include, but are not limited to, additional planting or seeding, altered maintenance effort, and increased watering regime.

8.6 MONITORING SCHEDULE

As described above, monthly inspections of the restoration and maintenance effort would be performed during Year 1, every other month during Years 2 and 3, and quarterly for the remainder of the 5-year maintenance and monitoring period. The first annual botanical monitoring event will occur in the first winter following installation. Reports will be prepared and submitted to the City's MMC Section and Wildlife Agencies within 3 months of each annual monitoring visit.

9.0 COMPLETION OF PROGRAM

9.1 NOTIFICATION OF COMPLETION

The permittee shall notify the City and Wildlife Agencies upon the restoration achieving the Year 5 performance standards through the submittal of the final monitoring report.

9.2 CITY CONFIRMATION

After receipt of the final monitoring report, the City and Wildlife Agencies may inspect the restoration to determine if the enhancement and creation have been conducted in accordance with this Plan.

10.0 CONTINGENCY MEASURES

10.1 INITIATING PROCEDURES

An integral part of a successful mitigation program is the ability to detect problems with it early in the process, determine the cause of the problem, and attempt to modify the program to accommodate emerging issues or situations. Minor problems, such as trash, vandalism, isolated instances of plant mortality, or small-scale weed or pest infestations will be rectified as they are discovered during routine site monitoring and would not warrant the implementation of contingency measures.

If a performance standard is not met for all or any portion of the mitigation in any given year, or if the final performance standards are not met, the restoration specialist will prepare an analysis of the cause(s) of failure, and if determined necessary by the participating agencies, propose remedial measures for approval. These measures may include supplemental site grading, manipulation, planting, changes to the plant palettes, adjustment of the management of the site or a re-evaluation of species composition or other design changes. Additionally, the mitigation site is located within a dynamic riverine system that is subject to seasonal changes based on rainfall patterns and flood conditions. Assessments of target habitats will take into consideration riverine functionality in addition to specific success criteria and adaptive measures implemented to help ensure a functioning riverine system.

Should the mitigation fail as a result of a natural disaster such as an earthquake or flood, the project proponent will still be held responsible for any measures that are required to re-establish the mitigation. The project proponent is responsible to have the site meet performance standards in order to receive sign-off, regardless of the problems encountered.

The project proponent shall be responsible for all costs associated with any remedial measures.

10.2 RESPONSIBLE PARTIES

The project proponent shall be the responsible party required to implement remedial measures.

11.0 REFERENCES

Chang Consultants. 2019. Preliminary Drainage Report for Riverwalk-Vesting Tentative Map No. 2046680. July 16.

Lawlor, S.M. 2004. Determination of Channel-Morphology Characteristics, Bank-full Discharge, and Various Design-Peak Discharges in Western Montana. Scientific Investigations Report 2004-5263. U.S. Department of the Interior. U.S. Geological Survey in cooperation with the Montana Department of Transportation and the U.S. Department of Agriculture-Forest Service. Reston, Virginia.

U.S. Army Corps of Engineers. 2011. Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region. Curtis, K. E., Lichvar, R.W., & Dixon, L.E. Washington, DC: U.S. Army Engineer Research and Development Center.

APPENDIX B

LEAST BELL'S VIREO, SOUTHWESTERN WILLOW FLYCATCHER REPORT

2018 Report
U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Least Bell's Vireo (*Vireo bellii pusillus*) and Southwestern Willow Flycatcher (*Empidonax traillii extimus*) for the Riverwalk Project

Prepared for:

U.S. Fish and Wildlife Service
2177 Salk Avenue, Ste. 250
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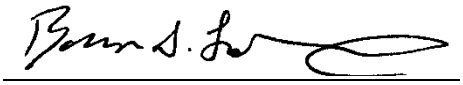
Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 92104

July 31, 2018

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.



Brian Lohstroh (TE-063608)

ALDEN
ENVIRONMENTAL, INC

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INTRODUCTION

This report presents the results of U.S. Fish and Wildlife Service (USFWS) protocol presence/absence surveys conducted by Alden Environmental, Inc. for least Bell's vireo (*Vireo bellii pusillus*; LBVI) and southwestern willow flycatcher (*Empidonax traillii extimus*; SWWF) on the Riverwalk Project site.

The approximately 195 acre Riverwalk property is located in the city of San Diego (City) and is bounded by Hotel Circle to the south, Fashion Valley Road to the East, and Friars Road to the North. The site supports an active golf course and is surrounded on all sides by developed land. The San Diego River runs through the site.

METHODS

Permitted biologist and subcontractor Brian Lohstroh (TE-063608-5) conducted the LBVI and SWWF surveys sequentially with the flycatcher surveys first, and the vireo surveys conducted afterwards, according to the 2016 combo guidance suggested by the USFWS for permitted biologists (USFWS 2001, Sogge *et al*. 2010-via email 2016).

The LBVI survey guidelines require eight surveys, ten days apart between April 10 and July 31. The SWWF protocol includes performing five surveys spread across three specific survey periods. The SWWF protocol requires conducting one survey between May 15 and May 31, two surveys between June 1 and June 24, and two surveys between June 25 and July 17. Each survey covered approximately 12 acres of suitable habitat primarily associated with the San Diego River.

Avian species were identified aurally or with the aid of 8x42 power binoculars. Recorded SWWF vocalizations were broadcast only to initially detect SWWF. Special status species detected were recorded with a GPS device accurate to within ten meters. The size of the property and the extent of appropriate habitat are such that the site could be surveyed in its entirety during each of the survey visits.

VEGETATION COMMUNITIES

The riparian habitat on site is moderate quality for the LBVI and of low to moderate quality for SWWF. The majority of the suitable riparian habitat on site is associated with the San Diego River, which is dominated by dense willows (*Salix gooddingii* and *Salix lasiolepis*). The suitable habitat is broken up by patches of freshwater marsh and non-native species such as giant reed (*Arundo donax*), Myoporum (*Myoporum laetum*), Eucalyptus (*Eucalyptus* spp.) and palm trees (*Washingtonia* sp*., Phoenix canariensis*). Successional habitat and a well-developed herbaceous understory preferred by these riparian bird species is generally lacking due to the channelized nature of the river in this area and surrounding uses (*i.e.,* golf course, developed areas).

SURVEY RESULTS

A solitary least Bell's vireo was detected in a similar area as previously detected in the 2015 survey on July 9, 2018. It appeared to be a transient male and was tracked as it moved upstream. The individual LBVI sang occasionally and was no longer detected at the end of the survey

A single willow flycatcher was detected on May 17, 2018; however, because its call sounded like that of the northwestern subspecies and because the survey was conducted during the migration period, it was determined to be a migrant and therefore the SWFL surveys were negative.

The federal and state endangered light-footed Ridgeway's rail (*Rallus obsoletus levipes*) was observed on site during the May 15, 2018 and June 1, 2018 visits. No other listed species were observed. Species of Concern (SCS) observed during the survey visits included Vaux's swift (*Chaetura vauxi*), Clark's marsh wren (*Cistothorus palustris clarkae*), and yellow-breasted chat (*Icteria virens*). Several non-native brown-headed cowbirds (*Molothrus ater*) also were observed during the survey visits.

Dates, times, and weather conditions at the start and end of each survey are presented in Appendix A, the WIFL survey form is included as Appendix B, and a list of avian species detected on site is provided in Appendix C.

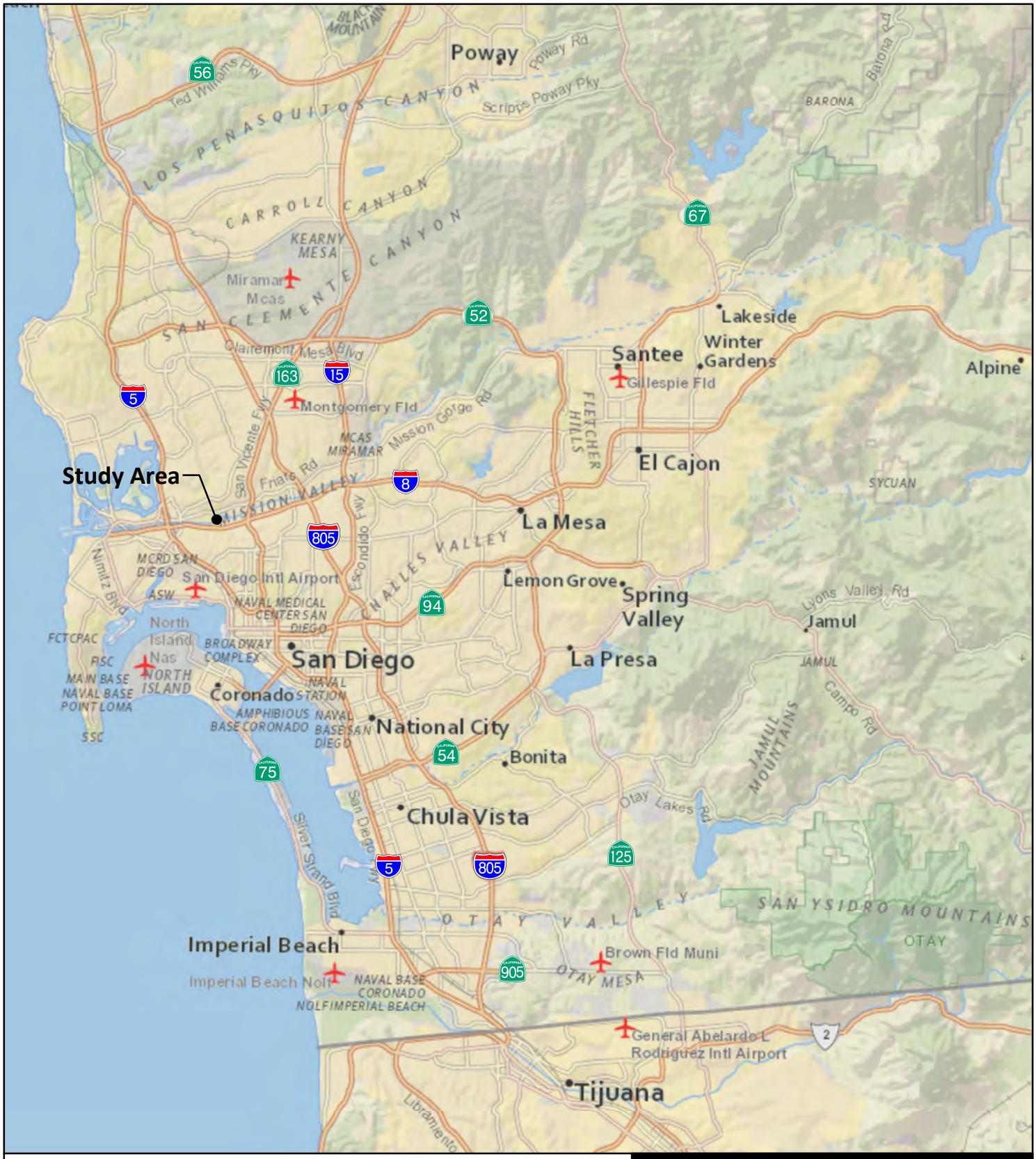
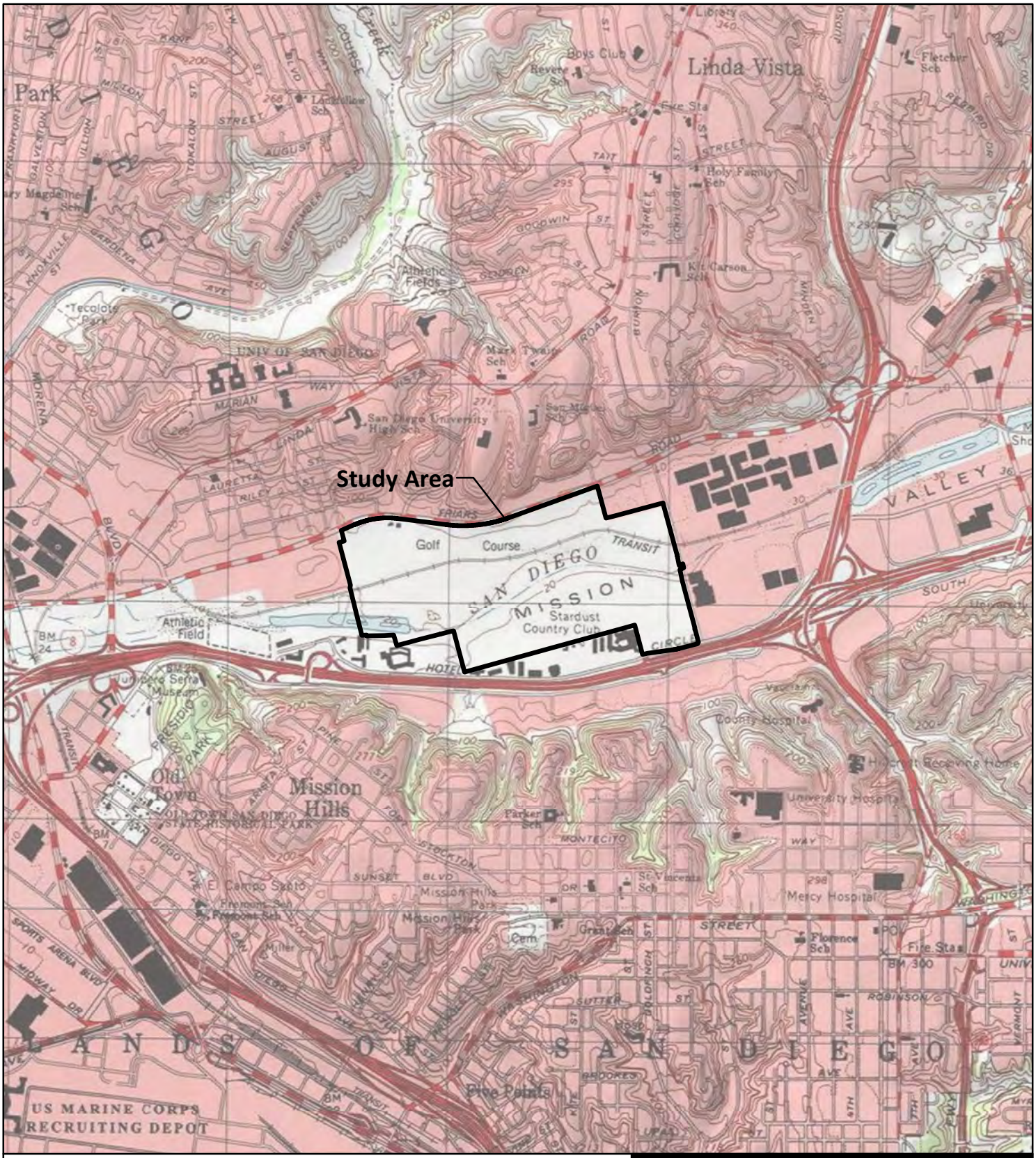


Figure 1

Regional Location

RIVERWALK PROJECT
2018 LBV/SWWF FOCUSED SURVEY



Source: USGS 7.5' Quadrangles (La Jolla, Point Loma); Copyright:© 2013 National Geographic Society, i-cubed

Figure 2

Project Location

RIVERWALK PROJECT
2018 LBV/SWWF FOCUSED SURVEY

ALDEN ENVIRONMENTAL, INC

Study Area
Adjacent Buffer Survey Area

Wetland/Riparian Vegetation Communities
- Southern Cottonwood-willow Riparian Forest
- Disturbed Southern Cottonwood-willow Riparian Forest
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Coastal and Valley Freshwater Marsh
- Emergent Wetland
- Open Water

Upland Vegetation Communities
Other Uplands (Tier IV)
- Disturbed Land

Land Cover
- Urban/Developed

Sensitive Avian Species Observed
- Least Bell's vireo (FE/SE)
- Willow flycatcher (SE)
- Light-footed Ridgway's rail (FE/SE)
- Vaux's swift (SSC)
- Clark's marsh wren (SSC)
- Yellow-breasted chat (SSC)
- Yellow warbler (SSC)
- Osprey (WL)
- Double-crested cormorant (WL)

N W E S

0 175 350 Feet

ALDEN ENVIRONMENTAL, INC

Figure 3

Survey Results

RIVERWALK PROJECT
2018 LBV/SWWF FOCUSED SURVEY

REFERENCES

Bowman, R. 1973. Soil Survey of the San Diego Area. USDA in cooperation with USDI, UC Agricultural Experiment Station, Bureau of Indian Affairs, Department of the Navy, and the U.S. Marine Corps.

USFWS. 2016. Least Bell's Vireo (*Vireo bellii pusillus*) Survey Guidelines. April 28.

USFWS. 2001. Least Bell's Vireo (*Vireo bellii pusillus*) Survey Guidelines. January 19.

USFWS. 2000. Southwestern Willow Flycatcher (*Polioptila californica californica*) Survey Protocol. June 22.

Appendix A

SUMMARY OF FIELD SURVEY CONDITIONS
RIVERWALK LBVI AND SWWF SURVEYS 2018

Table 1
SURVEY INFORMATION

Date	**Survey Personnel**	**Time on Site Start/Stop**	**Weather Conditions** Cloud Cover, Temperature, Wind (start/stop)	**Survey Type**
4/10/18	Brian Lohstroh	0615-1045	10% 55°F, wind 0-1 mph/ 5% 74°F, wind 0-5 mph/	LBVI 1
4/20/18	Brian Lohstroh	0630-1100	0% 53°F, wind 0-2 mph/ 0% 64°F, wind 2-6 mph/	LBVI 2
5/4/18	Brian Lohstroh	0600-1045	0% 54°F, wind 0-1 mph/ 0% 70°F, wind 3-5 mph/	LBVI 3
5/17/18	Brian Lohstroh	0600-1000	30% 59°F, wind 0-1 mph/ 70% 67°F, wind 3-7 mph/	SWFL 1
5/17/18	Brian Lohstroh	1000-1100	70% 67°F, wind 3-7 mph/ 30% 72°F, wind 3-7 mph/	LBVI 4
6/1/18	Brian Lohstroh	0545-1000	0% 62°F, wind 0-1 mph/ 0% 70°F, wind 2-5 mph/	SWFL 2
6/1/18	Brian Lohstroh	1000-1100	0% 70°F, wind 2-5 mph/ 0% 71°F, wind 3-7 mph/	LBVI 5
6/11/18	Brian Lohstroh	0620-1000	100% 63°F, wind 0-1 mph/ 00% 69°F, wind 0-3 mph/	SWFL 3
6/11/18	Brian Lohstroh	1000-1100	10% 69°F, wind 0-3 mph/ 0% 72°F, wind 2-5 mph/	LBVI 6
6/25/18	Brian Lohstroh	0630-900	100% 64°F, wind 0-1 mph/ 50% 66°F, wind 0-2 mph/	SWFL 4
6/25/18	Brian Lohstroh	0900-1100	50% 66°F, wind 0-2 mph/ 0% 72°F, wind 2-5 mph/	LBVI 7
7/9/18	Brian Lohstroh	0600-0930	100% 73°F, wind 0-1 mph/ 100% 76°F, wind 0-5 mph/	SWFL 5
7/9/18	Brian Lohstroh	0930-1100	100% 76°F, wind 0-5 mph/ 100% 76°F, wind 0-3 mph/	LBVI 8

Appendix B

Willow Flycatcher Survey & Detection Form

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name Riverwalk Golf Course State CA County San Diego
USGS Quad Name La Jolla Elevation 6 (meters)
Creek, River, Wetland, or Lake Name San Diego River
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? *Yes* X *No* ____

Survey Coordinates: Start: E 484049 N 3625163 UTM Datum WGS84 (See instructions)
Stop: E 482591 N 3624928 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
Survey # 1 Observer(s) B. Lohstroh	Date 5/17/18 Start 0600 Stop 1000 Total hrs 4	1	0	0	N	Potential Migrant detected, "Whit" and "Fitz-bew" calls in response to recorded vocalization. 9 BHCO	# Birds	Sex	UTM E	UTM N
							1	U	483309	3625029
Survey # 2 Observer(s) B. Lohstroh	Date 6/1/18 Start 0545 Stop 1000 Total hrs 4.25	0	0	0	N	8 BHCO	# Birds	Sex	UTM E	UTM N
Survey # 3 Observer(s) B. Lohstroh	Date 6/11/18 Start 0620 Stop 1000 Total hrs 3.66	0	0	0	N	12 BHCO	# Birds	Sex	UTM E	UTM N
Survey # 4 Observer(s) B. Lohstroh	Date 6/25/18 Start 0630 Stop 0900 Total hrs 2.5	0	0	0	N	7 BHCO	# Birds	Sex	UTM E	UTM N
Survey # 5 Observer(s) B. Lohstroh	Date 7/9/18 Start 0600 Stop 0930 Total hrs 3.5	0	0	0	N	9 BHCO, 1 transient LBVI detected.	# Birds	Sex	UTM E	UTM N

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 17.9	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes ___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Brian Lohstroh Date Report Completed ____
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # CA SC-4230

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # 858-750-9300
Affiliation Lohstroh Biological Consulting, under contract with Alden Environmental, Inc. E-mail Brian@lohstrohbio.com
Site Name Riverwalk Golf Course Date Report Completed _____
Was this site surveyed in a previous year? Yes X No ___ Unknown ___
Did you verify that this site name is consistent with that used in previous years? Yes X No ___ Not Applicable ___
If site name is different, what name(s) was used in the past? _____
If site was surveyed last year, did you survey the same general area this year? Yes ___ No ___ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes X No ___ If no, summarize below.

Management Authority for Survey Area: Federal ___ Municipal/County ___ State ___ Tribal ___ Private X
Name of Management Entity or Owner (e.g., Tonto National Forest) Touchstone Golf

Length of area surveyed: 1.6 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

___ Native broadleaf plants (entirely or almost entirely, > 90% native)

X Mixed native and exotic plants (mostly native, 50 - 90% native)

___ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

___ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix goodingii, Salix lasiolepis.

Average height of canopy (Do not include a range): 5 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Survey conducted in conjunction with least Bell's vireo survey, which included 8 total visits to site. See attached report for all survey dates. LBVI survey conducted after SWWF survey on a given survey date.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Appendix C

AVIAN SPECIES DETECTED
RIVERWALK LBVI AND SWWF SURVEYS 2018

Code	Common Name	*Scientific Name*
CANG	Canada Goose	*Branta canadensis*
MALL	Mallard	*Anas platyrhynchos*
CITE	Cinnamon Teal	*Anas cyanoptera*
RBME	Red-breasted Merganser	*Mergus serrator*
RUDU	Ruddy Duck	*Oxyura jamaicensis*
CAQU	California Quail	*Callipepla californica*
PBGR	Pied-billed Grebe	*Podilymbus podiceps*
EUCD	Eurasian Collared-Dove[1]	*Streptopelia decaocto*
MODO	Mourning Dove	*Zenaida macroura*
VASW	Vaux's Swift (SSC)	*Chaetura vauxi*
WTSW	White-throated Swift	*Aeronautes saxatalis*
BCHU	Black-chinned Hummingbird	*Archilochus alexandri*
ANHU	Anna's Hummingbird	*Calypte anna*
RUHU	Rufous Hummingbird	*Selasphorus rufus*
ALHU	Allen's Hummingbird	Selasphorus sasin
RIRA	Light-footed Ridgway's Rail (FE, SE)	*Rallus obsoletus levipes*
AMCO	American Coot	*Fulica americana*
KILL	Killdeer	*Charadrius vociferus*
WEGU	Western Gull	*Larus occidentalis*
CATE	Caspian Tern	*Hydroprogne caspia*
DCCO	Double-crested Cormorant (WL)	*Phalacrocorax auritus*
GBHE	Great Blue Heron	*Ardea herodias*
GREG	Great Egret	*Ardea alba*
SNEG	Snowy Egret	*Egretta thula*
GRHE	Green Heron	*Butorides virescens*
BCNH	Black-crowned Night-Heron	*Nycticorax nycticorax*
OSPR	Osprey (WL)	*Pandion haliaetus*
COHA	Cooper's Hawk (WL)	*Accipiter cooperii*
RSHA	Red-shouldered Hawk	*Buteo lineatus*
RTHA	Red-tailed Hawk	*Buteo jamaicensis*
NUWO	Nuttall's Woodpecker	*Picoides nuttallii*
DOWO	Downy Woodpecker	*Picoides pubescens*
AMKE	American Kestrel	*Falco sparverius*
RCPA	Red-crowned Parrot[1]	*Amazona viridigenalis*
WEWP	Western Wood-Pewee	*Contopus sordidulus*
WIFL	Willow Flycatcher (SE)	*Empidonax traillii*

Appendix C

AVIAN SPECIES DETECTED
RIVERWALK LBVI AND SWWF SURVEYS 2018 (cont.)

PSFL	Pacific-slope Flycatcher	*Empidonax difficilis*
BLPH	Black Phoebe	*Sayornis nigricans*
SAPH	Say's Phoebe	*Sayornis saya*
ATFL	Ash-throated Flycatcher	*Myiarchus cinerascens*
CAKI	Cassin's Kingbird	*Tyrannus vociferans*
LBVI	Least Bell's Vireo (FE, SE)	*Vireo b. pusillus*
HUVI	Hutton's Vireo	*Vireo huttoni*
WAVI	Warbling Vireo	*Vireo gilvus*
AMCR	American Crow	*Corvus brachyrhynchos*
CORA	Common Raven	*Corvus corax*
TRES	Tree Swallow	*Tachycineta bicolor*
NRWS	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
CLSW	Cliff Swallow	*Petrochelidon pyrrhonota*
BARS	Barn Swallow	*Hirundo rustica*
BUSH	Bushtit	*Psaltriparus minimus*
HOWR	House Wren	*Troglodytes aedon*
MAWR	Clark's Marsh Wren (SSC)	*Cistothorus palustris clarkae*
BEWR	Bewick's Wren	*Thryomanes bewickii*
RCKI	Ruby-crowned Kinglet	*Regulus calendula*
WEBL	Western Bluebird	*Sialia mexicana*
SWTH	Swainson's Thrush	*Catharus ustulatus*
AMRO	American Robin	*Turdus migratorius*
NOMO	Northern Mockingbird	*Mimus polyglottos*
EUST	European Starling[1]	*Sturnus vulgaris*
CEDW	Cedar Waxwing	*Bombycilla cedrorum*
SBMU	Scaly-breasted Munia[1]	*Lonchura punctulata*
HOSP	House Sparrow[1]	*Passer domesticus*
HOFI	House Finch	*Haemorhous mexicanus*
LEGO	Lesser Goldfinch	*Spinus psaltria*
AMGO	American Goldfinch	*Spinus tristis*
OCWA	Orange-crowned Warbler	*Oreothlypis celata*
NAWA	Nashville Warbler	*Oreothlypis ruficapilla*
COYE	Common Yellowthroat	*Geothlypis trichas*
YEWA	Yellow Warbler	*Setophaga petechia*
YRWA	Yellow-rumped Warbler	*Setophaga coronata*
TOWA	Townsend's Warbler	*Setophaga townsendi*

Appendix C

AVIAN SPECIES DETECTED
RIVERWALK LBVI AND SWWF SURVEYS 2018 (cont.)

HEWA	Hermit Warbler	*Setophaga occidentalis*
WIWA	Wilson's Warbler	*Cardellina pusilla*
YBCH	Yellow-breasted Chat (SSC)	*Icteria virens*
SPTO	Spotted Towhee	*Pipilo maculatus*
CALT	California Towhee	*Melozone crissalis*
SOSP	Song Sparrow	*Melospiza melodia*
WCSP	White-crowned Sparrow	*Zonotrichia leucophrys*
GCSP	Golden-crowned Sparrow	*Zonotrichia atricapilla*
BHGR	Black-headed Grosbeak	*Pheucticus melanocephalus*
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*
BRBL	Brewer's Blackbird	*Euphagus cyanocephalus*
GTGR	Great-tailed Grackle	*Quiscalus mexicanus*
BHCO	Brown-headed Cowbird	*Molothrus ater*
HOOR	Hooded Oriole	*Icterus cucullatus*

[1]Introduced species
SSC: Califorinia Species of Special Concern
FE: Federally listed as Endangered
SE: California listed as Endangered
WL: California Watch List Species

APPENDIX C

PLANT SPECIES OBSERVED

Appendix C
PLANT SPECIES OBSERVED
Riverwalk Project

SCIENTIFIC NAME	COMMON NAME	Where Observed*
Adoxaceae	**Muskroot Family**	
Sambucus niwa ssp. *caerulea*	blue elderberry	SCWRF
Agavaceae	**Agave Family**	
**Agave* spp.	agaves	DL, U/D
Aizoaceae	**Fig-Marigold Family**	
**Mesembryanthemum crystallinum*	crystalline iceplant	DL, U/D
Amaranthaceae	**Amaranth Family**	
**Amaranthus albus*	white tumbleweed	DL
Atriplex canescens	fourwing saltbush	DL
Anacardiaceae	**Sumac Family**	
Malosma laurina	laurel sumac	SCWRF-d, DL
**Schinus terebinthifolius*	Brazilian pepper tree	SCWRF-d, SWS-d, DL, U/D
Toxicodendron diversilobum	poison oak	SCWRF-d
Apiaceae	**Carrot Family**	
**Apium graveolens*	celery	EW, FWM
**Conium maculatum*	poison hemlock	SCWRF-d, EW, DL
**Foeniculum vulgare*	fennel	SCWRF, SCWRF-d, DL
Apocynaceae	**Dogbane Family**	
Nerium oleander	oleander	DL, U/D
Araceae	**Duckweed Family**	
Pistia stratiotes	water lettuce	FWM
Araliaceae	**Ginseng Family**	
Hedera helix	English ivy	SCWRF-d
Arecaceae	**Palm Family**	
**Phoenix canariensis*	Canary Island date palm	SCWRF, SCWRF-d, U/D
**Washingtonia robusta*	Mexican fan palm	SCWRF, SCWRF-d, U/D
Asparagaceae	**Asparagus Family**	
Asparagus asparagoides	Florist's-smilax	SCWRF, SCWRF-d

Appendix C (cont'd)

SCIENTIFIC NAME	COMMON NAME	Where Observed*
Asteraceae	**Sunflower Family**	
Amblyopappus pusillus	pineapple weed	DL, U/D
Ambrosia psilostachya	western ragweed	SCWRF, DL
Artemisia californica	coastal sagebrush	SCWRF, DL
Artemisia douglasiana	Douglas' mugwort	SCWRF, SCWRF-d
Artemisia dracunculus	wild tarragon	SCWRF
Baccharis pilularis ssp. consanguinea	coyote brush	DL, U/D
Baccharis salicifolia	mule fat	SWS
**Bidens pilosa*	common beggar's tick	SCWRF, SCWRF-d
**Cirsium vulgare*	bull thistle	SCWRF, DL
**Glebionis coronaria*	crown daisy	SCWRF-d, DL
Encelia californica	bush sunflower	SCWRF, DL
Erigeron canadensis	horseweed	SCWRF, SCWRF-d, DL, U/D
Heterotheca grandiflora	telegraph weed	SCWRF, SCWRF-d, DL, U/D
**Helminthotheca echioides*	bristly ox-tongue	SCWRF-d, DL, U/D
**Lactuca serriola*	prickly lettuce	SCWRF-d, DL, U/D
Pluchea odorata var. *odorata*	fragrant marsh fleabane	SCWRF, SCWRF-d, SWS, FWM
Pluchea sericea	arrow weed	SCWRF, SCWRF-d
Pseudognaphalium californicum	California everlasting	DL
**Pseudognaphalium luteoalbum*	Jersey cudweed	DL
**Sonchus asper*	prickly sow-thistle	DL
**Sonchus oleraceus*	common sow-thistle	DL
Symphyotrichum subulatum	annual saltmarsh aster	SCWRF-d, DL
**Xanthium strumarium*	cocklebur	SCWRF-d, DL, U/D
Betulaceae	**Birch Family**	
Alnus rhombifolia	white alder	SCWRF, SCWRF-d, SWS-d
Boraginaceae	**Borage family**	
Heliotropium curassavicum var. *oculatum*	salt heliotrope	SCWRF-d, FWM, EW
Plagiobothrys acanthrocarpus	popcorn flower	SCWRF, DL
Brassicaceae	**Mustard Family**	
**Brassica nigra*	black mustard	SCWRF, SCWRF-d, DL , U/D
**Capsella bursa-pastoris*	shepherd's purse	DL, U/D
**Hirschfeldia incana*	short-pod mustard	SCWRF, SCWRF-d, DL, U/D
**Lepidium didymum*	lesser wart-cress	DL, U/D
**Lobularia maritima*	sweet alyssum	DL, U/D
**Raphanus sativa*	wild radish	SCWRF, SCWRF-d, DL, U/D
**Sisymbrium irio*	London rocket	SCWRF, SCWRF-d, DL, U/D
**Sisymbrium orientale*	hare's-ear cabbage	DL, U/D

Appendix C (cont'd)

SCIENTIFIC NAME	COMMON NAME	Where Observed*
Chenopodiaceae	**Goosefoot Family**	
Atriplex patula	spear oracle	SCWRF-d, FWM, DL
**Atriplex semibaccata*	Australian saltbush	DL
Atriplex lentiformis	big saltbush	SWS, DL
**Chenopodium album*	lamb's quarters	SCWRF-d, DL, U/D
**Salsola tragus*	Russian thistle	DL
Convolvulaceae	**Morning-glory Family**	
**Convolvulus arvensis*	bindweed	DL
Cyperaceae	**Sedge Family**	
Bolboschoenus maritimus	alkali bulrush	EW, FWM
Cyperus eragrostis	tall flatsedge	EW, FWM
Cyperus odoratus	fragrant flatsedge	EW, FWM
Schoenoplectus californicus	California bulrush	SCWRF, SCWRF-d, SWS, FWM, EW
Eleocharis acicularis	needle spike rush	EW
Eleocharis montevidensis	sand spike-rush	EW
Euphorbiaceae	**Spurge Family**	
**Euphorbia lathyris*	compass plant	FWM
**Euphorbia maculata*	spotted spurge	DL, U/D
**Euphorbia peplus*	petty spurge	DL, U/D
**Ricinus communis*	castor bean	SCWRF, SCWRF-d, SWS, DL, U/D
Fabaceae	**Pea Family**	
**Acacia* spp.	acacias	DL, U/D
* *Medicago polymorpha*	burclover	DL
**Melilotus alba*	white sweetclover	SCWRF-d, DL, U/D
**Melilotus indicus*	annual yellow sweetclover	DL
Fagaceae	**Oak Family**	
Quercus agrifolia	coast live oak	SCWRF
Juncaceae	**Rush Family**	
Juncus balticus ssp. *ater*	wire rush	EW
Juncus bufonius	toad rush	EW

Appendix C (cont'd)

SCIENTIFIC NAME	COMMON NAME	Where Observed*
Malvaceae	**Mallow Family**	
**Malva parviflora*	cheeseweed	DL, U/D
Myrsinaceae	**Myrsine Family**	
**Lysimachia arvensis*	scarlet pimpernel	DL, U/D
Myrtaceae	**Myrtle Family**	
**Eucalyptus camaldulensis*	red gum	SCWRF, SCWRF-d, DL, U/D
**Eucalyptus* sp.	eucalyptus	DL, U/D
Oleaceae	**Olive Family**	
**Fraxinus uhdei*	Shamel ash	SCWRF-d
Onagraceae	**Evening-Primrose Family**	
Epilobium ciliatum	slender willow herb	SCWRF, SCWRF-d
Oenothera elata ssp. *hirsutissima*	marsh evening primrose	SCWRF, SCWRF-d
Oenothera speciosa	beautiful evening primrose	EW, DL, U/D
* *Ludwigia hexapetala*	six petal water primrose	FWM
Oxalidaceae	**Oxalis Family**	
**Oxalis pes-caprae*	Bermuda buttercup	U/D
Papaveraceae	**Poppy Family**	
Fumaria officinalis	Fumitory	EW
Pinaceae	**Pine Family**	
**Pinus canariensis*	Canary Island pine	U/D
Plantaginaceae	**Plantain Family**	
**Bacopa monnieri*	herb of grace	FWM
**Plantago major*	common plantain	DL
Platanaceae	**Sycamore Family**	
Platanus racemosa	California sycamore	SCWRF, U/D

Appendix C (cont'd)

SCIENTIFIC NAME	COMMON NAME	Where Observed*
Poaceae	**Grass Family**	
**Arundo donax*	giant reed	SCWRF, SCWRF-d
**Bromus diandrus*	ripgut grass	DL, U/D
**Cenchrus setaceus*	African fountain grass	DL, U/D
**Cortaderia selloana*	pampas grass	SCWRF, SCWRF-d, DL, U/D
**Cynodon dactylon*	Bermuda grass	DL, U/D
Distichlis spicata	coast salt grass	EW
**Festuca perennis*	perennial rye grass	DL, U/D
**Hordeum murinum*	wild barley	DL, U/D
**Nassella tenuissima*	Mexican feather grass	SCWRF, SCWRF-d, DL, U/D
**Paspalum dilatatum*	Dallis grass	EW, DL
Paspalum distichum	knot grass	EW, U/D
**Polypogon monspeliensis*	rabbitsfoot grass	EW
Plumbaginaceae	**Leadwort Family**	
**Limonium perezii*	Canary Island sea-lavender	DL, U/D
Polygonaceae	**Buckwheat Family**	
Eriogonum fasciculatum	California buckwheat	DL
Eriogonum giganteum	giant buckwheat	DL
**Polygonum aviculare*	prostrate knotweed	DL
**Rumex crispus*	curly dock	SCWRF, SCWRF-d, SWS, EW
Rosaceae	**Rose Family**	
Rosa californica	California wild rose	SCWRF, SCWRF-d
**Rubus armeniacus*	Himalayan blackberry	SCWRF-d
Rubiaceae	**Madder Family**	
Galium aparine	common bedstraw	SCWRF-d
Salicaceae	**Willow Family**	
Populus fremontii ssp. *fremontii*	western cottonwood	SCWRF, SCWRF-d
Salix exigua var. *exigua*	narrow-leaf willow	SCWRF, SWS
Salix gooddingii	black willow	SCWRF, SWS
Salix laevigata	red willow	SCWRF, SWS
Salix lasiolepis	arroyo willow	SCWRF, SWS
Sapindaceae	**Soapberry Family**	
**Cupaniopsis anacardioides*	carrotwood	SCWRF-d, DL, U/D

Appendix C (cont'd)

SCIENTIFIC NAME	COMMON NAME	Where Observed*
Saururaceae	**Lizard's Tail Family**	
Anemopsis californica	yerba mansa	SCWRF, SCWRF-d, SWS
Scrophulariaceae	**Figwort Family**	
**Myoporum laetum*	Ngaio tree	SCWRF-d, DL, U/D
Simaroubaceae	**Quassia Family**	
**Ailanthus altissima*	tree-of-heaven	SCWRF, SCWRF-d, U/D
Solanaceae	**Nightshade Family**	
Datura wrightii	western Jimson weed	DL
**Nicotiana glauca*	tree tobacco	DL, U/D
Solanum americanum	common nightshade	SWS, DL
Solanum douglasiana	Douglas nightshade	SWS, DL
Tamaricaceae	**Tamarix Family**	
**Tamarix aphylla*	Athel tamarisk	DL
**Tamarix ramosissima*	tamarisk	SCWRF, SCWRF-d, SWS
Tropaeolaceae	**Nasturtium Family**	
**Tropaeolum majus*	nasturtium	U/D
Typhaceae	**Cat-tail Family**	
Typha domingensis	narrow-leaf cattail	FWM, EW
Typha latifolia	broad-leaf cattail	FWM
Urticaceae	**Nettle Family**	
**Urtica urens*	dwarf nettle	SCWRF, SCWRF-d
Vitaceae	**Grape Family**	
Vitis girdiana	wild grape	SCWRF, SCWRF-d
**Vitis vinifera*	wine grape	SCWRF, SCWRF-d

*Non-native or ornamental species.
DL=disturbed land
EW=emergent wetland
FWM, coastal and valley freshwater marsh
SCWRF=southern cottonwood-willow riparian forest
SCWRF−d=disturbed southern cottonwood-willow riparian forest
SWS=southern willow scrub
SWS−d=disturbed southern willow scrub
U/D=urban/developed

APPENDIX D

ANIMAL SPECIES OBSERVED OR DETECTED

ANIMAL SPECIES OBSERVED OR DETECTED
Appendix D

SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES	
Nympalidae – Brush-footed Butterflies	
Danaus plexippus	monarch
Nymphalis antiopa antiopa	mourning cloak
Papilionidae – Swallowtail Butterflies	
Papilio rutulus rutulus	western tiger swallowtail
Pieridae – Whites and Suphurs	
Colias alexandra harfordii	Harford's sulfur
Pieris rapae	cabbage white
VERTEBRATES	
Fishes	
Cyprinidae – Cyprinids	
Cyprinus carpio	common carp
Poeciliidae – Poeciliids	
Gambusia affinis	western mosquito fish
Amphibians	
Ranidae – True Frogs	
Rana catesbiana	bullfrog
Reptiles	
Emydidae – Pond Turtles	
Trachemys scripta elegans	red-eared slider
Phrynosomatidae – Spiny Lizards	
Sceloporus occidentalis	western fence lizard
Birds	
Accipitridae – Raptors	
**Accipiter cooperii*	Cooper's hawk
Buteo lineatus	red-shouldered hawk
Aegithalidae - Bushtits	
Psaltriparus minimus	bushtit
Anatidae – Dabbling Ducks	
Anas cyanoptera	cinnamon teal
Anas platyrhynchos	mallard
Branta canadensis	Canada goose
Mergus serrator	red-breasted merganser
Oxyura jamaicensis	ruddy duck
Apodidae – Swifts	
Aeronautes saxatalis	white-throated swift
**Chaetura vauxi*	Vaux's swift (observed off site)
Ardeidae - Herons	
Ardea alba	great egret
Ardea herodias	great blue heron
Butorides virescens	green heron
Egretta thula	snowy egret
Nycticorax nycticorax	black-crowned night heron

Appendix D (cont'd)

SCIENTIFIC NAME	COMMON NAME
Bombycillidae – Waxwings	
Bombycilla cedrorum	cedar waxwing
Cardinalidae - Cardinals	
Pheucticus melanocephalus	black-headed grosbeak
Charadridae – Banded Plovers	
Charadrius vociferous	killdeer
Columbidae – Doves and Pigeons	
Columba livia	rock dove
Streptopelia decaocto	Eurasian collard dove
Zenaida macroura	mourning dove
Corvidae – Corvids	
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Emberizidae – Sparrows, Longspurs, and Emberiza Buntings	
Melospiza melodia	song sparrow
Spizella passerine	chipping sparrow
Chondestes grammacus	lark sparrow
Pipilo crissalis	California towhee
Pipilo maculatus	spotted towhee
Zonotrichia atricapilla	golden-crowned sparrow
Zonotrichia leucophrys	white-crowned sparrow
Estrildidae – Estrildid Finches	
Lonchura punctulata	scaly-breasted munia
Falconidae – Falcons and Caracaras	
Falco sparverius	American kestrel
Fringillidae – Finches and Allies	
Haemorhous mexicanus	house finch
Carduelis psaltria	lesser goldfinch
Carduelis tristis	American goldfinch
Carduelis lawrencei	Lawrence's goldfinch
Hirundinidae - Swallows	
Hirundo pyrrhonota	cliff swallow
Hirundo rustica	barn swallow
Stelgidopteryx serripennis	northern rough-winged swallow
Tachycineta bicolor	tree swallow
Icteridae – Blackbirds and Allies	
Icterus cucullatus	hooded oriole
Agelaius phoeniceus	red-winged blackbird
Quiscalus mexicanus	great-tailed grackle
Euphagus cyanocephalus	Brewer's blackbird
Molothrus ater	brown-headed cowbird
Laridae – Gulls	
Larus californicus	California gull
Larus occidentalis	western gull

Appendix D (cont'd)

SCIENTIFIC NAME	COMMON NAME
Mimidae – Mockingbirds	
Mimus polyglottos	northern mockingbird
Odontophoridae – Quails	
Callipepla californica	California quail
Pandionidae – Ospreys	
**Pandion haliaetus*	osprey
Parulidae – Wood-warblers	
* *Icteria virens*	yellow-breasted chat
Geothlypis trichas	common yellowthroat
Oreothlypis ruficapilla	Nashville warbler
Setophaga coronata	yellow-rumped warbler
Setophaga occidentalis	hermit warbler
**Setophaga petechia*	yellow warbler
Setophaga townsendi	Townsend's warbler
Vermivora celata	orange-crowned warbler
Wilsonia pusilla	Wilson's warbler
Passeridae – Old World Sparrows	
Passer domesticus	house sparrow
Phalacrocoracidae – Cormorants and Shags	
* *Phalacrocorax auritus*	double-crested cormorant
Picidae – Woodpeckers and Allies	
Picoides nuttallii	Nuttall's woodpecker
Picoides pubescens	downy woodpecker
Podicipedidae – Grebes	
Podilymbus podiceps	pied-billed grebe
Psittacidae – True Parrots	
Amazonia viridigenalis	red-crowned parrot
Rallidae – Rails, Gallinules, and Coots	
Fulica americana	American coot
**Rallus obsoletus levipes*	light-footed Ridgway's rail
Regulidae – Kinglets	
Regulus calendula	ruby-crowned kinglet
Scolopcacidae - Sandpipers	
Actitus macularius	spotted sandpiper
Sterninae - Terns	
Hydroprogne caspia	Caspian tern
Sturnidae - Starlings	
Sturnus vulgaris	European starling
Thraupidae – Tanager family	
Piranga ludoviciana	western tanager
Timaliidae - Old World babblers	
Chamaea fasciata	wrentit

Appendix D (cont'd)

Trochilidae -Hummingbirds	
Archilochus alexandri	black-chinned hummingbird
Calypte anna	Anna's hummingbird
Selasphorus rufus	rufous hummingbird
Selasphorus sasin	Allen's hummingbird
Troglodytidae - Wrens	
**Cistothorus palustris clarkae*	Clark's marsh wren
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	house wren
Turdidae - Thrushes	
Catharus ustulatus	Swainson's thrush
**Sialia mexicana*	western bluebird
Turdus migratorius	American robin
Tyrannidae – Flycatchers and Kingbirds	
Contopus sordidulus	western wood peewee
Empidonax difficilis	Pacific slope flycatcher
**Empidonax traillii*	willow flycatcher
Myiarchus cinerascens	ash-throated flycatcher
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus vociferans	Cassin's kingbird
Vireonidae – Vireos	
**Vireo bellii pusillus*	least Bell's vireo (observed off site)
Vireo gilvus	warbling vireo
Vireo huttoni	Hutton's vireo
Mammals	
Leporidae – Rabbits and Hares	
Sylvilagus audubonii	desert cottontail
Procyonidae – Raccoons and Relatives	
Procyon lotor	raccoon

*Sensitive species

APPENDIX E

EXPLANATION OF LISTING/SENSITIVITY CODES FOR PLANT AND ANIMAL SPECIES

Appendix E
EXPLANATION OF LISTING/SENSITIVITY CODES
FOR PLANT AND ANIMAL SPECIES

U.S. Fish and Wildlife Service (USFWS)

FE Federally Listed Endangered
FT Federally Listed Threatened
BCC Bird of Conservation Concern—Represents USFWS' highest conservation priorities and draw attention to species in need of conservation action.

California Department of Fish and Wildlife (CDFW)

SE State Listed Endangered
ST State Listed Threatened
SCE State Candidate for Listing as Endangered
SSC State Species of Special Concern—Declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.
WL Watch List—Birds that are/were: a) not on the current list of species of special concern but were on previous lists and have not been State listed under the California Endangered Species Act; b) previously State or federally listed and now are on neither list; or c) on the list of "Fully Protected" species.
FULLY PROTECTED refers to all vertebrate and invertebrate taxa of concern to the California Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.

City of San Diego

MSCP Covered Species Covered Species are those species included in the Incidental Take Authorization issued to the City by the USFWS and CDFW as part of the City's MSCP Subarea Plan.

MSCP Narrow Endemic Species A species that is confined to a specific geographic region, soil type, and/or habitat. Narrow Endemic species are a subset of Covered Species.

Appendix E (cont.)
EXPLANATION OF LISTING OR STATUS CODES
FOR PLANT AND ANIMAL SPECIES

California Native Plant Society (CNPS)

California Rare Plant Rank

1A = Presumed extirpated in California and either rare or extinct elsewhere.
1B = Rare, threatened, or endangered in California and elsewhere.

2A= Presumed extirpated in California but more common elsewhere.
2B= Rare, threatened, or endangered in California but more common elsewhere.
3 = More information is needed.
4 = A watch list for species of limited distribution.

Threat Rank

.1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately endangered in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20 percent of occurrences threatened/ low degree and immediacy of threat or no current threats known)

APPENDIX F

SENSTIVIE PLANT AND ANIMAL SPECIES DOCUMENTED OR WITH POTENTIAL TO OCCUR

APPENDIX F SENSITIVE PLANT AND ANIMAL SPECIES DOCUMENTED OR WITH POTENTIAL TO OCCUR				
PLANTS				
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
San Diego sagewort (*Artemisia palmeri*)	CNPS Rank Plant Rank 4.2	A perennial, deciduous shrub that occurs in sandy, mesic chaparral, coastal scrub, riparian forest, riparian scrub, and riparian woodland at elevations from 49 to 3,000 feet amsl in San Diego County.	February or May to September	Low. No historical records exist within one mile of the site, although there is potentially suitable habitat present. This perennial species was not observed during the biological reconnaissance survey or jurisdictional delineation.
Orcutt's brodiaea (*Brodiaea orcuttii*)	CNPS Rank Plant Rank 1B.1 MSCP Covered	A perennial, bulbiferous herb that occurs in vernal pools and ephemeral streams and seeps, usually associated with clay soils in Riverside and San Bernardino counties south to Baja California, Mexico at elevations from 330 to 5.740 amsl.	May to July	Not expected. No records exist within one mile of the site; no clay soils are present; and elevation may be too low.
Wart-stemmed ceanothus (*Ceanothus verrucosus*)	CNPS Rank Plant Rank 1B.1 MSCP Covered	An evergreen shrub that occurs in chaparral in San Diego and Riverside counties at elevations from sea level to 1,245 feet amsl.	January to April	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Palmer's goldenbush (*Ericameria palmeri* var. *palmeri*)	CNPS Rank Plant Rank 1B.1 MSCP Covered	A perennial, evergreen shrub that occurs in mesic chaparral and coastal scrub at elevations from 100 to 1,970 feet amsl in San Diego County and Baja California, Mexico.	July or September to November	Not expected. No records exist within one mile of the site, and no potential habitat is present.

PLANTS (cont.)				
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
San Diego barrel cactus (*Ferocactus viridescens*)	CNPS Rare Plant Rank 2B.1 MSCP Covered	A perennial stem succulent that occurs in Diegan coastal sage scrub, often at the crest of slopes and growing among cobbles. Occasionally found on vernal pool periphery and mima mound topography. San Diego County and Baja California, Mexico at elevations from near sea level to 1,475 feet amsl.	May to June	Not expected. Although historical records from 2001 exist within one mile of the site, no potential habitat is present.
San Diego barrel cactus (*Ferocactus viridescens*)	CNPS Rare Plant Rank 2B.1 MSCP Covered	A perennial stem succulent that occurs in Diegan coastal sage scrub, often at the crest of slopes and growing among cobbles. Occasionally found on vernal pool periphery and mima mound topography. San Diego County and Baja California, Mexico at elevations from near sea level to 1,475 feet amsl.	May to June	Not expected. Although historical records from 2001 exist within one mile of the site, no potential habitat is present.
Palmer's grapplinghook (*Harpagonella palmeri*)	CNPS Rare Plant Rank 4.2	An annual herb that occurs in clay soils in annual grasslands and coastal sage scrub below approximately 3,300 feet amsl in Los Angeles, Orange, Riverside, and San Diego counties; Baja California and Sonora, Mexico; San Clemente Island; Arizona.	March to April	Not expected. Although historical records from 2001 exist within one mile of the site, no potential habitat or clay soils are present.
Beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*)	CNPS Rare Plant Rank 1B.1	A perennial herb found in coastal chaparral, coastal dunes, and coastal scrub at elevations from sea level to 4,000 feet amsl in San Diego County and Baja California, Mexico.	March to December	Not expected. Although historical records exist on site (date unknown), no potential habitat is present.

PLANTS (cont.)				
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Decumbent goldenbush (*Isocoma menziesii var. decumbens*)	CNPS Rare Plant Rank 1B.2	A perennial shrub found in chaparral and sandy, often disturbed, coastal scrub at elevations from 30 to 440 feet amsl in Los Angeles, Orange, San Diego, and Ventura counties, including San Clemente and Santa Catalina islands, as well as Baja California, Mexico.	April to November	Not expected. Although historical records exist within one mile of the site, they area from 1926, and no potential habitat is present.
San Diego marsh-elder (*Iva hayesiana*)	CNPS Rare Plant Rank 2B.2	A perennial herb found in marshes, swamps, and playas at elevations from 30 to 1,640 feet amsl in San Diego County and Baja California, Mexico.	April to October	Low. No historical records exist within one mile of the site, although there is potentially suitable habitat present. This perennial species was not observed during the biological reconnaissance survey or jurisdictional delineation.
Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)	CNPS Rare Plant Rank 4.2	A perennial, rhizomatous herb that occurs in coastal dunes, meadows, alkaline seeps, and coastal salt marshes and swamps at elevations from near sea level to 2,950 feet amsl in southern California as well as other states and Baja California, Mexico.	March or May to June	Low. Observed downstream and off site to the west along the San Diego River in 2015. A perennial species that would have been observed on site if it was present.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	CNPS Rare Plant Rank 1B.1	An annual herb that occurs in coastal salt marshes and swamps, playas, and vernal pools at elevations from sea level to 4,000 feet amsl in central and southern California and Baja California, Mexico.	February to June	Not expected. Although historical records exist within one mile of the site, they area from 1939, and no potential habitat is present.

PLANTS (cont.)				
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Willowy monardella (*Monardella viminia*)	FE SE CNPS Rare Plant Rank 1B.1 MSCP Covered	A perennial herb found in alluvial, ephemeral washes in chaparral; coastal scrub; and riparian forest, scrub, and woodland at elevations from 160 to 74 feet amsl in San Diego County.	June to August	Low. No historical records exist within one mile of the site, although there is potentially suitable habitat. This perennial species was not observed during the biological reconnaissance survey or jurisdictional delineation.
Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)	CNPS Rare Plant Rank 1B.2	An annual herb found in coastal dunes from sea level to 330 feet amsl in Los Angeles, Orange, San Diego, and San Obispo counties.	April to Septembe	Not expected. Although historical reco exist within one mile of the site, they a from 1939, and no potential habitat is present.
Brand's star phacelia (*Phacelia stellaris*)	CNPS Rare Plant Rank 1B.1	An annual herb found in coastal dunes and coastal scrub at elevations from sea level to 1,315 feet amsl in Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties.	March to June	Not expected. Although historical records exist within one mile of the site (date unknown), no suitable habitat is present.
Nuttall's scrub oak (*Quercus dumosa*)	CNPS Rare Plant Rank 1B.1	A perennial, evergreen shrub found at elevations from 50 to 1,315 feet amsl in coastal areas with sandy soil or on sandstone substrate, in scrub oak chaparral, southern maritime chaparral, southern mixed chaparral or coastal sage scrub vegetation. Occurs in coastal southern California from near Point Conception in Santa Barbara County south into northern Baja California, Mexico.	February to April	Not expected. Although historical records from 2000 exist within one mile of the site, these records are from 1929, and no suitable habitat is present on site.

PLANTS (cont.)				
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Estuary seablite (*Suaeda esteroa*)	CNPS Rare Plant Rank 1B.2	A perennial herb found in coastal salt marshes and swamps near sea level in southern California and Baja California, Mexico	May to October	Low. There are historical records within one mile of the site from 1904, but only marginally suitable habitat is present. This perennial species was not observed during the biological reconnaissance survey or jurisdictional delineation.
NARROW ENDEMICS				
San Diego thornmint (*Acanthomintha ilicifolia*)	FT SE CNPS 1B.1 MSCP Covered/NE	An annual herb that occurs on clay lenses in grassy openings in chaparral or sage scrub at elevations from 30 to 3,150 feet amsl. Prefers friable or broken, clay soils. Range limited to coastal areas of San Diego County and Baja California, Mexico.	April to June	Not expected. Records within one mile of the site are from 1882, and no clay soils are present.
Shaw's agave (*Agave shawii*)	CNPS 2B.1 MSCP Covered/NE	A perennial leaf succulent that occurs in coastal sage scrub and coastal bluff scrub at elevations from near sea level to 400 feet amsl. Range limited to coastal areas of San Diego County and Baja California, Mexico.	September to May	Not expected. No records exist within one mile of the site, and no potential habitat is present.
San Diego ambrosia (*Ambrosia pumila*)	FE CNPS 1B.1 MSCP Covered/NE	A perennial, rhizomatous herb found in disturbed areas within chaparral, coastal sage scrub and grasslands at elevations from 65 to 1,360 amsl. Range includes San Diego and Riverside counties south to Baja California, Mexico.	June to September	Not expected. No records exist within one mile of the site, and no potential habitat is present.

PLANTS (cont.)				
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Aphanisma (*Aphanisma blitoides*)	CNPS 1B.2 MSCP Covered/NE	An annual herb that occurs in sandy areas along the coast from sea level to 1,000 feet amsl. Range includes islands off the southern California coast from San Onofre to Imperial Beach in San Diego County.	April to May	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Coastal dunes milk vetch (*Astragalus tener* var. *titi*)	FE SE CNPS 1B.1 MSCP Covered/NE	An annual herb that occurs in sandy places along the coast, including coastal dunes from sea level to 165 feet amsl. Range includes coastal areas of Monterey, Los Angeles, and San Diego counties.	March to May	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Encinitas baccharis (*Baccharis vanessae*)	FT SE CNPS 1B.1 MSCP Covered/NE	A perennial, deciduous shrub that occurs on sandstone soils in chaparral at elevations from 195 to 2,360 feet amsl. Known mainly from the Encinitas area from which it has been nearly extirpated.	August to November	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Snake cholla (*Cylindropuntia californica* var. *californica*)	CNPS 1B.1 MSCP Covered/NE	A perennial stem succulent that occurs in chaparral and coastal scrub at elevations from 95 to 495 feet amsl in San Diego County and Baja California, Mexico.	April to May	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Otay tarplant (*Deinandra conjugens*)	FT SE CNPS 1B.1 MSCP Covered/NE	An annual herb that occurs on clay soils in coastal scrub and valley and foothill grasslands at elevations from 80 to 985 feet amsl in San Diego County and Baja California, Mexico.	April or May to June	Not expected. No records exist within one mile of the site, and no potential habitat is present.

PLANTS (cont.)				
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Short-leaved dudleya (*Dudleya blochmaniae* ssp. *brevifolia*)	SE CNPS 1B.1 MSCP Covered/NE	A perennial herb that occurs on Torrey sandstone soils in openings in maritime chaparral and coastal scrub at elevations from 95 to 820 feet amsl in San Diego County.	April to May	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Variegated dudleya (*Dudleya variegata*)	CNPS 1B.2 MSCP Covered/NE	A perennial herb that occurs on dry hillside and mesas with clay soils in chaparral, coastal sage scrub, grasslands and near vernal pools at elevations from near sea level to 1,900 feet amsl. Ranges from San Diego County south to Baja California, Mexico.	April to June	Not expected. Although historical records exist within one mile of the BSA, these records are from 1914, and no potential habitat is present.
San Diego button-celery (*Eryngium aristulatum* var. *parishii*)[1]	FE SE CNPS 1B.1 MSCP Covered/NE	An annual/perennial herb that occurs in coastal scrub, valley and foothill grasslands, and vernal pools at elevations from 65 to 2,035 feet amsl in Los Angeles, Orange, Riverside, and San Diego counties, as well as Baja California, Mexico.	April to June	Not expected. Although historical records exist within one mile of the BSA, these records are from 1914, and no potential habitat is present.
Spreading navarretia (*Navarretia fossalis*)	FT CNPS 1B.1 MSCP Covered/NE	An annual herb that occurs in chenopod scrub, marshes and swamps (assorted freshwater habitats), playas, and vernal pools at elevations from 95 to 2,150 feet amsl in Los Angeles, Riverside, San Luis Obispo, and San Diego counties, as well as Baja California, Mexico.	April to June	Low. No records exist within one mile of the site, and potential freshwater marsh habitat is limited.

PLANTS (cont.)				
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
California Orcutt grass (*Orcuttia californica*)	FE SE CNPS 1B.1 MSCP Covered/NE	An annual herb that occurs in vernal pools at elevations from 50 to 2,165 feet amsl in Los Angeles, Orange, Riverside, Ventura, and San Diego counties, as well as Baja California, Mexico.	April to August	Not expected. No records exist within one mile of the site, and no potential habitat is present.
San Diego mesa mint (*Pogogyne abramsii*)	FE SE CNPS 1B.1 MSCP Covered/NE	An annual herb that occurs in vernal pools at elevations from 295 to 660 feet amsl in San Diego County.	March to July	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Otay Mesa mint (*Pogogyne nudiuscula*)	FE SE CNPS 1B.1 MSCP Covered/NE	An annual herb that occurs in vernal pools at elevations from 295 to 820 feet amsl in San Diego County.	May to July	Not expected. No records exist within one mile of the site, and no potential habitat is present.

ANIMALS			
INVERTEBRATES			
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
San Diego fairy shrimp (*Branchinecta sandiegonensis*)	FE	Vernal pools, swales, ditches, road ruts in San Diego County and extreme northern Baja California, Mexico.	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE	Primary larval host plants in San Diego are dwarf plantain (*Plantago erecta*) at lower elevations. Owl's clover (*Castilleja exserta*) may serve as host plant if primary host plants have senesced. Potential habitat includes areas of low-growing and sparse vegetation. Exists only as several, probably isolated, colonies in southwestern Riverside County, southern San Diego County, and northern Baja California, Mexico.	Not expected. Was not observed during focused surveys. The Project site is no longer within the recommended survey area for the species (USFWS 2014).
Wandering skipper (*Panoquina errans*)	MSCP Covered	Coastal saltmarshes along river mouths and other brackish waters where larval host plant, saltgrass (*Distichlis spicata*), is present.	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Riverside fairy shrimp (*Streptocephalus woottoni*)	FE	Found in moderate to deep (generally ranging from 10 inches to 5-10 feet in depth), longer-lived vernal pools and ephemeral wetlands in southern coastal California and northern Baja California, Mexico. Currently presumed to occupy 60 or fewer pool complexes throughout southern California (USFWS 2011).	Not expected. No records exist within one mile of the site, and no potential habitat is present.
VERTEBRATES			
Fishes			
Tidewater goby (*Eucyclogobius newberryi*)	FE SSC	Restricted to slow-moving, coastal brackish waters, such as lagoons and upper reaches of bays at mouth of freshwater streams. In San Diego, known only from Agua Hedionda Lagoon.	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Southern steelhead (*Oncorhynchus mykiss irideus*; southern California Distinct Population Segment)	FE	Marine waters; seasonally accessible rivers and streams with sufficient flows for spawning.	Not expected. No records exist within one mile of the site, and no potential spawning habitat is present.

VERTEBRATES (cont.)			
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
Amphibians			
Arroyo toad (*Anaxyrus californicus*)	FE SSC MSCP Covered	Breeds in shallow pools along stream edges with sand/gravel flats. Adults use sage scrub, mixed chaparral, oak woodland habitats up to one mile from breeding sites.	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Western spadefoot (*Spea hammondii*)	SSC	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; requires temporary pools for breeding and friable soils for burrowing. Generally excluded from areas with bullfrogs (*Rana catesbiana*; observed on site) or crayfish (*Procambarus* sp).	Low potential to occur. Potential habitat is present on site, but the bullfrog is also present.
Reptiles			
Western pond turtle (*Emys marmorata*)	SSC MSCP Covered	Ponds; small lakes; marshes; and slow-moving, sometimes brackish water with abundant vegetation, rocky or muddy bottoms, and basking areas in woodland, forest, and grassland habitats.	Low potential to occur. No records exist within one mile of the site and invasive turtles (red-eared sliders; *Trachemys scripta elegans*) that compete with the species were observed.
Southern California (=silvery) legless lizard (*Anniella* [*pulchra*] *stebbinsi* [*pulchra*])	SSC	Areas with loose, sandy soil. Generally found in leaf litter, under rocks, logs, or driftwood in oak woodland, chaparral, and desert scrub.	Low potential to occur. No records exist within one mile of the site. Most sandy areas of the site are part of the landscaped golf course.
California glossy snake (*Arizona elegans occidentalis*)	SSC	Arid scrub, rocky washes, grasslands, and chaparral.	Not expected. Although a record exists within one mile of the site, it is from 1893, and potential habitat is not present.
Orange-throated whiptail (*Aspidoscelis hyperythra*)	WL MSCP Covered	Coastal sage scrub, chaparral, and streamside growth with loose, sandy soils.	Low potential to occur. No records exist within one mile of the site. Most sandy areas of the site are part of the landscaped golf course.

VERTEBRATES (cont.)			
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
Red-diamond rattlesnake (*Crotalus ruber*)	SSC	Found in chaparral, coastal sage scrub, and along creek banks, particularly among rock outcrops or piles of debris supporting rodents.	Low. Prefers rocky outcroppings within coastal sage scrub or chaparral habitats. Potential habitat is not present on site.
Coast horned lizard (*Phrynosoma blainvillii*)	SSC MSCP Covered	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil. Require native ants, especially harvester ants (*Pogonomyrmex* sp.), and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Coronado skink (*Plestiodon skiltonianus interparietalis*)	WL	Grasslands, coastal sage scrub, open chaparral, pine oak woodland and coniferous forests. Prefers areas where there is abundant leaf litter or low, herbaceous growth.	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	SSC	Primarily found in chaparral but also inhabits coastal sage scrub and areas of grassland mixed with scrub.	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Two-striped garter snake (*Thamnophis hammondii*)	SSC	Generally found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland, and coniferous forest.	Moderate potential to occur. Although no historical records exist within one mile of the site, potential habitat is present.
Birds			
Cooper's hawk (*Accipiter cooperii*)	WL MSCP Covered	In San Diego County, tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas such as scrubland or fields.	Present. Observed on site in 2018.

VERTEBRATES (cont.)			
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
Birds			
Tricolored blackbird (*Agelaius tricolor*)	BCC SCE, SSC MSCP Covered	Marsh habitat near grasslands, pastures, and agricultural fields.	Not expected. No historical records exist within one mile of the site. Very limited and marginal potential nesting habitat present within freshwater marsh along the San Diego River, but the site is outside the known breeding range of species.
Burrowing owl (*Athene cunicularia*)	BCC SSC MSCP Covered	Utilize open areas such as grasslands, pastures, coastal dunes, desert scrub, and edges of agriculture fields, with underground burrows often excavated by California ground squirrels (*Otospermophilus beecheyi*), for breeding and foraging. In 2003, there were an estimated 25 to 30 resident pairs of in San Diego County located primarily in the southern quarter of the county and on North Island (Lincer and Bloom 2007).	Not expected. No historical records exist within one mile of the site. While burrowing owls have been reported to utilize golf courses, they utilize open areas of short grasses (not golf course turf) with existing burrows. These features are not present on site, and the California ground squirrel was not observed.
Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*)	BCC SSC MSCP Covered	Maritime succulent scrub, coastal scrub with *Opuntia* spp. thickets.	Not expected. Although one record exists within one mile of the site, no potential habitat is present.
Vaux's swift (*Chaetura vauxi*)	SSC	Nests in coniferous or mixed forest. Forages in forest openings, especially above streams.	Moderate. Observed off site to the west during 2018 least Bell's vireo and southwestern willow flycatcher survey.
Northern harrier (*Circus cyaneus*)	SSC MSCP Covered	Breeds and forages in a variety of treeless habitats that provide adequate vegetative cover; an abundance of prey; and scattered hunting, plucking, and lookout perches. Such habitats include marshes; wet meadows; weedy borders of lakes, rivers and streams; grasslands; weed fields; pastures; and some croplands.	Not expected. No records exist within one mile of the site, and potential habitat is not present. The site is too manicured and surrounded by urban development.

VERTEBRATES (cont.)			
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
Clark's marsh wren (*Cistothorus palustris clarkae*)	SSC	Freshwater and brackish marshes.	Present. Detected in three locations in coastal and valley freshwater marsh along the San Diego River in the central portion of the site in 2018.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT, BCC SE	Extensive stands of mature riparian woodland. A rare, sporadic summer visitor to San Diego County not known to have nested there for decades (Unitt 2004).	Not expected due to rarity and possible lack of extensive habitat. No records exist within one mile of the site.
White-tailed kite (*Elanus leucurus*)	State Fully Protected	Riparian woodlands and oak or sycamore groves adjacent to grassland on coastal slopes in San Diego County. Nests in the crowns of trees, especially coast live oak (*Quercus agrifolia*).	Low potential to nest along the San Diego River and forage on site since potential foraging habitat on site and in vicinity is of marginal quality.
Willow flycatcher (*Empidonax traillii*)	BCC SE	Willow flycatcher breeding habitat in California is typically moist meadows with perennial streams; lowland riparian woodlands dominated by willows, primarily in tree form; and cottonwoods; or smaller spring-fed or boggy areas with willow or alders (*Alnus* spp.; Craig and Williams 1998).	Present. Two willow flycatchers were detected during the first (of five) site visits along the San Diego River on site in 2015. These birds were not relocated during the second site visit. One willow flycatcher was detected during the third site visit. It was determined that all of these individuals were migrants. In 2018, one willow flycatcher was detected by its call along the San Diego River in the central portion of the site on May 17. Due to the sound of its call (that of a northwestern willow flycatcher subspecies) and the fact that it was only detected once, it was determined to be a migrant willow flycatcher.

VERTEBRATES (cont.)			
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE SE MSCP Covered	The southwestern subspecies of willow flycatcher is a riparian obligate species restricted to dense stream-side vegetation composed of dense mixtures of native broadleaf trees and shrubs often interspersed with small openings, open water, or shorter vegetation, creating a mosaic that is not uniformly dense (Craig and Williams 1998).	Moderate potential to occur. No historical occurrence records exist for the subspecies within one mile of the site; however, potentially suitable nesting habitat is present.
American peregrine falcon (*Falco peregrinus anatum*)	BCC State Fully Protected MSCP Covered	Nests on cliff ledges, old raptor or raven nests, and man-made structures. Forages in open coastal areas and mud flats. Nests close to the coast but can winter inland, particularly around lakes.	Not expected to nest. Low potential to forage on site in winter. No records exist within one mile of the site.
Yellow-breasted chat (*Icteria virens*)	SSC	Dense riparian habitats.	Present. Observed on site in 2015 and again detected in southern cottonwood-willow riparian forest on site in 2018.
Least bittern (*Ixobrychus exilis*)	BCC SSC	Brackish and freshwater marshes in the coastal lowland.	Moderate potential to occur. No records exist within one mile of the site; however, least bittern was observed breeding along the San Diego River in Mission Valley in 1997 (Unitt 2004).
Osprey (*Pandion haliaetus*)	WL	Rivers, bays, lakes, or seacoasts.	Moderate. Observed over open water in the San Diego River off site to the west in 2018.
Double-crested cormorant (*Phalacrocorax auritus*)	WL	Fresh and salt water habitats.	Present. Observed on site in 2015 and again in coastal and valley freshwater marsh along the San Diego River on site during in 2018.

VERTEBRATES (cont.)			
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
Light-footed Ridgway's rail (*Rallus obsoletus levipes*)	FE SE, FP MSCP Covered	Coastal salt marshes, especially those dominated by cordgrass (*Spartina* sp.), but has been known to use brackish and freshwater sites.	Present. Observed in four locations along the San Diego River on site in coastal and Valley freshwater marsh/open water in 2018.
Yellow warbler (*Setophaga petechia*)	BCC SSC	Riparian woodland, Mojave riparian forest, mule fat scrub, and southern willow scrub.	Present along the San Diego River on site.
Western bluebird (*Sialia mexicana*)	MSCP Covered	Open woodlands, parks, farm lands, orchards.	Present.
Least Bell's vireo (*Vireo bellii pusillus*)	FE SE MSCP Covered	Mature riparian woodland, Mojave riparian forest, mule fat scrub, and southern willow scrub.	Moderate. In 2015, detected west of the site along the San Diego River during the first five (of eight) site visits. The individual was not detected during the last three site visits. In 2018, a solitary least Bell's vireo was detected in the same area off site on July 9. Since it was only detected on that date and was tracked moving upstream, it was determined to be a transient male.
Mammals			
Pallid bat (*Antrozous pallidus*)	SSC	Habitats include grasslands, shrublands, woodlands, and forests. Roosts in rock crevices, caves, mine shafts, under bridges, in buildings and tree hollows. Feeds primarily on the ground. Most common in open, dry habitats with rocky areas for roosting (Zeiner, et al. 1990).	Low potential to occur. No records exist within one mile of the site, and potential habitat is limited.

VERTEBRATES (cont.)			
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
Mexican long-tongued bat (*Choeronycteris mexicana*)	SSC	Occupies desert and montane riparian, desert succulent scrub, and pinyon-juniper habitats. Primarily a nectar feeder. Roosts in caves, mines, and buildings. Very sensitive to disturbance of roost sites. Records in San Diego have largely been in urban habitat (Olson 1947 *in* Zeiner et al. 1990).	Low potential to occur. Although records exist within one mile of the site, they are from 1981, and potential habitat is limited.
Western mastiff bat (*Eumops perotis californicus*)	SSC	Suitable habitat consists of extensive arid to semi-arid habitats with abundant roost locations provided by crevices in rock outcrops and buildings (Zeiner et al. 1990).	Low potential to occur. No records exist within one mile of the site, and potential habitat is limited.
San Diego black-tailed jackrabbit (*Lepus californicus bennetii*)	SSC	Occurs primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.	Not expected. No records exist within one mile of the site, and no potential habitat is present.
San Diego desert woodrat (*Neotoma lepida intermedia*)	SSC	Open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.	Not expected. No records exist within one mile of the site, and no potential habitat is present.
Pacific pocket mouse (*Perognathus longimembris pacificus*)	FE SSC	Open coastal sage scrub with fine, alluvial sands within approximately 2.4 miles inland of the Pacific Ocean (Erickson 1993).	Not expected. Presently known only from Dana Point Headlands in Orange County, California and three locations on Marine Corps Base Camp Pendleton in San Diego County (Spencer 2005). No potential habitat is present on site, and it is approximately 1.3 miles east of Mission Bay and 3.7 miles from the Pacific Ocean—likely too far inland for the species.
Southern mule deer (*Odocoileus hemionus*)	MSCP Covered	Requires relatively large, undisturbed tracts of chaparral, coastal sage scrub, and mixed grassland/shrub habitats.	Not expected. No records exist within one mile of the site, and large, undisturbed tracts of habitat are not present.

VERTEBRATES (cont.)			
SPECIES	**LISTING/ SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
Mountain lion (*Puma concolor*)	MSCP Covered	Mountain lions typically inhabit remote hilly or mountainous areas in forest and shrub habitats. Avoid human-dominated habitats; grasslands are the most avoided natural vegetation type (Dickson and Beier 2005). Most abundant in areas that support a large population of deer. Prefer areas that provide cover, for example rocky cliffs (Dixon 1982). Require open water for drinking; large foraging areas; and areas within which to den like rocky shelters or caves.	Not expected. No records exist within one mile of the site, and no potential habitat is present.
American badger (*Taxidea taxus*)	SSC MSCP Covered	Grasslands, savannas, meadows, sparse scrublands.	Not expected. No records exist within one mile of the site, and no potential habitat is present.

[1]See Appendix C for an explanation of listing/sensitivity.

APPENDIX G

HISTORIC AERIALS

Note: Current site topography.

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ALDEN ENVIRONMENTAL, INC

1953 Aerial Photograph - Tributary 1

RIVERWALK

Note: Current site topography.

ALDEN ENVIRONMENTAL, INC

1964 Aerial Photograph - Tributary 1

RIVERWALK

Note: Current site topography.

ALDEN ENVIRONMENTAL, INC

1980 Aerial Photograph - Tributary 1

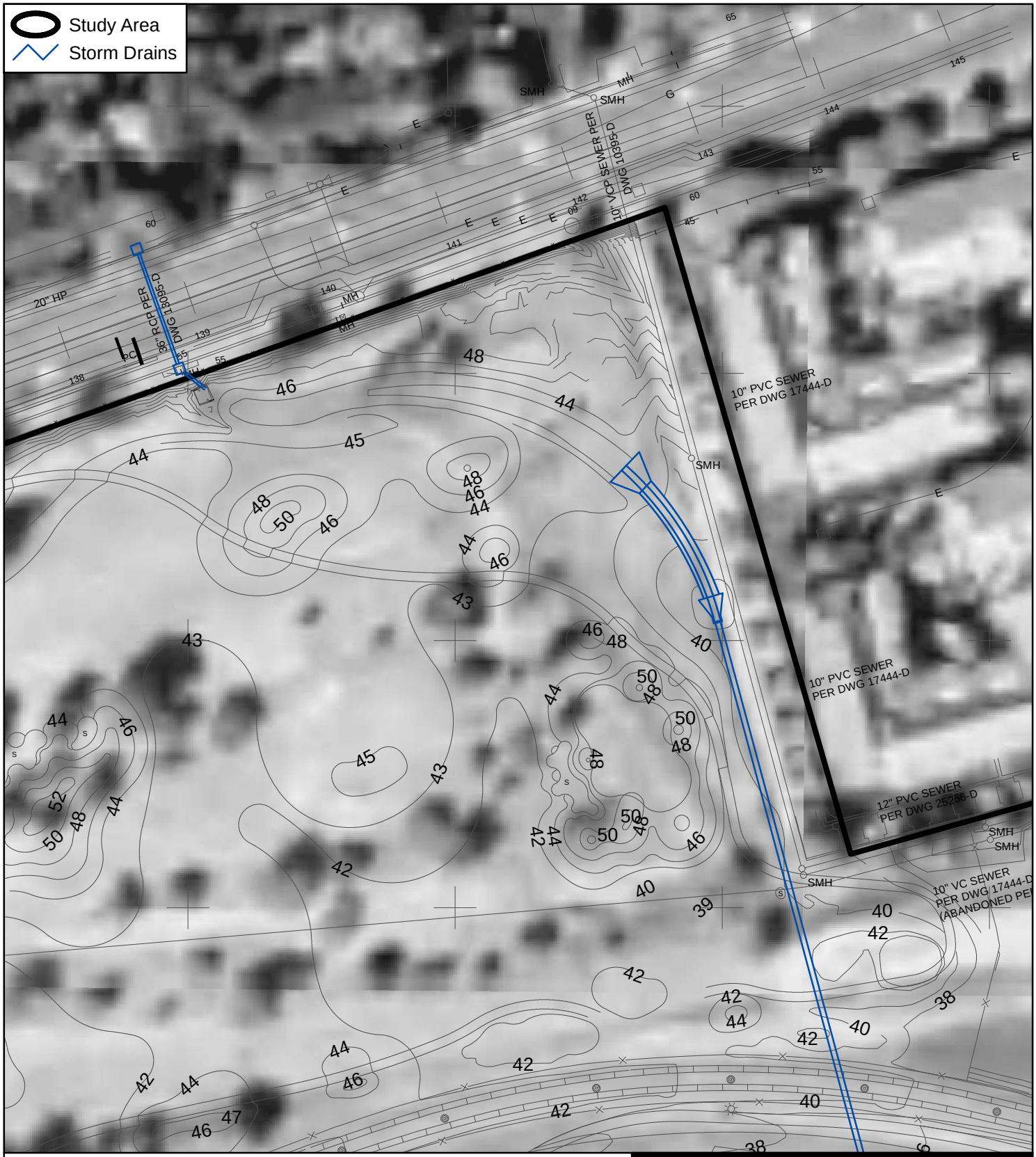
RIVERWALK

Note: Current site topography.

ALDEN ENVIRONMENTAL, INC

1994 Aerial Photograph - Tributary 1

RIVERWALK



Note: Current site topography.

ALDEN ENVIRONMENTAL, INC

1996 Aerial Photograph - Tributary 1

RIVERWALK

APPENDIX H

WETLAND MITIGATION HABITAT MANAGEMENT PLAN

Riverwalk Project
Wetland Mitigation
Habitat Management Plan

December 11, 2019

Prepared for:

SD Riverwalk, LLC
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Prepared by:

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ALDEN
ENVIRONMENTAL, INC

Riverwalk Project
Wetland Mitigation
Habitat Management Plan

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1.0 INTRODUCTION

This Habitat Management Plan (HMP) has been prepared for the on-site wetland mitigation area for the Riverwalk Project (project), in accordance with requirements identified in the Project's Biological Technical Report and Wetland Mitigation Plan (Alden Environmental, Inc. 2019a, 2019b). This HMP directs long-term management for the wetland habitat mitigation area and addresses applicable management guidelines for the City of San Diego's (City) Multi-Habitat Planning Area (MHPA).

1.1 PURPOSE OF THE HABITAT MANAGEMENT PLAN

The main purpose of this HMP is to identify methods and means necessary to maintain and enhance habitat (and related wildlife) values of the project's wetland mitigation area in perpetuity. The HMP provides framework for long-term management, following successful implementation of the mitigation effort. It defines methods and schedules to sustain habitat function and value following restoration, determines the parties responsible for management, and identifies associated costs and source of funding. The ultimate goal of this HMP is to preserve long-term viability and function and value of native habitats on site along with the listed and sensitive species they support. Achieving this goal also would benefit and improve the quality of life for local residents through preservation and enhancement of a more diverse and balanced environment.

For information on biological conditions existing prior to development, please refer to the Biological Technical Report for the Riverwalk Project (Alden 2019a).

2.0 PRESERVE AREA DESCRIPTION

The Riverwalk project wetland habitat mitigation area includes approximately 2.45 acres and is located along the existing San Diego River channel, which traverses the site in an east-west direction (Figures 1 and 2). The site itself is located just west of the river crossing at Fashion Valley Road. At the time of implementation, the mitigation site will have been graded and restored to native wetland habitats, as described in the Wetland Mitigation Plan for the Project (Alden 2019b). As planned, the HMP area will support freshwater marsh and southern cottonwood-willow riparian forest (SCWRF) habitats. Actual habitat types and acreages to be managed will be determined after successful completion of the 5-year wetland habitat maintenance and monitoring period called for in the Wetland Mitigation Plan. All management activities would occur within/adjacent to this channel and within the MHPA. Other habitat preserve areas (e.g. future mitigation bank) on the Riverwalk site, outside of the project specific wetland mitigation area, are not included in this HMP.

2.1 SENSITIVE RESOURCES WITHIN THE PRESERVE AREA

Upon successful completion of the wetland habitat mitigation effort, the site will support a minimum of 1.16 acres of created wetland habitat and 1.29 acres of enhanced wetland habitat (Figure 3). These acreages include the required 1.92 acres of City wetland habitat mitigation requirement as well as an additional 0.53 acre anticipated to be required by the regulatory agencies. to meet the project's City mitigation requirements. This HMP will be implemented upon successful completion of the 5-year habitat restoration maintenance and monitoring period called for in the Wetland Mitigation Plan.

3.0 RESPONSIBLE PARTIES

3.1 PROJECT PROPONENT

SD Riverwalk, LLC (project proponent) is responsible for funding the implementation of this HMP, including management/maintenance of the preserve area in perpetuity via a one-time endowment. The endowment would be non-wasting (i.e., annual interest would be sufficient to cover yearly management needs) and would fund management activities in perpetuity. In addition, the proposed endowment amount would require approval by the City and/or entity accepting title/management responsibilities for the HMP site.

Long-term HMP tasks involve activities associated with the management and maintenance of the preserve area in perpetuity, including habitat monitoring/mapping, exotic species control, public awareness programs, and general monitoring and reporting. Additional descriptions of these long-term efforts are provided below.

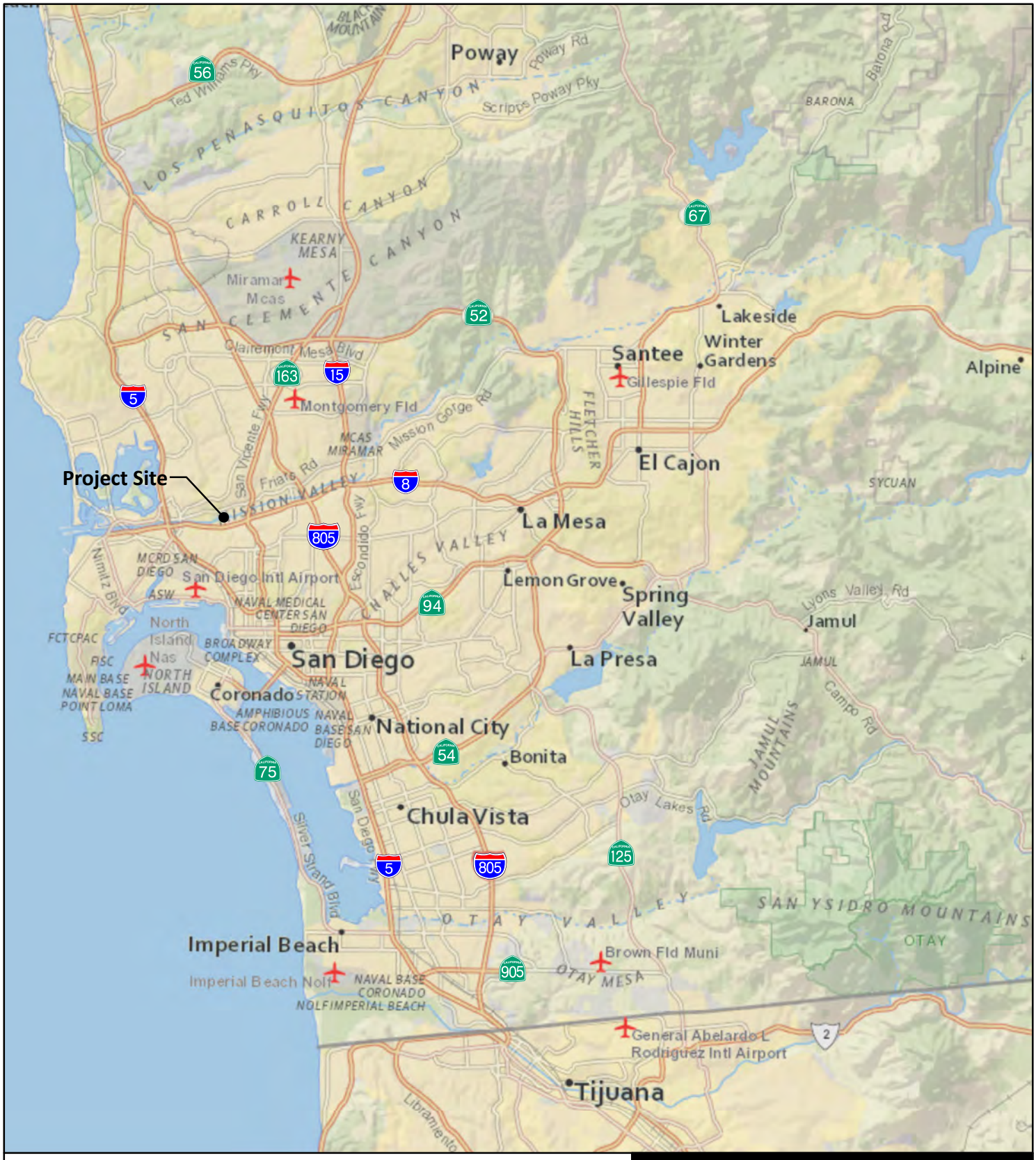
3.2 HABITAT MANAGER

An individual or organization acceptable to the project proponent and City shall be contracted to serve as Habitat Manager for the general management effort. If the entity hired is an organization, the person(s) actively managing the open space must satisfy criteria for a Habitat Manager (as described below), and a Project Manager must be designated. The Habitat Manager shall possess the following qualifications:

- A B.S. or B.A. degree in wildlife management, natural resources, ecology, zoology, botany, biology, or similar degree.
- A minimum of 2 years of experience in field biology in southern California (preferably San Diego County).
- Demonstrated experience in similar projects, or in projects requiring similar skills.
- Experience in working with community groups.

The Habitat Manager (1) will be responsible for the implementation of this HMP; and (2) will carry out the HMP's requirements and objectives. The Habitat Manager's primary responsibility will be to maintain the integrity of all preserved and restored habitats. In order to fulfill that responsibility, the Habitat Manager shall:

- Be an advocate of the preserved open space and its protection.
- Be familiar with this HMP and supporting documentation.
- Be responsible for all points noted in this HMP as being within his/her responsibility or judgment, as discussed in applicable sections of this document.
- Maintain all documents transferred by the project proponent (as previously noted), and be knowledgeable about the resources addressed in these reports.



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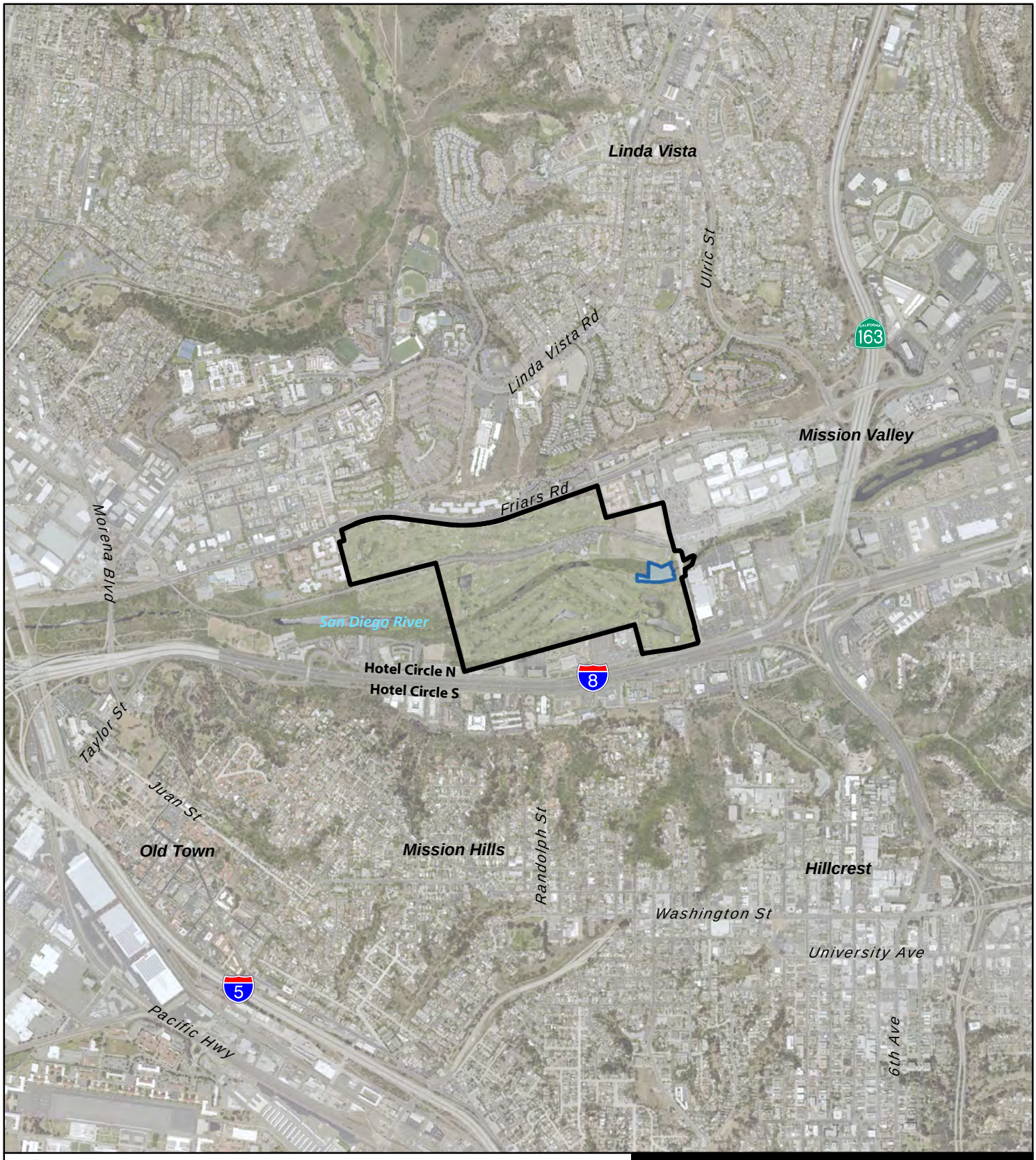
ALDEN ENVIRONMENTAL, INC

Figure 1

Regional Location

RIVERWALK PROJECT
WETLAND HABITAT MANAGEMENT PLAN



Project Site
Long-Term Management Area

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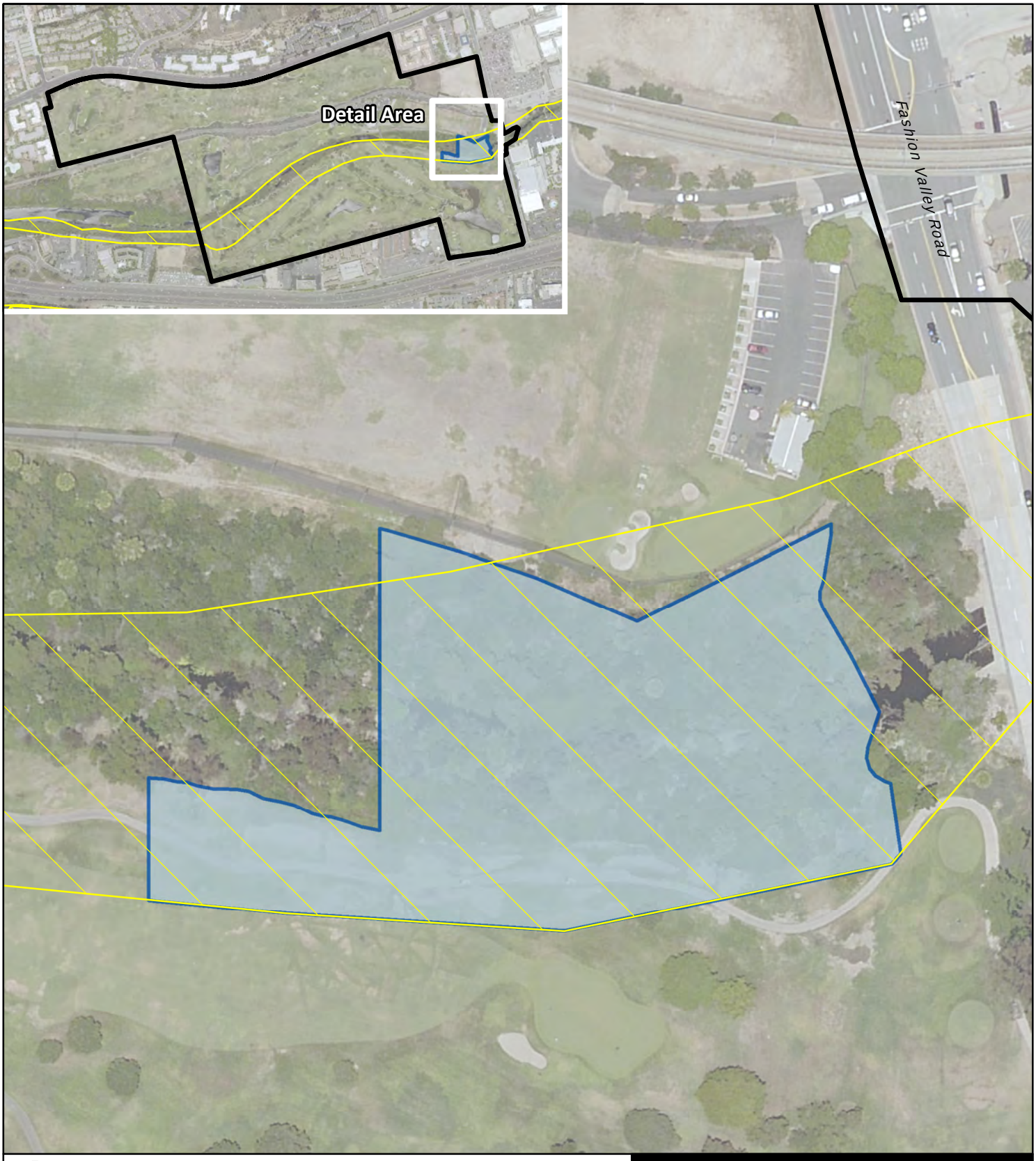
ALDEN
ENVIRONMENTAL, INC

Figure 2

Project Location

RIVERWALK PROJECT
WETLAND HABITAT MANAGEMENT PLAN



Project Site
MHPA
Management/Project Wetland Mitigation Area

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ALDEN ENVIRONMENTAL, INC

Figure 3

Preserve Area

RIVERWALK PROJECT
WETLAND HABITAT MANAGEMENT PLAN

- Educate the surrounding community about the presence and need for the open space and be responsive to any community concerns or problems regarding the open space.
- Provide direction to the community on the importance and maintenance of open space.
- Document all field visits, and notify the City in a timely manner of all concerns, problems, and suggested solutions. Forward all applicable monitoring and management data to the City for incorporation into the MSCP database.
- Coordinate with the manager(s) of adjacent preserves (i.e., MHPA) on management practices and tasks related to preservation and maintenance of the subregional open space system and apply pertinent adaptive management recommendations received from the regional monitoring source. Specifically, this will include activities such as the removal of exotic and pest species, and ensuring compatibility with the overall open space management plan proposed as part of the MSCP Subarea Plan.

4.0 FUNDING MECHANISM

General Funding

The project proponent will be responsible for all HMP funding requirements. Specifically, this would include a one-time endowment to fund long-term HMP implementation. The estimated cost for implementation of the HMP will be determined through the preparation of a Property Analysis Record (PAR) for the site. Long-term HMP tasks involve activities associated with the management and maintenance of the preserve in perpetuity, as funding permits, including habitat monitoring/mapping, exotic species control, public involvement programs, and general monitoring and reporting. The PAR will include funding necessary to ensure long term management in perpetuity, including contingency funds to address restoration efforts that may be required after a catastrophic event. The endowment amount would be required to meet the estimated costs identified in the PAR. In addition, the proposed endowment amount would require approval by the chosen Preserve Manager.

5.0 MANAGEMENT SPECIFICATIONS

General Management

The management area is intended to serve as a habitat preserve and is not compatible with many uses. Activities specifically prohibited include trails, camping, grazing, hunting, off-road vehicle use, dumping, construction activities and staging, vegetation clearing, and removal of natural resources. Exceptions to these prohibitions include selective hand-clearing of vegetation to the extent required by written order of the fire authorities for the express purpose of reducing an identified fire hazard or weed problem. A number of individual open space management tasks are described below and in Table 1, with these efforts to be conducted at appropriate time intervals, depending on their specific characteristics.

Table 1 LONG-TERM MANAGEMENT TASKS	
Task Description	**Approximate Implementation Date/Frequency**
Summer/fall habitat mapping	Map update every 5 years in summer/fall
General monitoring	Quarterly
Exotic plant control	Minimum twice a year beginning with the first year of active management
Exotic animal control	As needed
Fire response planning	As needed
Annual reports	Annually/January 15
Barrier and sign inspection/repair	In conjunction with regular monitoring visits
Educational brochure	Once – within 3 months of active management
Trash removal	In conjunction with regular monitoring visits

5.1 HABITAT MONITORING

Improving and maintaining the health and diversity of habitat contained within the preserve area are the basis for successful management. To assist the Habitat Manager in prioritizing management tasks and to provide information to the general public, City, and researchers regarding the overall state of the open space area, the Habitat Manager will monitor and document habitat types and conditions on a regular basis. These activities will include the ongoing surveys and tasks described below.

5.1.1 Baseline Biological Inventory

The quantity and quality of vegetation communities within the mitigation area will be documented during the first year of active management following successful completion of the habitat enhancement/restoration effort. This inventory will incorporate data from the biological technical report for the Riverwalk project (Alden 2019a), the final (Year 5) annual monitoring report for the mitigation effort, and the findings of an initial baseline inventory field survey. Vegetation mapping in the baseline survey will follow the latest City of San Diego standards. These data will allow the Habitat Manager to measure habitat changes caused by natural and human effects and to evaluate management efforts during subsequent years.

Upon implementation of this HMP, the Habitat Manager will be provided digital files containing the existing vegetation and sensitive resources data, which will be updated following the baseline inventory field survey during the start-up (first year) phase of the HMP. The intent of this update is to document current conditions on site (including graphic and tabular depictions of habitat acreages), document all species observed (either directly or indirectly by sign such as scat, tracks, etc.) within each identified habitat type, and document the locations of any sensitive plant and animal species.

The baseline inventory update will be conducted during the first year of active management under this HMP. To optimize the probability of detecting sensitive species reported or expected to occur, this survey should be conducted between March and May, when the majority of sensitive plant and animal species are most detectable.

5.1.2 Long-term Habitat Monitoring and Documentation

Vegetation communities and boundaries may change over time due to natural processes such as fire, flood, and succession. In addition, the preserve area could be susceptible to indirect impacts from adjacent development, particularly along the development/preserve margins. Any changes within the preserve area may affect the functions and values provided by the existing vegetation communities, with monitoring and documentation of such changes in both existing and restored habitats therefore important to successful long-term management. Specifically, information obtained from regularly monitoring and documenting changes in open space habitats will assist the Habitat Manager in determining and prioritizing future management tasks.

Methods

Habitat Mapping

The Habitat Manager will conduct summer/fall habitat mapping to note changes in the wetland vegetation communities. Updated vegetation maps will be prepared every 5 years and include any observed/detected sensitive species.

General Monitoring

The preserve area will be visually inspected for changes during quarterly maintenance and monitoring visits, and all observations will be documented. Substantial changes will be monitored more closely to determine the necessity of additional measures. Recommendations from such activities will be submitted to the City for review and information prior to implementation. Vegetation and sensitive species mapping should be conducted during regular site monitoring, and updated maps should be submitted to the City every 5 years.

In addition, the Habitat Manager will assess the condition of the preserve area visually and note any problems in need of attention. The preserve area barriers and signs will be inspected and any necessary repairs noted. All applicable monitoring data will be forwarded to the City for incorporation into the MSCP database.

If substantial changes are noted, the area in question will be monitored more closely to determine if additional measures are appropriate. Any recommendations resulting from such activities will be submitted to the City for review and approval prior to implementation.

Schedule

Habitat Mapping

The Habitat Manager will update habitat mapping every 5 years following completion of the Mitigation Plan using a current aerial photograph.

General Monitoring

The condition and extent of habitats within the preserve will be monitored and documented during regular site visits.

5.2 SENSITIVE SPECIES MONITORING

Preservation of animal populations within the preserve area is one step in achieving the overall long-term conservation of these species. Monitoring of sensitive species located within open space has 2 purposes: (1) to identify short-term threats to species persistence; and (2) to identify longer-term trends that may suggest that a population is in decline. Adaptive management measures may be required to intervene when either natural or man-made disturbances or effects appear to be adversely influencing a sensitive species.

5.2.1 Methods

It is the responsibility of the Habitat Manager to evaluate the status of the preserved species within preserve area and to institute protective measures if any individual species becomes threatened. Monitoring of sensitive species populations will vary based on the target species and be conducted in conjunction with regularly scheduled visits. Not all monitoring parameters can be identified within the context of this plan because some parameters will be dependent on a detailed assessment of field conditions. In each assessment, however, the Habitat Manager will observe and document sensitive species locations and conditions.

Riparian Bird Species

Generalized surveys for the least Bell's vireo, southwestern willow flycatcher, and the Ridgeway's rail will be conducted during regularly scheduled site visits. Any sensitive bird species observed incidentally during other surveys will be documented and reported in the annual report for the given year.

Monitoring for Other Sensitive Species

All sensitive species observed during site visits will be noted and recorded on updated maps.

5.2.2 Schedule

Riparian Bird Species

Focused surveys visits for these species will be conducted 2 out of every 5 years within appropriate habitat on site. Each survey will consist of 3 site visits, at least 2 weeks apart during the breeding season (March 1 to August 15). The Habitat Manager will decide in which years the surveys will be conducted.

Monitoring Sensitive Species

Monitoring for other sensitive plant and animal species populations will be conducted opportunistically during all site visits.

5.3 CONTROL OF EXOTIC SPECIES

Exotic plant and animal species introduced through urban edge effects could result in degradation of both native habitats and associated wildlife populations. The Habitat Manager will implement the following measures to control introduction of exotic plants and animals in the preserve area.

5.3.1 Exotic Plant Control

The Habitat Manager will coordinate with land developers and owners adjacent to the site to provide information regarding exotic plant species and to increase the efficiency of exotic plant control programs. To accommodate changing growth patterns, weeding will occur as needed at the discretion of the Habitat Manager. Weeding will occur by manual or mechanical means; no weed whips or chemical herbicides may be used unless specifically determined to be necessary by the Habitat Manager. The Habitat Manager is responsible for removal of species rated as High by the California Invasive Plant Council (Cal-IPC) within 2 weeks after discovery.

If the use of herbicide is deemed necessary, application should be minimal, and may only occur in compliance with all federal and state laws. Use of chemical herbicides should be determined in coordination with the County Department of Environmental Health. All herbicide use will be applied by backpack sprayers or stump painting directly on target weeds and will involve short duration, biodegradable chemicals.

Schedule

General weeding events will occur twice annually in January/February and April/May. The Habitat Manager may modify this schedule as necessary to accommodate annual fluctuations in weed growth.

5.3.2 Exotic Animal Control

Exotic animal species may be present now or in the future within and adjacent to the mitigation area. Escaped pets from neighboring residential areas also may pose a problem within the preserve. Some exotic animal species may prove to be detrimental to the preserved habitats and species within the mitigation area.

Methods/Schedule

Exotic animal species will be noted during all site visits. If a population of an exotic animal species poses a threat to the preserve area, a control/eradication program will be coordinated with the City, if appropriate. Control and eradication efforts will be implemented at the most appropriate time(s) of year and will reflect current field conditions and observations regarding the target species. No exotic animal species control is expected to be necessary and will be implemented only under extreme conditions.

5.4 FIRE MANAGEMENT

Fire is an important element in the ecology of southern California and presents a potential hazard to buildings located adjacent to open space area. Fuel management for the nearby development areas would occur entirely outside of the mitigation area. As such, no regular fuel modification is anticipated.

5.4.1 Fire Response Planning

Access would be provided in the event of fire. When requested, the Habitat Manager will coordinate with the local fire marshal to discuss appropriate access locations and measures to minimize impacts to sensitive biological resources in the event of a fire.

5.5 ANNUAL REPORT

An annual report summarizing the status of the mitigation area, results of the annual surveys, and all major actions taken since the last assessment will be provided to the City each year. This annual report will include: (1) information on the extent and overall health of the various habitats present within the preserve area; (2) any changes to the health or distribution of sensitive plant and animal species observed (provided on a map); (3) any observed changes resulting from natural or man-made causes; (4) summary of any management issues/tasks addressed during the last year; and (5) tasks or recommendations for changes in management identified for the next year. In addition, the annual report will include: (1) results of floral and faunal surveys; (2) photographs of the site from fixed photo points; (3) summary of the endowment; (4) funds generated, expenses incurred in performing site management, and year-end balance; (5) locations of sensitive species plotted on a site map; and (6) site maps providing information on the cumulative area of exotic species, trespass, dumping, and other concerns. This report also will compare the most recent data with that collected in previous years, and will outline appropriate remedial measures if habitat or sensitive species issues are noted.

5.6 OPEN SPACE BARRIERS

As part of the Riverwalk Project, the mitigation area will be surrounded by a 50-foot wide no use buffer. Boulders or deterrent vegetation, as well as peeler log fencing, will be installed at the edge of this no use buffer as part of the Riverwalk development project. Following completion of the five-year maintenance and monitoring program, the Habitat Manager will assume barrier inspection and replacement responsibilities. Inspection of the barrier will occur during monthly patrols, with a thorough barrier inspection conducted annually (in October). Ongoing barrier inspection and maintenance costs would be included in the HMP annual budget estimate. In the event that the barrier is damaged or removed, the Habitat Manager would immediately replace it. If appropriate, the Habitat Manager also would inform the Code Enforcement and/or Police Department of the City of the damage.

Methods/Schedule

Inspection of the barrier will occur during regularly scheduled visits. In the event that the barrier is damaged or removed, the Habitat Manager will notify the City for repair/replacement. If appropriate, the Habitat Manager also would inform the Code Enforcement and/or Police Department of the City of the damage.

5.7 PUBLIC AWARENESS

Acceptance of the preserve area as a valuable amenity by the community is an important consideration for the long-term viability of associated open space resources. To that end, steps will be taken to encourage participation by local residents and community members in the stewardship of the preserve area. It is also a goal of this plan that community members take pride in the maintenance and protection of the preserves. The community can help police the preserve area and assist the Habitat Manager, who cannot be present 24 hours a day, in preventing vandalism and unauthorized activities from occurring.

5.7.1 Measures

The following measures will be taken to maximize public awareness and acceptance of the open space:

- Steel signs attached to the fencing at approximately 50-foot intervals will provide notice, in both English and Spanish, that the area is an ecological preserve and that trespassing is prohibited. Maintenance/replacement of these signs will be the responsibility of the Habitat Manager.

- The Habitat Manager will inform adjacent residents (or other applicable individuals) that any damage to or alteration of the fence or the site would violate the Municipal Code, and be subject to possible action, fine, and/or criminal charges.

- The Habitat Manager will prepare and distribute an educational brochure to inform nearby residents and businesses of the sensitivity of the habitat, and how to minimize impacts to habitat. The brochure will include information regarding responsible pet care, proper landscape maintenance techniques, brush management, water quality, human intrusion, and lighting and noise requirements. It also will inform residents of the importance of not collecting plants or animals within the habitat. In order to help enforce the requirements, contact information for the City Neighborhood Code Compliance will be included in the brochure.

5.7.2 Schedule

Within 3 months of the start of habitat management activities, the Habitat Manager will ensure all signs have been installed and distribute educational brochures to the current residents adjacent to the preserve area.

5.8 ADDITIONAL MANAGEMENT CONCERNS

5.8.1 Trash Removal

The Habitat Manager will be responsible for the removal of trash from the preserve area. Trash removal would typically occur on an as-needed basis and would be conducted as an element of regularly scheduled site visits. In cases of excessive trash disposal within the preserve area, the Habitat Manager may enlist the help of community volunteer groups, as discussed above.

5.8.2 Illegal Occupancy

Illegal occupancy is a common problem in open space areas along the San Diego River. The Habitat Manager will regularly survey the site for encampments and report them to the City and applicable law enforcement agencies.

5.8.3 Poaching/Collecting

Removal of any plants, animals, rocks, minerals, or other natural resources will be prohibited within the preserve area. Anyone found removing natural resources would be informed, in a non-confrontational manner, that these activities are illegal. The Habitat Manager should maintain a log of all incidences of collecting within the preserve. Should a situation turn confrontational or if requests to discontinue illegal activities are ignored, the Habitat Manager shall report the offender(s) to the City and applicable law enforcement agencies.

The Habitat Manager may, at his/her discretion, allow seed collection and plant cuttings to be used for revegetation efforts within or outside of the preserve area. Any such activities will take place under the direct supervision of the Habitat Manager, and the amount of collected plant materials will be limited to ensure protection of on-site resources.

5.8.4 Lighting

Lighting from the developed adjacent area will not be directed toward the preserve area. The design of all project adjacent lighting features will conform to the guidelines in the City MSCP Subarea Plan Land Use Adjacency Guidelines (City 1997). The Habitat Manager will notify any neighbors who are in violation of these lighting restrictions. If the issue is not resolved, the Habitat Manager shall report the offender(s) to the City and applicable law enforcement agencies.

5.8.5 Fencing

In addition to the fencing described above, additional fencing may be used as a short- or long-term tool to protect habitat if encroachment becomes a problem and other means to deter unauthorized access (e.g., signing and notices to local residents) are not effective. Fencing may also be used for the following specific purposes:

- Protection of any revegetated habitat area (e.g., as required to replace habitat after catastrophic natural events such as fires).
- Prevention of unauthorized vehicle access.
- Prevention of unauthorized trail formation within the mitigation area.

Any proposed use of fencing within the preserve area (except the barriers described above) will be identified by the Habitat Manager based on observed site conditions and related issues (e.g., unauthorized access). The Habitat Manager would then submit proposed fencing needs and locations to the City for approval prior to installation.

7.0 REFERENCES

Alden Environmental, Inc. 2019a. Biological Technical Report for the Riverwalk Project. December.

2019b. Riverwalk Project Wetland Mitigation Plan. December.

City of San Diego. 1997. Multiple Species Conservation Program. City of San Diego MSCP Subarea Plan. March.