APPENDIX C

BIOLOGICAL TECHNICAL REPORT

BIOLOGICAL TECHNICAL REPORT

CITY OF SAN DIEGO
STADIUM RECONSTRUCTION PROJECT
SAN DIEGO COUNTY, CALIFORNIA

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LIST OF ACRONYMS

ADA	Americans with Disabilities Act
AMSL	above mean sea level
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CRPR	California Rare Plant Ranks
CWA	Clean Water Act
dBA	A-weighted decibel(s)
DSD	Development Services Department
EIR	environmental impact report
EO	Executive Order
ESL	Environmentally Sensitive Land
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
GIS	Geographic Information System
HCP	habitat conservation plan
I-8	Interstate 8
I-15	Interstate 15
KMEP MVT	Kinder Morgan Energy Partners Mission Valley Terminal
LED	light emitting diode
LEED	Leadership in Energy and Environmental Design
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Program
MHPA	Multi-Habitat Planning Area
MTS	Metropolitan Transit System
NAIP	National Agriculture Imagery Program

NCCP	Natural Community Conservation Plan
NFL	National Football League
NPPA	Native Plant Protection Act
PV	photovoltaic
RWQCB	Regional Water Quality Control Board
SWPPP	Storm Water Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

CHAPTER 1
INTRODUCTION

1.1 PURPOSE OF STUDY

The City of San Diego is proposing to replace the existing Qualcomm Stadium with a new multiuse sports, entertainment, and recreational stadium. After the new stadium is constructed Qualcomm Stadium would be demolished. For the purposes of this document, "the Project" includes construction of a new stadium and the demolition of the existing Qualcomm Stadium.

This Biological Technical Report summarizes the findings of biological resource surveys completed for the approximately 323-acre Biological Study Area (BSA); identifies and evaluates Project impacts to sensitive biological resources; and identifies Project avoidance, minimization, and mitigation measures to reduce potential impacts to sensitive biological resources. The results of this analysis will be incorporated into an environmental impact report (EIR) meeting the requirements of the California Environmental Quality Act.

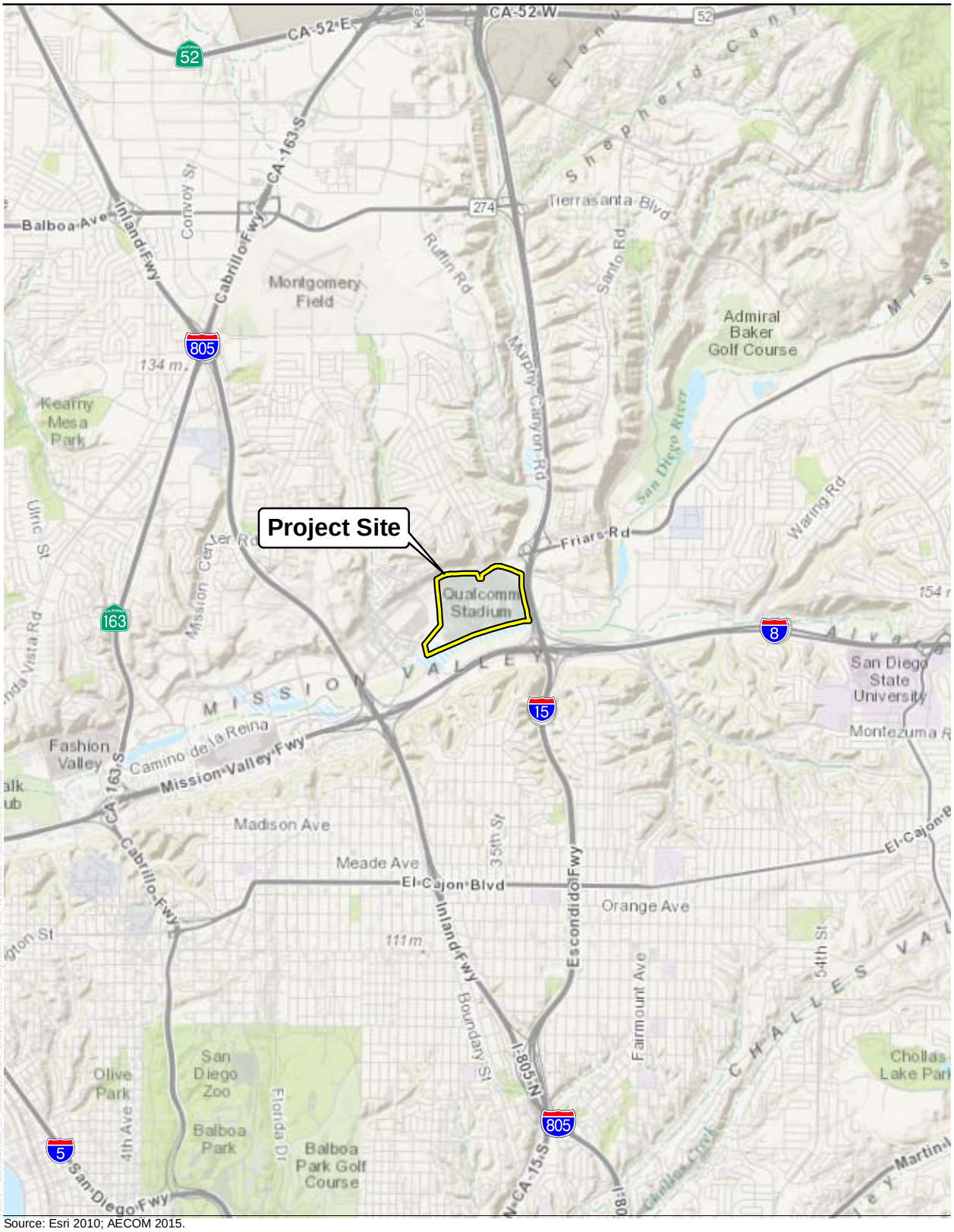
1.2 PROJECT LOCATION

The Project site is located in the City of San Diego, within Mission Valley, just west of Interstate 15 (I-15) and north of Interstate 8 (I-8) (Figure 1). The 17-acre stadium footprint is located on a portion of the 166-acre Project site, which is bounded by Friars Road to the north, I-15 to the east, the San Diego River to the south, and large commercial development to the west (Figure 2). Land use within the immediate vicinity includes both residential and commercial development, as well as open space (e.g., San Diego River).

1.3 PROJECT DESCRIPTION

The Project includes construction of a new stadium on an approximately 17-acre portion in the northeast corner of the Project site and the demolition of the existing Qualcomm Stadium. The Project site is considered the 166-acre Qualcomm Stadium property. The existing stadium is located on an approximately 15-acre portion in the center of the Project site surrounding by Stadium parking.

The Project is not proposing any new construction or construction staging within the River Influence Area of the City of San Diego's San Diego River Master Plan (City of San Diego



Source: Esri 2010; AECOM 2015.

1 0.5 0 1 Miles

Scale: 1 = 63,360; 1 inch = 1 mile

Figure 1
Regional Vicinity Map

Source: NAIP 2014.

600 300 0 600 Feet

Scale: 1 = 7,200; 1 inch = 600 feet

Figure 2
Biological Study Area

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2013) (Figures 3 and 4). The River Influence Area is defined as areas within 200 feet of the River Corridor Area. The River Corridor Area is defined as all areas within 35 feet of Federal Emergency Management Agency (FEMA) 100-year floodway. Therefore, no new construction or construction staging would occur within 235 feet of the San Diego River floodway. Development of the San Diego River Park Master Plan is not a part of this Project.

It is anticipated that the new stadium would be leased to the National Football League (NFL) for playing home games during the NFL pre-season, regular season, and post-season. The new stadium would also be used for events similar to what currently occurs at Qualcomm Stadium.

1.3.1 New Stadium

The new stadium would cover an area of approximately 750,000 square feet (approximately 17 acres) with an approximate floor area of 1,750,000 square feet. It is anticipated to be a steel-structured stadium that would meet all state and local seismic standards. For design flexibility, the new stadium would have a maximum height of 180 to 250 feet above the ground surface including lighting and architectural features on top of the structure. The new stadium would be a minimum of four levels and a fixed roof would cover a portion of the seating area. Table 1 shows a comparison of key features between the existing Qualcomm Stadium and the new stadium.

Table 1
Comparison of Qualcomm Stadium to the New Stadium Reconstruction

Details	Qualcomm Stadium	New Stadium	Increase/ Decrease
Site Size	166 acres	166 acres	-
Stadium Site Size	15 acres	17 acres	+ 2 acres
Square Footage	1,351,200 sf	1,750,000 sf	+ 398,800 sf
Parking Spaces	18,870 spaces	13,860 spaces	- 5,020 spaces
Maximum Stadium Height Including Lighting	120 feet	250 feet	+ 140 feet
Seating	70,560 seats	68,000 seats	- 2,560 seats
General	55,323 seats	57,000 seats	+ 1,677 seats
Suites	7,637 seats	3,000 seats	- 4,637 seats
Boxes	7,600 seats	8,000 seats	+ 1,600 seats

sf = square feet

Design and Construction

The design of the new stadium would include an inside out approach, with the field being the centerpiece. Internally there would be multiple tiers for seating, boxes, and suites to accommodate users. Concourses would be designed to provide a sense of arrival as attendees enter the interior of the stadium. The highest tier of seating would have a canopy with stadium lighting integrated into the design. The canopy would be tied together by a truss system for structural support.

The exterior elevations would include focused, directed, and shielded architectural accent lighting dependent on final design development. The exterior materials would be of steel, concrete, stucco, and other durable finishes.

The overall design would meet or exceed current uniform codes designed to achieve a Leadership in Energy and Environmental Design (LEED) Gold rating. The design would also meet or exceed current state and local seismic standards.

Construction preparation would begin along with some equipment mobilization toward the latter part of the 2016 NFL season. Once the season ends, full construction would begin. Construction would continue through the 2017 and 2018 NFL seasons. Construction activities would not occur on game days.

The initial construction stages would include designating a construction area and beginning removal of the existing parking lot northeast of Qualcomm Stadium. The new stadium site is below the elevation of Qualcomm Stadium. To avoid drainage and terrain issues, approximately 490,000 cubic yards of fill material would be imported to elevate the new stadium site so that field level would be approximately 65 to 70 feet above sea level. A retaining wall up to 20 feet tall would be required along the northeast Project site boundary to hold the imported fill. Utility conduits and duct banks would be installed prior to the soil import. Once the fill has been installed and compacted, installation of the new stadium foundation would begin, which would include piles. This phase would last approximately 5 months. Construction of the new stadium structure would then begin, including the seating areas, roof, fixtures, and exterior.

Construction/demolition haul routes would be established, and a construction/demolition traffic management plan would be implemented. The haul routes would be from I-15 to Friars Road and into the main stadium entrance. Approximately 24,500 truck trips would be required to import the soil from available project sites within the San Diego area. Construction/demolition hours of operation would be from 7:00 a.m. to 5:00 p.m. on weekdays and some weekends.

Construction/demolition traffic would avoid peak hours in the morning (6:30 to 8:30 a.m.) and evening (3:30 to 5:30 p.m.).

Seating

The new stadium would have a permanent seating capacity of up to 68,000 seats in four tiers of seating and would be designed to expand to approximately 72,000 seats for special events. The regular seating configuration would include general seating for 56,660 and premium seating for 11,000 composed of 8,000 club and very important person (or VIP) seats and 3,000 suite seats, and an additional 340 handicapped and companion seats.

Stadium Lighting

The new stadium would include lighting consisting of stadium event lighting and exterior stadium lighting (i.e., building perimeter lighting and parking lot lighting), as well as interior emergency lighting. The event lighting would include outdoor metal light emitting diode (LED) or similar energy-efficient luminaire floodlights with internal reflector systems to control spill light and glare. The lighting would be a minimum of 1,500 watts per fixture and the fixtures would be mounted within the partial roof of the new stadium and would not extend above the new stadium structure. Lighting levels in the stands would gradually taper off from the maximum light intensity levels on the playing field. Emergency lighting would provide approximately 2 foot-candles average illumination for emergency exit from the seating area and from the playing field.

Upgraded and new exterior lighting at the new stadium would be designed to illuminate pedestrian paths and parking areas around the stadium. Existing parking lot lighting would be upgraded to more energy-efficient light standards.

Sustainable Design

LEED is a U.S. Green Building Council certification program that recognizes best-in-class building strategies and practices. The new stadium would include energy efficiency, water conservation, low-impact development, and other green-building practices, which would be incorporated into the final design to achieve a minimum LEED Gold rating. Energy conservation measures would also include the use of solar photovoltaic energy. When coupled with a parking shade canopy, the photovoltaic system provides shade while generating electricity. There are several parking sites about the proposed stadium parking area that could be used for solar shade canopies. The parking sites would allow for shade structures facing southeast and southwest. For

this analysis, two areas were selected, one in the southeast parking area and one in the southwest parking area, but they could be located elsewhere. There would be about 114 covered parking spots. The canopies would be about 8.5-feet clear at the lowest point and angled toward the south at about a 7 degree angle to shed moisture and debris as it accumulates on top of the solar modules. Under each solar shade canopy, a few spots could be dedicated for car charging stations that would accommodate two parked vehicles at a time. These solar shade canopies would be located in the northwestern parking lot area away from nesting birds along the San Diego River and Murphy Canyon Creek.

LED lighting and energy control systems would also contribute to energy reduction.

Stadium Facilities

A breakdown of the proposed stadium facilities is shown in Table 2. Spectator facilities would be the largest overall stadium use and would include seating, suites, club areas, public restrooms, guest services, and a Hall of Fame Museum. Internal stadium circulation would include concourses, ramps, elevators, and escalators. This area would include a plaza space adjacent to the main stadium entrance that would allow tailgating, pre-game entertainment, and sponsor activation zones similar to the spaces at stadiums in Seattle, Washington; Washington DC; Miami, Florida; Philadelphia, Pennsylvania; and Dallas, Texas.

Table 2
Stadium Uses and Estimated Size

Stadium Uses	Square Footage
Spectator Facilities	715,000
Circulation (concourses, ramps, elevators, escalators)	540,000
Stadium Operations	160,000
Food Services and Merchandise Facilities	120,000
Teams Locker Facilities	80,000
Media Facilities	35,000
Administrative Facilities	100,000
Total	1,750,000

Stadium operations would include employee areas, office/conference room, shops, engineering, janitorial, grounds keeping, security, event operations, dock and staging operations, storage, and mechanical, electrical, and plumbing facilities. Food services and merchandise facilities would include concession offices, concession stands, concession commissary and storage, kitchens and pantries, restrooms, premium club and other dining facilities. Team locker facilities would

include locker facilities for the home team, visiting team, medical and training facilities, auxiliary locker rooms, officials and crew facilities, cheerleader's locker rooms, and performer dressing accommodations. Media facilities would include press box, booths, writing areas, TV areas, interview rooms within the stadium, and TV truck crew staging areas outside the new stadium. Administrative facilities include NFL and stadium offices and ticketing and support services.

The new stadium would include cooling towers which would be located on opposite sides of the stadium. It is anticipated that there would be two towers with three cells at 750 tons each of cooling capacity to be mounted at grade in a service yard area. The cooling towers would serve as a source of heat rejection for the air conditioning system. The cooling towers would be operated as needed during stadium events.

Utilities

The Project includes the utility improvements discussed below.

Water

The existing water system is fed from a 16-inch City of San Diego public water main. The water main is located in Friars Road west of the Project site. The Project site is identified as the entire 166-acre Qualcomm Stadium property. The water main enters the Project site in the northeastern area of the site and continues southerly near the eastern site boundary. The water main continues south and exits at the southeast corner of the Project site. Qualcomm Stadium receives water from the portion of this water main running north-south in the eastern portion of the Project site. A 12-inch line comes off this main and runs westerly to the existing Qualcomm Stadium. It then ties into a 10-inch water main that loops around the existing Stadium. Multiple services are fed off the 10-inch water main loop ranging in size from 2-inch to 8-inch connections. Six 6-inch water lines feed off the loop to serve the existing Stadium. It is anticipated that the new stadium would utilize a similar piping layout and design and the water lines serving Qualcomm Stadium would be taken out of service once the new stadium is in service. To provide adequate water pressure to the upper levels of the new stadium, two 20,000-gallon water tanks with booster pumps would be constructed adjacent to the new stadium. A 48-inch water main traverses the site along the northern and eastern boundaries of the Project site. It is anticipated that a portion of this line would need to be relocated on-site to accommodate the location of the new stadium.

Wastewater

The existing wastewater system exits Qualcomm Stadium at seven locations through 8-inch and 6-inch pipes. These pipes all feed into an 18-inch pipe on the western side of the existing Stadium, where it meets with an existing 8-inch sewer main that comes onto the 166-acre Qualcomm Stadium property on the north side, and continues to another 18-inch pipe south along the western side to an 84-inch trunk sewer running easterly near the southern boundary of the Project site. A similar piping layout would be utilized for the wastewater exiting the new stadium. It is anticipated that a similar number of 8-inch pipes would exit the new stadium and connect to the existing 18-inch line. A new on-site extension (approximately 500 feet within the Stadium parking lot) of the 18-inch line to the new stadium would be required.

Electrical

The existing electrical service for Qualcomm Stadium is fed from two 12-kilovolt electrical services. The primary or preferred service comes onto the existing Qualcomm Stadium site from the north and the alternate or back-up service comes onto the existing Stadium site from the southwest. It is anticipated that these two services would be adequate to serve the new stadium. The on-site power distribution facilities from these two services would need to be relocated or extended (approximately 500 feet within the Stadium parking lot) on-site to serve the new stadium. There are existing electrical facilities owned by San Diego Metropolitan Transit System (MTS) that serve the MTS Trolley Qualcomm Stadium Station. These facilities would remain in place unaffected by the Project.

Natural Gas

The existing natural gas service to Qualcomm Stadium is fed from one 2-inch-high pressure gas line that is fed from a 3-inch-high pressure gas line located in Friars Road. This line enters Qualcomm Stadium on the western side. It is anticipated that this service would be adequate to serve the new stadium. The on-site natural gas distribution from this service would need to be relocated or extended on-site (approximately 500 feet within the Stadium parking lot) to serve the new stadium.

Communications

The existing communications systems for Qualcomm Stadium include telephone facilities owned by AT&T and fiber optic facilities owned by AT&T and Cox Communications. AT&T fiber optic facilities enter from Friars Road/Mission Village Drive in the north and enter Qualcomm

Stadium on the west side. AT&T also has telephone facilities that cross on the east side of the Stadium site from north to south and enter the Stadium from the east side. Cox Communications also has fiber optic facilities that enter Qualcomm Stadium from the eastern side of the Project site. It is anticipated that these services would be adequate to serve the new stadium. The on-site communications facilities would need to be relocated or extended on-site (approximately 500 feet within the Stadium parking lot) to serve the new stadium.

Storm Drain and Stormwater

The existing Qualcomm Stadium site drains into three separate storm drain systems. One system drains the western half of the parking lot, one system drains the eastern half of the parking lot, and one system drains Qualcomm Stadium. Each system outfalls into the San Diego River near the southern boundary of the Project site. It is anticipated that the new stadium would utilize these three storm drain systems and the design would maintain approximately the same amount of flow tributary to each system through grading and drainage design.

Site design would be required to capture the rainfall volume associated with the 85th percentile storm (approximately 0.55 inch of rainfall across the entire site). This volume (or a portion thereof) would be retained on-site and not discharged, which includes the first flush runoff that is typically associated with the highest pollutant load. To meet this, the inner stadium footprint (outside perimeter pedestrian areas and parking lots) would incorporate self-retaining areas (e.g., cisterns, porous paving, bioretention planters/tree pits, interspersed parking island landscapes, site edge treatments, etc.), reducing the existing impervious areas. One self-retaining area would be located in the southwest portion of the Project site north of the MTS Trolley line and the other would be located in the southeastern portion of the Project site also north of the MTS Trolley line.

Harvest and reuse best management practices (BMPs) would be incorporated into the Project design to capture and store stormwater runoff for later use. The overall stormwater discharge volume from the new stadium and its surrounding parking area would be reduced through the use of underground cisterns. These facilities would capture and treat stormwater and thereby reduce the discharge of pollutants to the San Diego River, increase the time of concentration at the point of discharge (i.e., the river), and reduce the overall runoff volume released to the river. Reuse options for stored stormwater include:

- toilet and urinal flushing
- landscape and field irrigation (if natural turf)
- evaporative cooling

- dilution water for recycled water systems
- industrial processes
- stadium, seat, and/or vehicle washing
- and other non-potable uses

These systems would need to be designed to withstand the effects of rising groundwater during flooding conditions. Biofiltration would be a second (and complementary) option to stormwater reuse if the amount of stormwater runoff required to be retained is too great for the Project site's water harvesting needs. These systems would need to be designed and maintained knowing that they would be inundated by the San Diego River flood waters during the 100-year storm event, as well as on-site ponding in smaller storm events.

Stadium Parking, Access Improvements, and Access

This section will address changes in parking during construction and demolition and post-construction operations. Any access or other traffic improvements will be addressed.

Parking

After the new stadium has been constructed and Qualcomm Stadium has been demolished, parking on the entire Project site would be reoriented and reconstructed for optimum efficiency. The current Stadium parking layout is inefficient. The parking areas would include new or renovated lighting to include energy-efficient lights and fixtures. The parking lot would include new landscaping, impervious areas, and retention basins to meet water quality requirements. The existing paving would be removed, a drainage system would be installed, and the area would be contour graded to match the new stadium elevation. No parking improvements, construction, or laydown areas are proposed within the Influence Area of the San Diego River Master Plan.

The proposed new stadium would require 19,266 on-site parking spaces based on an assembly rate of one vehicle per three seats with a 15 percent reduction for transit (trolley). The Qualcomm Stadium parking lot currently has 18,870 spaces, which does not meet this parking requirement. A Traffic Management Plan would be implemented to control ingress prior to events and egress after events.

During new stadium construction and Qualcomm Stadium demolition, existing parking spaces would be reduced. Table 3 shows the current number of spaces and the number of spaces during construction, demolition, and new stadium operation.

Table 3
Stadium Parking Summary

Stadium Parking	Currently	During New Stadium Construction	During Qualcomm Stadium Demolition	New Stadium Operation
Total Spaces	18,870	14,530	13,500	13,860

Source: AECOM

For NFL events, season ticket holders would be assigned a specific parking lot for the duration of the season. Parking passes and specific directions to assigned lots would be distributed with tickets to allow vehicles to arrive at their assigned parking lots as quickly and efficiently as possible and minimize traffic congestion in the stadium area. Employees arriving in private automobiles would be restricted to specific parking lots.

Charter and shuttle buses would be parked in a specified location of the stadium parking lot. There is sufficient space for bus parking on-site. These buses would remain at this location for the duration of the events. All the charter and shuttle buses would enter and exit their designated parking area via Qualcomm Way and Rancho Mission Road. Between 1,000 and 1,200 buses would be accommodated at the new stadium. Priority parking would be provided for low emission vehicles, carpools, vanpools, buses, and Americans with Disabilities Act (ADA) accessible, bikes, and motorcycles. The existing bike lane along the eastern boundary of the Project site would be reconstructed in place once the new stadium and parking lot in that area are completed. The Project site would accommodate bike and pedestrian circulation on-site, including ADA accessible paths.

Parking at non-NFL events varies from slightly over 1,000 vehicles for parking lot events and high school football games to nearly 13,000 vehicles for monster truck and super cross events (Table 4). For smaller events, ingress and egress is typically confined to the main entrance but for larger events all gates are opened. MTS Trolley and buses are also available.

Access Improvements

Access improvements may be required at the intersection of Friars Road and Mission Village Drive extending into the main stadium entrance (known as Coryell Way). These improvements would include:

- Improved radii at turning movements

- Curb and gutter
- Paving and striping

Table 4
Summary of Events at Qualcomm Stadium and Anticipated Events at the New Stadium

Event	Qualcomm Event Days[1]	Qualcomm Event Attendance[1]	Qualcomm Event Parking[1]	Projected New Stadium Event Days	Projected Attendance
STADIUM EVENTS					
NFL Football					
NFL Pre- & Regular Season	10 home games	62,000	14,589	10 home games	68,000
NFL Post-Season	0	-	-	2 games	72,000
Super Bowl					
Collegiate Football					
San Diego State University	6 games	15,500	5,474	6 games	30,000
Poinsettia Bowl	1 game	33,000	6,837	1 game	40,000
Holiday Bowl					
Mountain West Championship	-	-	-	1 game	37,000
Other Events					
High School Football	3 games	4,000	1,100	3 games	18,000
Soccer Games	2	20,000-50,000	2,650	5	20,000-60,000
Religious Events	4[3]	20,000	9,515	6	20,000
Concerts	0[4]	-	-	2	40,000-60,000
Monster Trucks Super-Cross	1	50,000	12,782	1	65,000
NON-STADIUM EVENTS					
Conference Center					
Large Events				2	15,000
Small Events				48	5,000
Plaza Events	-	-	-	5	10,000

1. Past five year average.
2. Large portions of parking area inaccessible for parking due to event tents, media zones, and increased bus/shuttle parking.
3. This reflects one 3-day event of 20,000 attendances each day plus one additional 1-day event at 20,000.
4. The recent One Direction concert was the first in the past 12 years and does not present statistical significance for characterizing the base line. This concert had 13,456 cars enter the site with a disproportionately high level of Drop-off/Pick-ups due to the crowd pre-teen/teen demographic.
5. These include Car Sales, RV Sales, Law Enforcement Training, Legal Racing, Fun Runs, etc.

Stadium Access

Vehicular Access

Access to the new stadium would remain the same as the current Qualcomm Stadium via vehicles (private vehicles, recreational vehicles, and chartered and shuttle buses), and the MTS Trolley and bus systems.

The Project site is located near four major freeways. I-15 is adjacent to the Project site to the east, I-8 is approximately 0.25 mile to the south, I-805 is less than 1 mile to the west, and State Route 163 is located approximately 2.4 miles farther west of the Project site. From these freeways, eastbound and westbound vehicles would continue to access the new stadium through the Main Gate at Mission Village Drive via Friars Road, or traveling eastbound through the Marquee Gate from Friars Road. An additional westbound gated access exists via San Diego Mission Road at the northeast corner of the Project site. Two eastbound driveway access points also exist via Friars Road at the northwest corner of the Project site but are not proposed as routine access points.

Bus access would continue to be provided at the southeast corner of the Project site via a gate at Rancho Mission Road.

Transit Opportunities

MTS Trolley

The MTS Green Line Trolley provides service to the existing trolley station in the Qualcomm Stadium parking lot. The Green Line extends from 12th Street and Imperial Avenue in downtown San Diego through Old Town through Mission Valley, passes the existing Qualcomm Stadium and ends in the City of Santee. The Green Line connects to the Blue Line and Orange Line at 12th Street and Imperial Avenue. The Blue Line extends south to San Ysidro and the Orange Line extends east to the City of El Cajon.

Shuttle Buses

It is expected that express charter bus services would continue to offer roundtrip bus transportation to all NFL pre-season and regular season home games, including Monday and Thursday night games. It is also anticipated that private shuttles would continue to offer service to the new stadium. Some of the existing pickup and drop off locations anticipated to continue include:

- Governor Drive and I-805 Park & Ride
- Clairemont Mesa Boulevard and Complex Drive
- Mira Mesa Boulevard and I-15 Park & Ride
- Sports Authority, Chula Vista
- Vons, La Mesa
- Carmel Valley Park & Ride, Del Mar

- Sheraton San Diego Hotel and Marina
- Oceanside
- Carlsbad
- Encinitas
- Escondido
- Temecula

Stadium Operations and Use

The new stadium box office would be located on the ground level of the stadium. The box office is expected to be open year-round from 9:00 am to 5:00 pm Monday through Saturday and for 3 hours prior to kick-off on Sunday home game days during football season.

The new stadium would be designed specifically for use by an NFL team. The new stadium, however, is expected to be used for other non-NFL events that are similar to the type of events that have occurred at Qualcomm Stadium. Table 4 includes a list of events that have occurred at Qualcomm Stadium over the past 5 years. These types of events would also be anticipated to occur at the new stadium.

1.3.2 Qualcomm Stadium Demolition

Once the new stadium is constructed and ready for use, demolition would then begin on the existing Qualcomm Stadium. Demolition is expected to last approximately 12 to 14 months. An NFL team would continue to play in the new stadium during Qualcomm Stadium demolition. Demolition activities would be scheduled to not interfere with stadium events in the new stadium.

The initial demolition steps would be abatement of the Qualcomm Stadium for asbestos-containing materials, lead-based paint, and other hazardous materials. Once the structure is abated appropriately, it would be prepared for implosion. Demolition of Qualcomm Stadium would be initiated by implosion using explosives in one coordinated event. Implosion methods are very effective for bringing down tall structures that would be difficult to demolish with typical construction equipment, or are too expensive to demolish from the top downward. An implosion also reduces the length of time neighboring areas are subject to the noise from a long duration of conventional demolition. Implosion methods use highly specialized explosives to undermine the supports of a structure so it collapses either within its own footprint or in a predetermined path. The implosion process is especially suited for high-rise buildings and special structures (e.g., stadiums, cooling towers, smokestacks, boilers, steel mill furnaces).

Project-specific demolition methods and explosives for the demolition of Qualcomm Stadium would be determined in a demolition plan prepared prior to obtaining a demolition permit from the City of San Diego. Noise levels for the implosion of concrete structures have ranged from 120 to 135 dB at the source, lasting only a brief period of time (typically less than 8 seconds). Human safety standoff distance of approximately 1,000 feet would be enforced during the implosion.

After the implosion, the materials would be sorted for reuse, recycling, and lastly landfill disposal. Seventy-five percent of construction and demolition debris would be required to be diverted to landfills. The demolition debris would be removed from the site; it is expected that approximately 920,000 cubic yards of material would need to be hauled from the site to Miramar Landfill for clean soil, Otay Landfill for soil exceeding gasoline and diesel contamination, or Soil Safe in Adelanto for contaminated soil. Approximately 48,100 truck trips would be required to haul the debris away.

1.3.3 Project Schedule

The proposed sequence of construction, operation, and demolition is shown in Table 5. The new stadium would be constructed while the NFL and Aztecs continue to play in Qualcomm Stadium. The timeline for construction would begin in late 2016 with construction equipment mobilization and preparation, and would end with the demolition, cleanup, and parking lot reconstruction in the fall of 2020. The new stadium would be ready for the NFL and collegiate 2019 football seasons.

Table 5
Stadium Reconstruction and Qualcomm Stadium Demolition

Activity	Approximate Duration (calendar days)	Approximate Start Date	Approximate Finish Date
Construction Mobilization	40 days	Mon 12/5/16	Sat 1/14/17
New Stadium Construction	960 days	Mon 1/16/17	Tue 9/3/19
Qualcomm Demolition and Parking Lot Reconstruction	400 days	Tue 9/3/19	Wed 10/7/20
NFL 2017 Season	166 days	Tue 8/1/17	Sun 1/14/18
NFL 2018 Season	165 days	Wed 8/1/18	Sun 1/13/19
NFL 2019 Season	164 days	Thu 8/1/19	Sun 1/12/20
NFL 2020 Season	169 days	Sat 8/1/20	Sun 1/17/21

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CHAPTER 2
REGULATORY FRAMEWORK

This section provides a summary of the federal and state environmental regulations that govern the biological resources applicable to the BSA.

2.1 FEDERAL REGULATIONS

2.1.1 Endangered Species Act

The Federal Endangered Species Act (FESA) provides protections for species endangered or threatened with extinction. FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 Code of Federal Regulations [CFR] Section 17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR Section 17.3). Actions that result in take can result in civil or criminal penalties. See Section 2.3 for a discussion of the habitat conservation plan (HCP) that addresses federally endangered and threatened species in the City of San Diego (i.e., the City of San Diego's Multiple Species Conservation Program [MSCP]). Projects that are implemented consistent with *San Diego Municipal Code, Land Development Code, Biology Guidelines* (Biology Guidelines; City of San Diego 2012a) would be allowed to "take" listed species with the City of San Diego's authorization and approval.

2.1.2 Clean Water Act

Pursuant to Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) is authorized to regulate any activity that would result in the discharge of dredged or fill material into jurisdictional waters of the U.S., which include those waters listed in 33 CFR Part 328 (Definitions). USACE, with oversight by the U.S. Environmental Protection Agency (USEPA), has the principal authority to issue CWA Section 404 Permits.

Pursuant to Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB), Region 9, certifies that any discharge into jurisdictional waters of the U.S. will comply with state

water quality standards. RWQCB, as delegated by USEPA, has the principal authority to issue a CWA Section 401 water quality certification or waiver.

2.1.3 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits any person unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention…for the protection of migratory birds…or any part, nest, or egg of any such bird" (16 U.S. Code [USC] 703). The list of migratory birds protected by the MBTA includes nearly all bird species native to the United States. The statute was extended in 1974 to include parts of birds, as well as eggs and nests. Thus, it is illegal under the MBTA to directly kill, or destroy a nest of, nearly any bird species, not just endangered species. Activities that result in removal or destruction of an active nest (a nest with eggs or young being attended by one or more adults) would violate the MBTA. Removal of unoccupied nests, or bird mortality resulting indirectly from a project, is not considered a violation of the MBTA.

2.1.4 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) is the primary law protecting eagles, including individuals, and their nests and eggs (16 USC Section 668 et seq.). It defines "take" to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb" (16 USC 668c). "Disturb" is defined by regulation at 50 CFR 22.3 in 2007 as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause,…(1) injury to an eagle, (2) a decrease in productivity…, or (3) nest abandonment…". Under the BGEPA Eagle Permit Rule (50 CFR 22.26), the U.S. Fish and Wildlife Service (USFWS) may issue permits to authorize limited, non-purposeful take of bald eagles and golden eagles.

2.1.5 Executive Order 11988, Floodplain Management

Executive Order (EO) 11988 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. This EO provides an eight-step process that agencies carry out as part of their decision-making process for projects that have potential impacts to or within a floodplain.

2.1.6 Executive Order 11990, Protection of Wetlands

Pursuant to EO 11990, each federal agency is responsible for preparing implementing procedures for carrying out the provisions of the EO. The purpose of this EO is to "minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands." Each agency, to the extent permitted by law, must avoid undertaking or providing assistance for any activity located in wetlands, unless the head of the agency finds that there is no practical alternative to such activity, and the proposed action includes all practical measures to minimize harm to wetlands that may result from such actions. In making this finding, the head of the agency may take into account economic, environmental, and other pertinent factors. Each agency must also provide opportunity for early public review of any plans or proposals for new construction in wetlands.

2.1.7 Executive Order 13112, Invasive Species

EO 13112 requires federal agencies to "prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health effects that invasive species cause." An invasive species is defined by the EO as "an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health." Alien species are defined, with respect to a particular ecosystem, as any species (including its seeds, eggs, spores, or other biological material capable of propagating that species) that is not native to that ecosystem.

2.2 STATE REGULATIONS

2.2.1 California Fish and Game Code

The California Fish and Game Code (CFGC) regulates the taking or possession of birds, mammals, fish, amphibians, and reptiles, as well as natural resources such as wetlands and waters of the state. Applicable sections of the CFGC are discussed in turn below.

Section 2050 Et Seq. – California Endangered Species Act

This California Endangered Species Act (CESA) (Section 2050 et seq.) prohibits the "take" (defined as "to hunt, pursue, catch, capture, or kill") of state-listed species except as otherwise provided in state law. CESA is administered by California Department of Fish and Wildlife (CDFW), which is similar to FESA. State lead agencies are required to consult with CDFW to

ensure that their authorized actions are not likely to jeopardize the continued existence of any state-listed species or result in the degradation of occupied habitat.

Under Section 2081, CDFW authorizes "take" of state-listed endangered, threatened, or candidate species through incidental take permits or memoranda of understanding if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in questions, and (4) the applicant ensures suitable funding to implement the measures required by CDFW.

See Section 2.3 for a discussion of the Natural Community Conservation Plan (NCCP) that addresses state endangered and threatened species in the City of San Diego (i.e., the City of San Diego's MSCP). Projects that are implemented consistent with the City's Biology Guidelines (City of San Diego 2012a) would be allowed to "take" state listed species with the City's authorization and approval.

Section 3503 and 3503.5 – Protection of Birds, Nests, and Raptors

CFGC Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

Section 3511, 4700, 5050, and 5515 – Fully Protected Species

Protection of fully protected species is described in CFGC 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.

Section 3513 – Migratory Birds

This code protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame birds.

Section 1900 Et. Seq. – Native Plant Protection Act

The Native Plant Protection Act (NPPA) (CFGC Section 1900 et seq.) includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for "rare and endangered" are different from those contained in CESA, although CESA-listed rare and endangered species are included in the list of species protected under the NPPA.

Section 1600 Et. Seq. – Streambed Alteration Agreement

Pursuant to Section 1600 et seq. of the CFGC, CDFW regulates activities of an applicant's project that would substantially alter the flow, bed, channel, or bank of streams or lakes, unless certain conditions outlined by CDFW are met by the applicant. The limits of CDFW jurisdiction are defined in CFGC Section 1600 et seq. as the "bed, channel, or bank of any river, stream,1 or lake designated by CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit."[2] However, in practice, CDFW usually extends its jurisdictional limit and assertion to the top of a bank of a stream, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider.

In some cases, drainage ditches and retention ponds[3] can be potentially considered under the regulatory administration of CDFW. CDFW provides specific guidance concerning its regulatory administration in California Code of Regulations Title 14 Section 720 (Designation of Waters of Department Interest):

For the purpose of implementing Sections 1601 and 1603 of the Fish and Game Code, which requires submission to the department of general plans sufficient to indicate the nature of a project for construction by or on behalf of any person, governmental agency, state or local, and any public utility, of any project which will divert, obstruct, or change the natural flow or bed of any river, stream, or lake designated by the department, or will use material from the streambeds designated by the department, all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams, and streambeds, *which may have intermittent flows of water*, are hereby designated for such purpose. (Italics added.)

[1] Title 14 California Code of Regulations (CCR) 1.72 defines a stream as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

[2] This also includes the habitat upon which they depend for continued viability (California Fish and Game Code Division 5, Chapter 1, Section 45, and Division 2, Chapter 1, Section 711.2[a]).

[3] Title 14 CCR 1.56 defines a lake as a feature that "includes lakes or man-made reservoirs."

Porter-Cologne Water Quality Act

Pursuant to Section 13000 et seq. of the California Water Code (the 1969 Porter-Cologne Water Quality Control Act), RWQCB is authorized to regulate any activity that would result in discharges of waste or fill material to waters of the state, including "isolated" waters and wetlands (e.g., vernal pools and seeps). Waters of the state include any surface water or groundwater within the boundaries of the state (California Water Code Section 13050[e]). RWQCB also adopts and implements water quality control plans (basin plans) that recognize and are designed to maintain the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, maintaining water quality, and addressing the water quality problems of that region.

Designated beneficial uses of state waters that may be protected against quality degradation include preservation and enhancement of fish, wildlife, designated biological habitats of special significance, and other aquatic resources or preserves.

California Environmental Quality Act

The California Environmental Quality Act of 1970 (CEQA), Public Resources Code 21100 et seq., requires lead agencies to evaluate the environmental impact associated with a proposed project. CEQA requires that a local agency prepare an EIR on any project it proposes to approve that may have a significant effect on the environment. The purpose of an EIR is to provide decision makers, public agencies, and the general public with an objective document that fully discloses the potential environmental effects of a proposed project. The EIR process is specifically designed to objectively evaluate and disclose potentially significant direct, indirect, and cumulative impacts of a proposed project; to identify alternatives that may reduce or eliminate a project's significant effects; and to identify feasible measures that mitigate significant effects of a project. In addition, CEQA requires that an EIR identify those adverse impacts that remain significant after mitigation.

2.3 LOCAL REGULATIONS

The City of San Diego adopted a Multiple Species Conservation Program (MSCP) Subarea plan in 1997. The goal of the City of San Diego's MSCP was to create a habitat preserve system known as the Multi-Habitat Planning Area (MHPA) in order to coordinate conservation efforts on a regional scale while allowing development projects to occur.

The City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) was prepared pursuant to the general outline developed by USFWS and CDFW to meet the requirements of the California Natural Communities Conservation Planning Act of 1992. It serves as the Natural Communities Conservation Plan necessary under the Endangered Species Act for the issuance of an Incidental Take Permit for MSCP "covered" species. The MSCP identifies certain species as considered "covered," that is adequately conserved, within the MHPA. The Subarea plan specifies conditions of coverage for each covered species that must be applied when those species occur in a project area.

In addition, through the Biology guidelines in the Land Development Code (City of San Diego 2012a), the City regulates development activities according to project location, within or outside of the MHPA. Upon project compliance with the MSCP Subarea plan and the Biology guidelines, the City is able to issue "take" authorization for covered species. Prior to the adoption of the MSCP, this "take" authorization would have required project-by-project review with the regulatory agencies.

Thus, the MSCP provides for the preservation of a network of habitat and open space, protecting biodiversity, and enhancing the region's quality of life. The plan is designed to preserve native vegetation and meet the habitat needs of multiple species, rather than focusing preservation efforts on one species at a time. By identifying priority areas for conservation and other areas for future development, the MSCP streamlines permit procedures for development projects that impact habitat. It also provides an economic benefit by reducing constraints on future development and decreasing the costs of compliance with federal and state laws that protect biological resources.

In addition to the City of San Diego's MSCP Subarea Plan, other local planning policy documents include the *City of San Diego Guidelines for Conducting Biology Surveys* (City of San Diego 2002) and the City's Biology Guidelines (City of San Diego 2012a), referenced above. Within these guidelines, the City of San Diego established Environmentally Sensitive Land (ESL) regulations to ensure protection of resources consistent with CEQA and the City of San Diego's MSCP. ESLs include lands within the MHPA, wetlands, sensitive vegetation communities, habitat for listed species, lands supporting narrow endemics, and steep slopes. The regulations encourage avoidance and minimization of impacts to ESLs. The City's Biology Guidelines define the survey and impact assessment methodologies and mitigation requirements for unavoidable impacts (City of San Diego 2012a).

Sensitive biological resources are defined by the San Diego Municipal Code (City of San Diego 2012a) as:

- Lands that have been included in the MHPA as identified in the City of San Diego's MSCP Subarea Plan;
- Wetlands (as defined by the Municipal Code, Section 113.0103);
- Lands outside of the MHPA that contain Tier I habitats, Tier II habitats, Tier IIIA habitats, or Tier IIIB habitats as identified in the Biology Guidelines;
- Lands supporting species or subspecies listed as rare, endangered, or threatened;
- Lands containing habitats with narrow endemic species as listed in the Biology Guidelines; and
- Lands containing habitats of covered species as listed in the Biology Guidelines.

CHAPTER 3
METHODOLOGY

The following chapter describes the methods used to characterize the biological resources present or potentially present within and adjacent to the Project. The analysis included a review of relevant databases and published literature as well as a field reconnaissance survey that focused on the 166-acre Project site plus a 500-foot buffer (herein collectively referred to as the BSA).

3.1 LITERATURE REVIEW

Available information pertaining to the natural resources of the region was reviewed prior to conducting field surveys. The following sources were consulted to obtain public information relevant to the BSA:

- San Diego River Park Master Park Plan (City of San Diego 2013)
- City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan (City of San Diego 1997a)
- Aerial photography of the BSA, U.S. Geological Survey (USGS) Seamless Data Distribution System (USGS 2003)
- Soil Survey of San Diego County, San Diego Area, California, Soil Conservation Service (USDA 1973)
- USFWS regional species database and National Wetland Inventory (USFWS 2015)
- USGS National Hydrology Dataset flow line data (USGS 2015)
- County of San Diego SanGIS Geographic Information System (GIS) Data (County of San Diego 2015)
- eBird online database of bird distribution and abundance (eBird 2015)
- California Natural Diversity Data Base (CNDDB) (CDFW 2015)
- California Native Plant Society (CNPS) Electronic Inventory (CNPS 2015)

For the CNDDB and CNPS database queries, the biologists searched special-status species records within a 9-quad search area (i.e., species records within the nine USGS 7.5-minute topographic quadrangles encompassing and immediately surrounding the BSA). Special-status species are plant and wildlife species that have been afforded protection or special recognition by federal, state, or local resource agencies or organizations. Special-status species typically have relatively limited distribution and may require specialized habitat conditions. For the purposes of this report, species were considered special-status if they met at least one of the following criteria:

- Listed or proposed for listing (including candidate species[4]) under the FESA and CESA.
- CDFW Species of Special Concern.
- CDFW Fully Protected species.
- California Rare Plant Rank Species (formerly CNPS listed species[5]): (CRPR) 1A (presumed extinct in California and rare/extinct elsewhere), 1B (rare, threatened, and endangered in California and elsewhere), 2A (presumed extinct in California, but more common elsewhere), 2B (rare, threatened, or endangered in California, but more common elsewhere), or 3 (plants are those for which more information is needed [a review list]) (CNPS 2015). All plants constituting CRPR 1A, 1B, 2A, 2B, and 3 meet the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code.
- Some (as specified in CNDDB), but not all, CRPR 4 plant species meet the definitions of Sections 2062 and 2067 (CESA) of the CFGC (CNPS 2015). CRPR 4 plants are those of limited distribution (watch list) (CNPS 2015).
- Species covered by the City of San Diego MSCP.

[4] Candidate species are those petitioned species that are actively being considered for listing under the Federal Endangered Species Act (FESA), as well as those species for which the U.S. Fish and Wildlife Service (USFWS) has initiated a FESA status review, as announced in the Federal Register. Proposed species are those candidate species that warrant listing as determined by USFWS and have been officially proposed for listing in the Federal Register. Under the California Endangered Species Act, candidate species are those species currently petitioned for state-listing status.

[5] In 2010, the California Department of Fish and Wildlife (CDFW) changed the name of the California Native Plant Society (CNPS) Lists in its publications to "California Rare Plant Rank," The change was intended to correct a public misimpression that the CNPS was solely responsible for the rank assignments. Rare Plant Status Review groups (300+ botanical experts from government, academia, nongovernmental organizations, and the private sector) produce the rank assignments for rare plants and both CDFW and CNPS jointly manage this collaborative effort.

3.2 FIELD RECONAISSANCE SURVEY

A field reconnaissance survey was conducted on June 29, 2015, by AECOM biologists Dallas Pugh and Keir Morse to evaluate existing and potentially occurring biological resources present within the BSA. Given that the majority of the BSA is currently developed, the survey focused on natural habitat (i.e., undeveloped areas) including areas within the City's MSCP MHPA north of Friars Road and along the San Diego River, which runs along the southern edge of the BSA (Figure 4). The survey also focused on Murphy Canyon Creek, which runs along the eastern edge of the BSA. The biologists walked meandering transects through these undeveloped areas to evaluate resources. Where topography was too steep or access was not permitted, biologists used binoculars to assess the area. Where vegetation was too thick to survey a given habitat, the biologists used vantage points on the tops of man-made structures (e.g., overpasses) or drainage embankments to assess the area.

The biologists mapped vegetation communities and cover types and recorded any potential resources for species. Vegetation communities and cover types were mapped based on the dominant and characteristic plant species, in accordance with the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008), based on the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Vegetation community mapping was conducted using digital mapping tools capable of displaying aerial ortho-photographs, topographic relief, and other digitized geographic data at any scale.

Plant and wildlife were identified to species in the field and recorded. The biologists were equipped with a Global Positioning System unit to document the location of sensitive species or resources incidentally detected. Field data were collected on high-resolution aerial field maps and recorded in a field notebook. No focused special-status plant or wildlife surveys were completed as no direct impacts are anticipated to occur within suitable habitat for special-status species (i.e., Murphy Canyon Creek and the San Diego River). Furthermore, the San Diego River is well studied and numerous special-status species are known to utilize the river corridor.

A general assessment of potentially jurisdictional waters was also conducted within the BSA. A formal jurisdictional delineation was not conducted because the Project site does not contain potentially jurisdictional features and therefore no direct impacts would occur. Should impacts be identified during the design phase of the Project, a formal delineation would be warranted to determine the limits of jurisdiction and channel the appropriate permitting processes.

The biologists noted drainage features and riparian habitats that could potentially fall under the jurisdiction of CDFW, the USACE, the RWQCB, and/or the City Land Development Code and Biology Guidelines (City of San Diego 2012a).

Photographs were taken throughout the BSA, focusing on features of biological significance (drainages, riparian woodland, etc.).

CHAPTER 4
RESULTS AND DISCUSSION

The following chapter provides the results of the literature review and field reconnaissance survey described in Chapter 2. The BSA is mostly developed and consists of the existing Qualcomm Stadium, parking lots, residential and commercial development, and associated infrastructure (i.e., Friars Road and I-15). Elevation ranges from approximately 55 feet above mean sea level (AMSL) in the southwest to approximately 100 feet AMSL in the northwest. Two major drainage features occur within the BSA: the San Diego River along the southern edge of the BSA and Murphy Canyon Creek along the eastern edge of the BSA.

The San Diego River originates in the Cuyamaca Mountains northwest of the town of Julian and then flows to the southwest until it reaches the El Capitan Reservoir. Below El Capitan Dam, the river runs west through the cities of Santee and San Diego and discharges into the Pacific Ocean near the entrance to Mission Bay, forming an estuary. The vegetation communities within the river include a mosaic of pristine riparian woodlands, riparian scrub, open water habitats, wetlands and anthropogenically disturbed areas that now support nonnative and California Invasive Plant Council (Cal-IPC) (Cal-IPC 2006) invasive species (e.g., giant reed [*Arundo donax*]). Vegetation communities along the river that occur within the BSA are described in detail in Section 4.1.

Murphy Canyon Creek originates to the north of the BSA from multiple headwaters in the foothills generally south and east of Marine Corps Air Station Miramar (e.g., undeveloped/open space associated with Mission Trails Regional Park and San Clemente Canyon). The creek narrows into a single channel along the western edge of I-15 where it collects stormwater runoff from adjacent residential and commercial developments. The creek consists of intermittent aboveground and belowground segments that are both concrete-lined and earthen. As it approaches the Kinder Morgan Energy Partners Mission Valley Terminal (KMEP MVT) just north of the BSA, Murphy Canyon Creek becomes a covered concrete-lined channel. Near the northeastern corner of the BSA, the concrete-lined channel widens for a distance of approximately 1,200 feet and then becomes earthen for approximately 1,600 feet before connecting with the San Diego River.

Murphy Canyon Creek is regularly maintained by the City for purposes of flood control. Maintenance includes vegetation and sediment removal as well as maintenance of a man-made earthen berm along the western edge of the creek to ensure the channel can handle the volume of storm events. During moderate storm events, water overtops the berm and floods the existing

parking area. Vegetation communities within the portion of Murphy Canyon Creek in the BSA include disturbed wetlands and patches of riparian woodland. Vegetation communities are described in detail in Section 4.1.

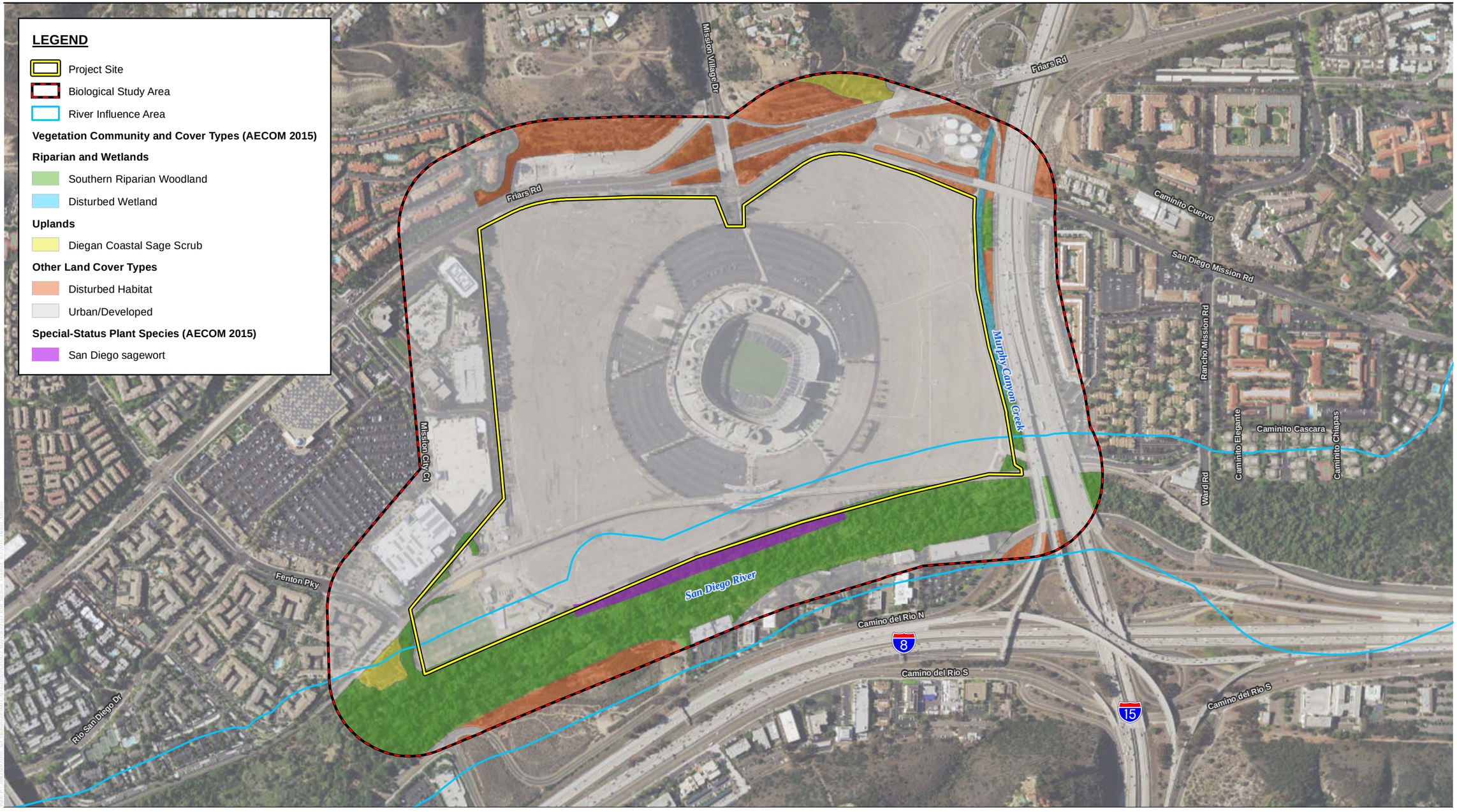
The Project site is adjacent to a highly urbanized area and lighting from I-8, I-15, MTS Green Line Trolley, the Qualcomm Stadium parking lot, and other urban structures currently have a major influence on Murphy Canyon Creek and the San Diego River. Special-status bat and/or avian species inhabiting the adjacent riparian habitat have been exposed to existing light levels at the Project site since Qualcomm Stadium was opened in 1967.

Existing noise at the Project site is primarily influenced by noise from vehicle traffic on the roadways adjacent to and in proximity of the Project site and, secondarily, from the noise generated by Stadium events. The predominant traffic noise is from I-15 and I-8 based on average daily traffic volumes. Secondary noise sources of the Project site (non-event) are activities at the surrounding industrial, commercial, office, and residential areas; the MTS Trolley system; and aircraft flyover. Murphy Canyon Creek is narrow with minimal vegetation to buffer the habitat from the constant urban noise caused from freeway traffic (I-15) and Qualcomm Stadium events under existing conditions. Similarly, the San Diego River is subject to constant urban noise because it crosses under the I-15 and is subject to noise from Qualcomm Stadium events as well as the MTS Green Line Trolley that runs adjacent to it on a daily basis. Daytime and nighttime noise levels along the Murphy Canyon Creek and the San Diego River are near and slightly above 70 and 60 A-weighted decibels (dBA), respectively (see Section 5.2.3 for a detailed discussion of noise levels at Murphy Canyon Creek and the San Diego River).

4.1 VEGETATION COMMUNITIES AND COVER TYPES

Five vegetation communities and other land cover types were identified within the BSA during vegetation mapping efforts (Table 6 and Figure 3): southern riparian woodland, disturbed wetland, Diegan coastal sage scrub, disturbed habitat, and urban/developed. Representative photographs are included in Appendix A.

Vegetation communities considered sensitive by the City include wetlands and Tier I, II, IIIA, and IIIB upland vegetation communities, as described by the City's Biology Guidelines (City of San Diego 2012a). Three sensitive vegetation communities were mapped within the BSA: southern riparian woodland, disturbed wetland, and Diegan coastal sage scrub (Table 1). Sensitive vegetation communities within the BSA are mostly confined to the existing MHPA boundary, which occurs outside the Project site, within the 500-foot buffer (Figure 4).



Source:NAIP 2014; AECOM 2015.

600 300 0 600 Feet

Scale: 1 = 7,200; 1 inch = 600 feet

Figure 3
Botanical Resources

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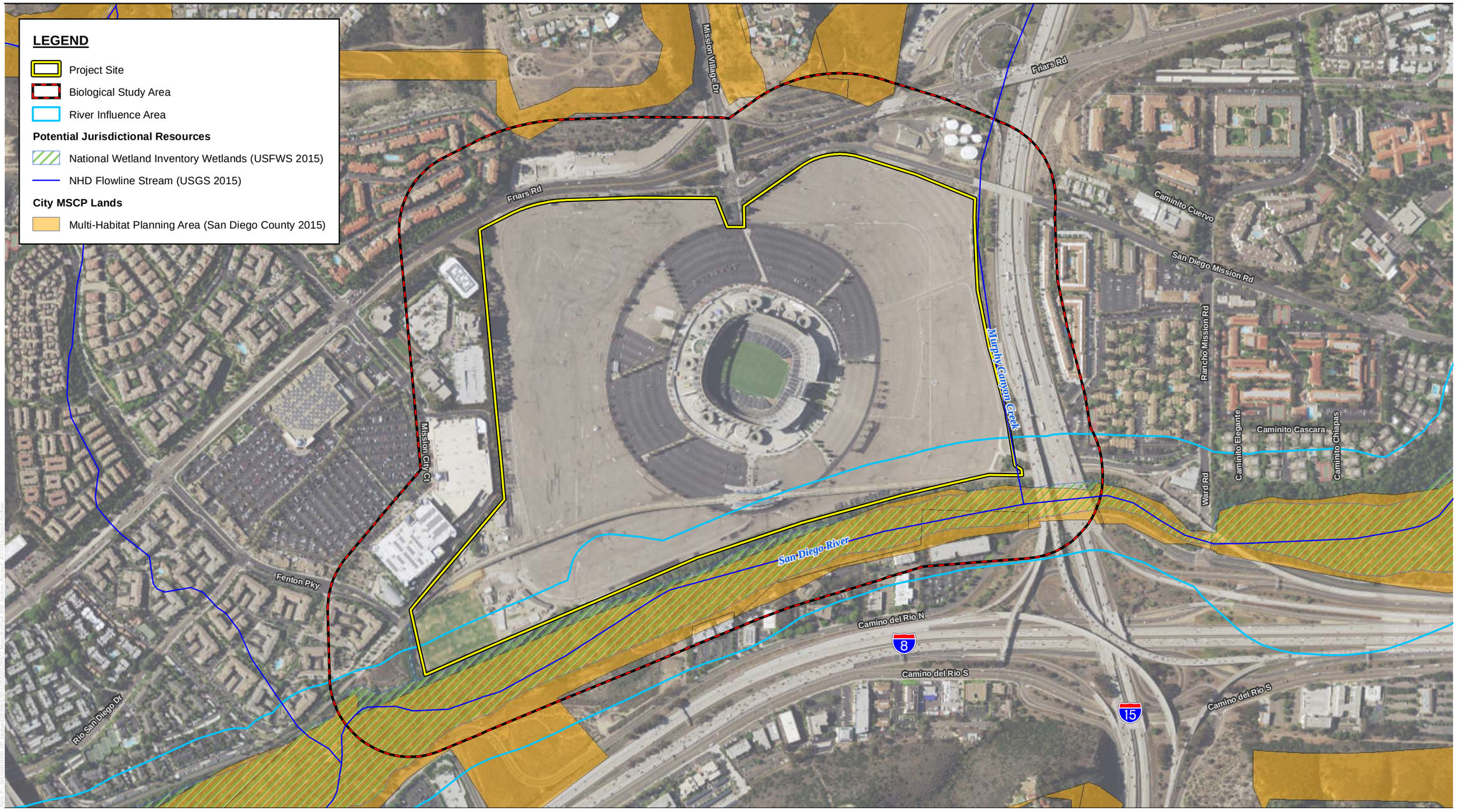

Source: NAIP 2014; USGS 2015; NWI 2015; San Diego County 2015.

600 300 0 600 Feet

Scale: 1 = 7,200; 1 inch = 600 feet

Figure 4
City of San Diego MHPA
and Potential Jurisdictdional Resources

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Table 6
Vegetation Community and Cover Type Acreages

Vegetation Community/ Land Cover Type	MSCP Wetland/Upland Tier Category	Project Site	500-Foot Buffer	BSA
Riparian and Wetlands				
Southern Riparian Woodland	Wetland	0.9	41.5	42.4
Disturbed Wetland	Wetland	--	1.8	1.8
Uplands				
Diegan Coastal Sage Scrub	Tier II	--	2.7	2.7
Other Land Cover Types				
Disturbed Habitat	Tier IV	--	20.0	20.0
Urban/Developed	Tier IV	165.1	90.6	255.7
Totals		**166.0**	**156.6**	**322.6**

Vegetation communities and other land cover types mapped within the BSA are described further below.

4.1.1 Urban/Developed

Urban/developed areas have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that often require irrigation. All areas within the Project site and much of the 500-foot buffer are considered developed (Figure 3). This includes buildings, roads, parking lots, and landscaping of nonnative vegetation.

4.1.2 Disturbed Habitat

Disturbed habitat is characterized by predominantly nonnative species introduced and established through human action. These areas are not typically artificially irrigated but receive water from precipitation or runoff.

Disturbed habitat exists north of the Project site within the 500-foot buffer on road cuts along Friars Road and San Diego Mission Road (Figure 3). The vegetation is dominated by the Cal-IPC (Cal-IPC 2006) invasive plant species fountain grass (*Pennisetum setaceum*) and includes scattered gum trees (*Eucalyptus* sp.) and Brazilian pepper trees (*Schinus terebinthifolius*).

4.1.3 Disturbed Wetland

Disturbed wetlands are areas permanently or periodically inundated by water, which have been significantly modified by human activity.

A disturbed wetland exists outside the eastern edge of the Project site (within the 500-foot buffer) within Murphy Canyon Creek (Figure 3). This area is a ditch with running water located between the Stadium parking and I-15. The northern portion of Murphy Canyon Creek is concrete lined; however, enough sediment has accumulated along the base of the ditch to support some wetland vegetation (see Photo 1 in Appendix A). Minimal vegetation grows in the earthen portion of the channel farther downstream (see Photo 2 in Appendix A). Vegetation along the banks is dominated by Cal-IPC (Cal-IPC 2006) invasive castor bean (*Ricinus communis*) and nonnative white sweetclover (*Melilotus albus*). Additional species present include broom baccharis (*Baccharis sarothroides*), coastal goldenbush (*Isocoma menziesii* var. *vernonioides*), and cattail (*Typha domingensis*) as well as the Cal-IPC (2006) invasive plants fennel (*Foeniculum vulgare*), fountain grass, and smilo grass (*Stipa milacea*).

4.1.4 Diegan Coastal Sage Scrub

Diegan coastal sage scrub is characterized by low, soft-woody subshrubs. Many taxa are facultatively drought-deciduous. This vegetation community is often dominated by California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*) together with laurel sumac (*Malosma laurina),* white sage *(Salvia apiana*), and black sage (*Salvia mellifera*).

Diegan coastal sage scrub exists in two locations within the 500-foot buffer (Figure 3). One area north of Friars Road is dominated by California sagebrush with some broom baccharis and lemonade berry (*Rhus integrifolia*) as well as scattered gum trees and a considerable amount of the Cal-IPC (Cal-IPC 2006) invasive plant, black mustard (*Brassica nigra*). The second area is located south of the trolley platform at the end of Fenton Parkway. This area is dominated by broom baccharis and coastal goldenbush with the associates coyote brush (*Baccharis pilularis*), California sagebrush, and bush sunflower (*Encelia californica*) as well as significant amounts of the invasive species crown daisy (*Glebionis coronaria*), summer mustard (*Hirschfeldia incana*), and red brome (*Bromus madritensis* ssp. *rubens*).

4.1.5 Southern Riparian Woodland

Southern riparian woodlands are moderate-density riparian woodlands dominated by small trees or shrubs with scattered taller riparian trees. Characteristic species include willows (*Salix* spp.), cottonwoods (*Populus* spp.), sycamores (*Platanus racemosa*), broom baccharis, and elderberries (*Sambucus* spp.).

A stand of southern riparian woodland runs along the entire southern boundary of the Project site within the 500-foot buffer (Figure 3). This area is dominated by a mix of native shrubs and trees including black willow (*Salix goodingii*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), Fremont's cottonwood (*Populus fremontii*), and mule fat (*Baccharis salicifolia*). This area also supports several invasive species including giant reed, Brazilian pepper tree, pampas grass (*Cortaderia selloana*), and smilo grass.

A second small stand of southern riparian woodland occurs within the disturbed wetland along Murphy Canyon Creek just east of the Project site (within the 500-foot buffer) (Figure 3). This area supports California sycamore, acacia (*Acacia* sp.), and Mexican fan palm (*Washingtonia robusta*).

4.2 JURISDICTIONAL RESOURCES

During the literature review, AECOM biologists identified USFWS National Wetland Inventory Wetlands and USGS National Hydrology Dataset “blue-line” streams to the south and east of the Project site, within the 500-foot buffer (Figure 4). No formal delineation was conducted during the reconnaissance survey as the Project would avoid impacts to potential jurisdictional features; however, the biologists mapped the extent of each feature along with the associated riparian vegetation within the BSA (Figure 3).

Two features that could potentially fall under CDFW and USACE jurisdiction include the San Diego River to the south of the Project site and Murphy Canyon Creek to the east of the Project site. These features would also qualify as wetland habitat under the City’s Biology Guidelines (City of San Diego 2012a). If these features were directly impacted, a formal delineation would need to be prepared to determine the limits of jurisdiction and applicable permits/certifications obtained from the appropriate agencies (e.g., CWA Section 401 Water Quality Certification, CWA Section 404 Permit, Fish and Game Code Section 1600 Streambed Alteration Agreement, and a mitigation program in compliance with the City’s Biology Guidelines) prior to Project construction.

4.3 FLORA

A total of 81 plant species were recorded incidentally during the reconnaissance survey. Of these, 35 species are native to the region. The majority of plant species were observed within the undeveloped habitats in the 500-foot buffer. Those plant species found within the Project site included ornamental species associated with stadium landscaping. A complete list of plant species recorded during the survey is included as Appendix B.

4.4 WILDLIFE SPECIES

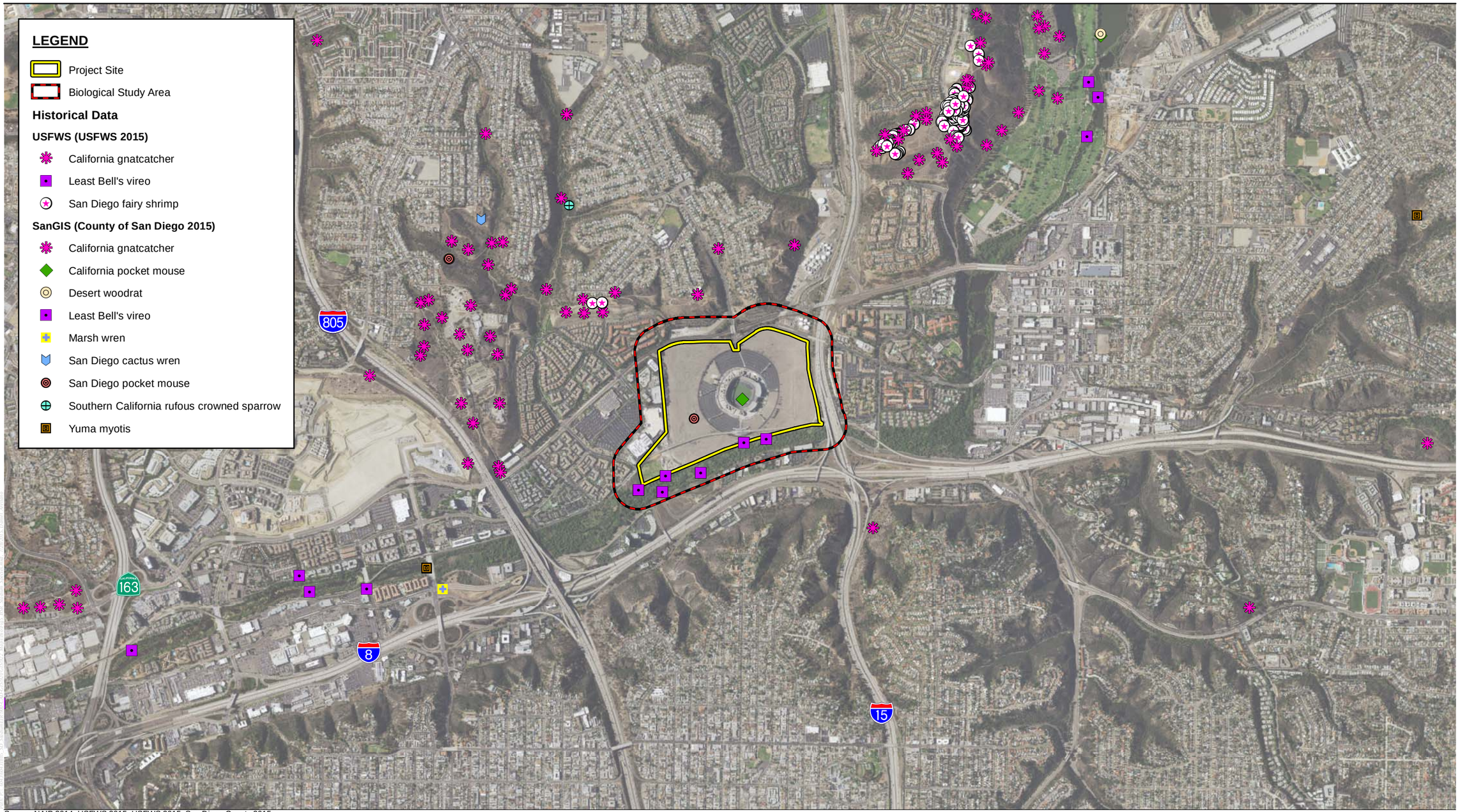
A total of 14 wildlife species were recorded incidentally during the reconnaissance survey. This includes one reptile species, 11 bird species, and two mammal species. The majority of species were detected or observed within the undeveloped habitats in the 500-foot buffer. A complete list of wildlife species detected during the survey is included as Appendix C.

4.5 SPECIAL-STATUS SPECIES

One special-status plant species was observed during the June 2015 field reconnaissance survey: San Diego sagewort (*Artemisia palmeri*; CRPR List 4.2). No special-status wildlife species were observed during the reconnaissance survey. Special-status species considered for potential to occur in the BSA were based on a review of the literature, database searches, and the reconnaissance survey described in Chapter 2.

A total of 70 special-status plant species and 85 special-status wildlife species were considered for their potential to occur within the BSA. Figure 5 illustrates the recent (i.e., within the last 20 years) locations of those species in the SanGIS (County of San Diego 2015) and USFWS GIS (USFWS 2015) databases found within the vicinity of the BSA. The accuracy of mapped historical locations was considered when evaluating the potential for a species to occur within the BSA. For example, some species occurrences were located in developed areas. These occurrences were not accurately mapped and, per attributes within respective databases, the location represents a center point within a polygon that the species occurs.

One special-status plant and 12 special-status wildlife species have moderate or high potential to occur within the BSA based on presence of suitable habitat. These species are discussed briefly below. Species that are not expected or have low potential to occur are not discussed further given the minimal likelihood that they occur on-site. Appendix D provides a summary of special-status species with low potential to occur within the BSA and species evaluated but not expected to occur in the BSA.



Source: NAIP 2014; USFWS 2015; USFWS 2015; San Diego County 2015.

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 5
Historical Species Records

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4.5.1 Potentially Occurring Special-Status Plant Species

San Diego Sagewort

The San Diego sagewort, a CRPR List 4.2 species, is a perennial deciduous shrub typically occurring in creeks and drainages near the coast, at elevations between 45 and 2,700 feet AMSL. This species blooms from February through September and is threatened by development, flood control projects, and nonnative plants (CNPS 2015).

Approximately 20 scattered individuals were incidentally observed throughout the southern riparian woodland within the 500-foot buffer of the BSA along the northern bank of the San Diego River. The sagewort was scattered across the length of the northern bank of the river from the I-15 overpass west to the soccer field (Figure 3). The species was not found within the Project site or incidentally within any other portion of the BSA; however, a focused survey for special-status plants was not conducted. The closest known historical record is an occurrence in 2000 in the Crestridge Ecological Reserve, located approximately 13.3 miles to the east of the Project site (County of San Diego 2015).

San Diego Marsh-elder

San Diego marsh-elder (*Iva hayesiana*), a CRPR List 2B species, is a perennial herb typically occurring in open areas near creeks or intermittent streambeds, at elevations between 30 and 1,500 feet AMSL. This species blooms from April through October and is threatened by waterway channelization, coastal development, vehicles, and nonnative plants (CNPS 2015). This species has moderate potential to occur within the BSA. Suitable habitat for this species occurs within the southern riparian woodland along the banks of the San Diego River and disturbed wetland along Murphy Canyon Creek within the 500-foot buffer of the BSA. The closest known recently (i.e., within the last 20 years) documented location of San Diego marsh elder is a 2010 occurrence near Lake Murray approximately 4.6 miles to the east of the Project site (CDFW 2015).

4.5.2 Potentially Occurring Special-Status Wildlife Species

Western Spadefoot Toad

The western spadefoot (*Spea hammondii*) is a CDFW species of special concern. It occurs in the Central Valley of California and west of the coastal ranges from Point Conception south to northern Baja California. It is found from near sea level to 4,470 feet, but usually below 2,985

feet (Stebbins 2003). Western spadefoot toads occur in a wide range of habitats, including lowlands to foothills, grasslands, open chaparral, coastal sage scrub, and pine-oak woodlands.

The western spadefoot toad has moderate potential to occur within and immediately adjacent to the southern riparian woodland within the San Diego River channel corridor and within the disturbed wetland along Murphy Canyon Creek. Both the concrete-lined and earthen-lined segments of Murphy Canyon Creek have enough sediment deposit to support breeding and dispersal. The closest known documented location of western spadefoot toad occurs approximately 3.9 miles to the east of the Project site (County of San Diego 2015). Several egg masses and larvae were recorded at Mission Trails Regional Park in November 2002 (County of San Diego 2015).

Southwestern Pond Turtle

The southwestern pond turtle (*Emys marmorata*) is a CDFW species of special concern and covered by the City MSCP. It inhabits slow-moving rivers, streams, and ponds of coastal California from the San Francisco Bay area and the central valley south and into northern Baja California. Its elevational distribution is from sea level to 4,690 feet. It most often occurs in smaller pools and permanent or intermittent streams. In intermittent streams, the turtles rely on small pools that persist through the dry season. Emergent marsh vegetation along the water course is needed for cover.

The southwestern pond turtle has moderate potential to occur within and immediately adjacent to the San Diego River channel corridor within the 500-foot buffer south of the Project site. The species also has a moderate potential to occur within the southern end of Murphy Canyon Creek where deeper waters meet with the San Diego River. The closest known documented location of southwestern pond turtle occurs approximately 4.6 miles to the east of the Project site in Lake Murray, recorded in August 2003 (County of San Diego 2015).

Two-Striped Garter Snake

Two-striped garter snake (*Thamnophis hammondii*) is a CDFW species of special concern. It is locally common in aquatic habitats from coastal central California to northwestern Baja California from sea level to 8,040 feet. It is widespread and locally common in creeks throughout western and central San Diego County. This garter snake occurs in aquatic habitats, preferring rocky streams with protected pools, cattle ponds, marshes, vernal pools, and other shallow bodies of water lacking large aquatic predators.

The two-striped garter snake has high potential to occur within and immediately adjacent to the southern riparian woodland and disturbed wetland in the San Diego River channel corridor and Murphy Canyon Creek within the 500-foot buffer. The closest known recently (i.e., within the last 20 years) documented location of two-striped garter snake is a 2006 occurrence that occurs approximately 4.2 miles to the east of the Project site near Lake Murray (County of San Diego 2015).

Southwestern Willow Flycatcher

The southwestern willow flycatcher (*Empidonax traillii extimus*), a subspecies of willow flycatcher (*Empidonax trailli*), is listed as federally endangered (USFWS 1995). The subspecies was also listed as endangered by the State of California in 1990 and is covered by the City MSCP. The southwestern willow flycatcher is a summer breeding resident in riparian habitats in southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and northwestern Mexico (USFWS 1995). In San Diego County, only two substantial breeding populations are known to remain along the Santa Margarita River and the upper San Luis Rey River. The southwestern willow flycatcher is restricted to dense riparian woodlands of willow, cottonwood, and other deciduous shrubs and trees. In general, the riparian habitat of this species tends to be rare, isolated, small, and/or in linear patches, separated by vast expanses of arid lands. Egg laying by the endangered southwestern willow flycatcher occurs in San Diego County from the end of May through the end of June.

San Diego River and Murphy Canyon Creek have a high potential to support migrant southwestern willow flycatchers due to the presence of dense stands of willow and cottonwood. However, the species has moderate potential to breed within the riparian habitat of the San Diego River channel corridor within the 500-foot buffer south of the Project site because although habitat is present this species has not been documented to breed in this portion of the San Diego River since prior to 1997 (Unitt 2004). The closest known breeding location occurs in the upper Sweetwater Reservoir (Unitt 2004). The closest known documented location of southwestern willow flycatcher occurs approximately 2 miles to the southwest of the Project site in the San Diego River, recorded in June 2009; however, nesting was not confirmed (USFWS 2015). Additionally, willow flycatchers detected during early May through late June in Southern California may not be breeding on-site (Sogge et al. 2010); willow flycatchers identified during this time period could be migrants that are not resident.

Least Bell's Vireo

The least Bell's vireo (*Vireo bellii pusillus*) was federally listed as endangered in 1986 and state listed as endangered in 1980. This species is also covered by the City MSCP. The least Bell's vireo is the westernmost subspecies of the Bell's vireo and breeds entirely within southern California and Baja, California. The least Bell's vireo breeding season extends from March through September. During the breeding season, the least Bell's vireo is restricted to riparian woodland and riparian scrub. In San Diego County, it occurs mainly in the coastal lowlands, rarely up to 3,000 feet in elevation. Territory size ranges from 0.5 acre to 7.5 acres and there is evidence of high site fidelity among adults (Kus 2002). Early to mid-successional riparian habitat is typically used for nesting by this vireo because it supports the dense shrub cover required for nest concealment as well as a structurally diverse canopy for foraging (Kus 2002).

This species has high potential to breed and forage within the southern riparian woodland in the San Diego River channel corridor and Murphy Canyon Creek within the 500-foot buffer of the BSA. The closest known records of least Bell's vireo occur just south of the Project site in the San Diego River within the 500-foot buffer of the BSA and were recorded in July 1998 and August 1997 (Figure 5) (CDFW 2015).

White-tailed Kite

The white-tailed kite (*Elanus leucurus*) is a fully protected species by CDFW. White-tailed kites are resident in southern Texas and California; at scattered locations in Washington, Oregon, and Florida; and from Mexico to South America. In southern California, kites are widespread except in the Anza-Borrego Desert (Unitt 2004). While this species is commonly observed hunting within savanna, open woodlands, marshes, grasslands, and agricultural fields, they are known to almost exclusively nest in association with watercourses. Nests are typically placed in the crowns of oaks or other densely foliaged trees. In San Diego County, the nesting season lasts from February through fledging in June (Unitt 2004).

The white-tailed kite has high potential to forage and breed within the riparian habitat found within the BSA. Favored nesting habitats of this species include any larger trees or woodlands within the 500-foot buffer south of the Project site. The closest known documented location is a 2013 occurrence along the San Diego River approximately 0.6 mile to the east of the Project site (eBird 2015).

Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is covered by the City MSCP. The species is a breeding resident throughout most of the wooded portion of California. In San Diego County, the Cooper's hawk occurs as a year-long resident and a winter migrant. Cooper's hawks nest primarily in oak woodlands but occasionally in willows or eucalyptus. The species prefers dense stands of live oak, riparian deciduous forests, or other forest habitat near water. The species usually nests and forages near open water or riparian vegetation. The Cooper's hawk will catch small birds, especially young during nesting season, and small mammals. They will also forage on reptiles and amphibians.

The Cooper's hawk has high potential to forage and breed throughout the BSA in any habitat. Suitable nesting habitats for this species include any larger trees or woodlands within or adjacent to the BSA. The closest known documented location of Cooper's hawk occurs approximately 1.2 miles to the northeast of the Project site near the San Diego River, recorded in April 2000 (County of San Diego 2015).

Clark's Marsh Wren

The Clark's marsh wren (*Cistothorus palustris clarkae*) is a CDFW species of special concern. Clark's marsh wren is a year-round resident that inhabits freshwater and brackish marshes along, or mainly along, the coast. It is joined by migratory marsh wrens during the winter season. This species is known to have a long breeding season in San Diego County.

This species has high potential to occur in marsh habitats within the San Diego River channel corridor and Murphy Canyon Creek. The closest known documented location occurs approximately 1 mile to the southwest of the Project site in the San Diego River, recorded in April 1997 (County of San Diego 2015).

Western Bluebird

The western bluebird (*Sialia mexicana*) is covered by the City MSCP. This species is a common resident of San Diego County's foothills and meadows, especially where meadows lie among groves of oak or pine (Unitt 2004). The western bluebird is a cavity nester and competes heavily with many other species for holes in trees. Although there is competition for nesting sites for the western bluebird, this species appears to be expanding its range and colonizing urban areas with mature trees and large lawns (Unitt 2004). Insects are the primary food source during the warmer months, and during the winter season this species favors berries and is especially attracted to

mistletoe. The breeding distribution of western bluebirds in San Diego County is largely associated with montane coniferous and oak woodlands. Where these habitats occur (mainly the mountains of San Diego County), this species is relatively abundant during the breeding season. Approaching the coast, the western bluebird becomes less abundant and more localized (Unitt 2004). Nesting of this species is primarily in early April through the end of June.

This species has high potential to nest in trees found within all habitats throughout the BSA. This species has been documented in the BSA as recently as 2008 and is documented regularly along the San Diego River (eBird 2015).

Yellow Warbler

The yellow warbler (*Setophaga petechia* ssp. *brewster*) is a CDFW species of special concern. The yellow warbler breeds from northern Alaska and Canada southward to the middle United States and in the western United States southward into Mexico. This warbler winters in Mexico, and Central and South America. Nest building may occur as early as April in San Diego County, with fledglings reaching independence by August (Unitt 2004). This species occurs most commonly in riparian woodlands dominated by willows. The yellow warbler is frequently parasitized by the brown-headed cowbird (*Molothrus ater*).

This species has a high potential to breed and forage within the southern riparian woodland along the San Diego River and Murphy Canyon Creek, or use the BSA for stopover habitat during migration movements. The closest known documented location occurs approximately 2.4 miles to the northeast of the Project site in the San Diego River, recorded in June 2009 (County of San Diego 2015).

Yellow-breasted Chat

The yellow-breasted chat (*Icteria virens*) is a CDFW species of special concern. This species breeds across the central and eastern United States and southern Canada from South Dakota to New Hampshire and southward to eastern Texas and northern Florida. It also occurs in scattered regions across the western United States from southern Canada to very northern Mexico. In San Diego County, nest building typically occurs in May and fledging is completed by August (Unitt 2004). In California, chats require dense riparian thickets associated with watercourses, saturated soils, or standing water (lakes or ponds). They typically occur in riparian woodland/scrub with dense undergrowth. In San Diego County, this species occurs in the coastal lowlands and is strongly concentrated in the northwest portion of the county (i.e., Santa Margarita River and San

Luis Rey River) (Unitt 2004). Comparable to other breeding riparian passerines addressed herein, the chat is frequently parasitized by the brown-headed cowbird.

The yellow-breasted chat has high potential to nest within the riparian habitats of the San Diego River channel corridor and Murphy Canyon Creek. The closest known documented location of this species occurs approximately 2.4 miles to the northeast of the Project site in the San Diego River, recorded in June 2009 (County of San Diego 2015).

Western Red Bat

The western red bat (*Lasiurus blossevillii*) is a CDFW species of special concern. It is locally common in some areas of California, occurring from Shasta County to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. The winter range includes western lowlands and coastal regions south of San Francisco Bay. There is migration between summer and winter ranges, and migrants may be found outside the normal range. Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests. This species roosts in the foliage of large shrubs and trees, usually sheltering on the underside of overhanging leaves. Foraging has been noted in habitats such as mature orchards, oak woodland, low-elevation conifer forest, along riparian corridors, among nonnative trees in urban and rural residential areas, and also near strong lights that attract flying insects. In addition, this species may forage in habitats and agricultural areas adjacent to streams and rivers that do not provide roosting habitat.

This species has high potential to roost in the riparian trees associated with the San Diego River and Murphy Canyon Creek, and a low potential to roost in the ornamental trees throughout the existing stadium parking lot, year-round. The closest known recently (i.e., within the last 20 years) documented location of western red bat is a 2006 occurrence that is located in the San Diego River approximately 3.7 miles to the northeast of the Project site (County of San Diego 2015).

4.6 WILDLIFE MOVEMENT

Habitat connectivity is essential for the persistence of healthy and genetically diverse animal communities (Crooks and Sanjayan 2006). Wildlife corridors or linkages are linear landscape features that allow for species movement over time between two areas of habitat that would otherwise be disconnected (Beier and Noss 1998; Beier et al. 2008; Lidicker and Peterson 1999). Regional corridors (or landscape linkages) link two or more large areas of natural open space, and local corridors (or dispersal corridors) allow resident animals to access critical resources (food, water, and cover) in areas that might otherwise be isolated. At a minimum, corridors

promote local colonization or recolonization of distinct habitats, potentially increase genetic variability within and between populations, and maintain appropriate predator/prey relationships. Wildlife movement activities typically fall into one of three movement categories: local and regional dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions), regional seasonal migration, and local movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover).

Human encroachment and other disturbances (e.g., light, loud noises, domestic animals) associated with developed areas that have caused habitat fragmentation may have a negative effect on corridors (Schweiger et al. 2000). Therefore, wildlife corridors may function at various levels depending upon these factors and the species.

The level of connectivity needed to maintain a population of a particular species will vary with the demography of the population, including population size, survival and birth rates, and genetic factors such as the level of inbreeding and genetic variance (Rosenberg et al. 1997). Areas not considered as functional wildlife dispersal corridors or linkages are typically obstructed or isolated by concentrated development and heavily traveled roads, known as "chokepoints." One of the worst scenarios for dispersing wildlife occurs when a large block of habitat leads animals into "cul-de-sacs" of habitat surrounded by development. These habitat cul-de-sacs frequently result in adverse human/animal interface.

The San Diego River corridor that runs along the southern portion of the BSA functions as a portion of a landscape linkage providing connection of coastal and inland habitats (Penrod et.al. 2001). The City of San Diego recognized the importance of this riparian corridor as a landscape linkage for amphibians, reptiles, birds, and small- and medium-sized mammals when delineating the MHPA for the City's MSCP. In spite of the urbanized surrounding area, the San Diego River riparian habitat and adjacent Diegan coastal sage scrub are areas of relatively high species diversity and abundance and provide a regional corridor between Mission Trails Regional Park and Mission Bay Park. Concentrated development and heavily traveled roads surrounding the San Diego River corridor limit terrestrial species from using this corridor to disperse to adjacent canyons. However, this regional corridor supports avian or bat species that are capable of flying over barriers to adjacent habitat.

Murphy Canyon Creek is a maintained drainage feature that provides some wetland and riparian vegetation along the banks, but very little vegetation along the creek bed. Upstream of the BSA, near the KMEP MVT, the creek becomes a covered concrete-lined channel for approximately 0.5 mile north before opening up again to an earthen channel supporting dense nonnative ornamentals and riparian scrub species. Further upstream, the creek consists of intermittent

above-ground and below-ground segments that are both concrete-lined and earthen supporting riparian scrub and woodland species.

Murphy Canyon Creek functions primarily as "stepping stone" for avian and bat species to travel between the San Diego River MHPA and larger fragments of MHPA to the northwest of the junction of Murphy Canyon Creek and Friars Road. In addition, avian and bat species may use this "stepping stone" habitat to reach larger fragments of MHPA habitat east of I-15 that ultimately lead to Mission Trails Regional Park and undeveloped areas to the north. Similar to the San Diego River, concentrated development and heavily traveled roads surrounding the Murphy Canyon Creek corridor limit terrestrial species from using this corridor to disperse to adjacent canyons. The importance of Murphy Canyon Creek on a regional scale is less in magnitude than the San Diego River because Murphy Canyon Creek does not directly connect the San Diego River with other open space habitat and essentially dead ends at Aero Drive and I-15.

To summarize, the presence of the San Diego River and Murphy Canyon Creek as a wildlife corridor is expected to benefit primarily small- and medium-sized species despite the density of surrounding development. Various wildlife species are likely to reside in and utilize riparian habitat associated with the San Diego River and Murphy Canyon Creek for normal home range movements (e.g., foraging, natal dispersal, and home range expansion) to survive and reproduce. These include reptiles, amphibians, and small- and medium-sized mammals, including those special-status species with a moderate to high potential to occur as discussed in Sections 4.4 and 4.5. Common medium-sized mammals known or expected to use Murphy Canyon Creek and the San Diego River include raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and coyote (*Canis latrans*). Mammals with large home range requirements such as mule deer (*Odocoileus hemionus*) or mountain lion (*Puma concolor*) are not expected to use this area due to the narrow width of the corridor and surrounding development.

The San Diego River and Murphy Canyon Creek are located along the Pacific Flyway, a major north-south migration route for birds that travel between North and South America. In southern California, this migratory pathway spans a broad front, and migrating birds are not uniformly distributed across the landscape (Bloom 1985). The San Diego River and Murphy Canyon Creek likely serve as stopover habitat or stepping stone corridors for this broad movement of migrating birds. Individuals stopping over in the BSA may winter, forage, or nest in these riparian areas or continue to migrate through the landscape.

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CHAPTER 5
IMPACTS

This chapter discusses potential direct impacts, indirect impacts, and cumulative impacts associated with the Project relative to the biological resources. Biological resources may be either directly or indirectly impacted by activities associated with construction and operation of the Project. Furthermore, direct and indirect impacts may be either permanent or temporary in nature. These various types of impacts are defined per the City's CEQA Significance Determination Thresholds guidance document (City of San Diego 2011) and included below:

> Direct: A direct impact is a physical change in the environment which is caused by and immediately related to the project. Direct impacts are caused by a project and occur at the same time and place as the project.
>
> Indirect: An indirect impact is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct impact in turn causes another physical change in the environment, then the secondary changes is an indirect impact. An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable
>
> Permanent: All impacts that result in the irreversible removal or loss of biological resources are considered permanent.
>
> Temporary: Any impact that will last for only a limited amount of time and is considered to have reversible effects on biological resources can be viewed as temporary. This includes all impacts related to construction activities.
>
> Cumulative Impacts: Cumulative impacts are potential regional effects of a project and how a project, in combination with other projects and conditions of a region, may affect an ecosystem or one of its components beyond the project limits and on a regional scale.

The City's Biology Guidelines require that the impact discussion include an analysis of direct impacts, indirect impacts, and cumulative impacts (City of San Diego 2012a). The significance of both direct and indirect impacts is determined based on the City's significance thresholds (City of San Diego 2011). These following guidelines were used to determine significance of potential direct, indirect, and cumulative impacts associated with the Project.

1. A substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in the MSCP or other local or regional plans, policies, or regulations, or by CDFW or USFWS.
2. A substantial adverse impact on any Tier I Habitats, Tier II Habitats, Tier IIIA Habitats, or Tier IIIB Habitats as identified in the Biology Guidelines of the Land Development Code or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS.
3. A substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pool, riparian, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, including linkages identified in the MSCP Plan, or impede the use of native wildlife nursery sites.
5. A conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan, either within the MSCP plan area or in the surrounding region.
6. Introducing land use within an area adjacent to the MHPA that would result in adverse edge effects.
7. A conflict with any local policies or ordinances protecting biological resources.
8. An introduction of invasive species of plants into a natural open space area.

5.1 DIRECT IMPACTS

The following direct impact analysis is based on the Project description provided in Chapter 1. The Project proposes construction of facilities outside the River Influence Area of the City of San Diego's San Diego River Master Plan (Figures 3 and 4). The River Influence Area is defined as areas within 200 feet of the River Corridor Area. The River Corridor Area is defined as all areas within 35 feet of FEMA 100-year floodway. No new construction or construction staging would occur within 235 feet of the 100-year floodway for the San Diego River. Therefore, direct impacts are only anticipated to occur within the Project site, excluding the River Influence Area.

No parking lot improvements associated with the Project would be made within the River Corridor and River Influence Area. Reductions or implementation of other recommendations identified in the City of San Diego's San Diego River Park Master Plan are not a part of this Project and consequently are not analyzed in this direct impact analysis. The existing parking would remain in place within the River Influence Area and its current use continued until implementation of the City of San Diego's San Diego River Park Master Plan.

Direct impacts from the Project would include injury, death, and/or harassment of avian species protected under the MBTA; avian collisions with reflective surfaces on the new stadium; or avian collisions with PV solar panels used in the parking lot. Bat species are not anticipated to be directly impacted by the Project as their preferred roosting habitat occurs throughout the riparian trees within the San Diego River and Murphy Canyon Creek.

5.1.1 Vegetation Communities and Cover Types

The Project occurs entirely within urban/developed habitat (i.e., existing stadium facility and parking lot, excluding the River Influence Area). Therefore, no significant direct impacts are expected to occur to Tier I, II, IIIA, and IIIB upland habitats or wetland habitats.

5.1.2 Jurisdictional Resources

The Project occurs entirely within urban/developed habitat (i.e., existing stadium facility and parking lot, excluding the River Influence Area). Therefore, no significant direct impacts would occur to jurisdictional waters and wetlands in Murphy Canyon Creek and the San Diego River adjacent to the Project. If these features were to be directly impacted, a formal delineation would need to be prepared to determine the limits of jurisdiction and applicable permits/certifications obtained from the appropriate agencies (e.g., CWA Section 401 Water Quality Certification, CWA Section 404 Permit, Fish and Game Code Section 1600 Streambed Alteration Agreement, and a mitigation program in compliance with the City's Biology Guidelines) prior to Project construction.

5.1.3 Special-Status Species

The Project occurs entirely within urban/developed habitat (i.e., existing stadium facility and parking lot, excluding the River Influence Area). Ornamental trees to be removed during Project construction have the potential to support nesting avian species, including common species protected under the MBTA observed during the field reconnaissance survey (see Appendix C). Therefore, direct impacts to special-status species on the Project site would be limited to avian

species protected under the MBTA that may nest in the ornamental trees present within the parking lot. No listed avian species are expected to nest in the ornamental trees present within the parking lot.

The final design of the new stadium may include windows and glass doors and may include use of solar photovoltaic (PV) energy. The PV system would serve the dual purpose of energy efficiency and a parking shade canopy. Up to approximately 5 acres of PV panels are anticipated to be located within the limits of the parking lot in the northwest area of the Project site. The exact location of the panels has not been determined, but the panels would be situated on the portion of the site furthest away from both Murphy Canyon Creek and the San Diego River.

Recent studies have demonstrated that utility-scale solar developments represent a source of fatality for birds (CEC 2013, 2014, Kagan et al. 2014, WEST 2014, Walston et al. 2015). Avian fatalities at PV solar sites may result from direct collision with project structures including PV panels (Walston et al. 2015). Therefore, the Project could result in direct impacts to special-status avian species resulting from collisions with PV panels.

There are relatively few PV solar sites with publicly available data disclosing the post-construction impacts of the solar sites on birds. The most recently available bird fatality data available to the public was associated with three PV solar energy facilities located in California: California Valley Solar Ranch (4,700 acre site), Desert Sunlight (3,900 acre site), and Topaz Solar Farm (3,500 acre site) (WEST 2014, Walston et al. 2015). Passerines have comprised the majority of avian fatalities at these three sites (WEST 2014, Walston et al. 2015). The cause of fatalities is not always clear and it is often unknown if the cause of death is from impact trauma (i.e., collision) (WEST 2014, Walston et al. 2015 Kagan et al. 2014).

Waterbird fatalities have also been recorded at these three large solar energy sites. It has been hypothesized that these species confuse the arrays for bodies of water (the lake effect hypothesis) (WEST 2014, Walston et al. 2015 Kagan et al. 2014). Most evidence of this "lake effect" phenomenon is anecdotal (CEC 2014) and little research exists to explain the actual cause of mortalities. Some studies have shown that glare intensity or reflectivity of PV modules are lower than that of water and similar to asphalt (Dudek 2014), suggesting that bird mortality associated with solar panels is not a result of attraction to reflective surfaces. Waterbirds have represented a large proportion (42%) of mortalities at Desert Sunlight but comprised a small percentage (less than 2%) of the mortalities at California Valley Solar Ranch and Topaz Solar Farm (WEST 2014, Walston et al. 2015). The relatively small proportion of waterbird mortality in comparison to other bird species indicates that perhaps bird mortality associated with solar panels may be explained by something other than the "lake effect".

Another hypothesis to explain bird mortality in PV facilities proposes that polarized light pollution caused by solar PV panels may alter normal foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels (Horvath et al. 2009; Horvath et al. 2010). It has been further speculated that the glare and polarized light emitted by solar projects may also attract insects, which, in turn, could attract foraging birds (WEST 2014, Walston et al. 2015).

To date, no empirical research has been conducted to evaluate the lake effect or polarized light hypothesis or the attraction of waterbirds or migrating birds to PV facilities (WEST 2014, Walston et al. 2015). Studies have also not been conducted for small-scale PV solar projects such as the approximate 5 acres proposed for the Project. However, the need for quantitative data pertaining to bird mortality and solar energy is widely recognized. In recent years, the USFWS has developed monitoring methodologies in an effort to collect data that will inform future strategies for implementing solar energy while minimizing bird mortality (USFWS 2011).

Avian collisions and mortality associated with solar PV panels would be considered a significant project impact even though the direct impact from bird strikes could be limited. As demonstrated above, bird fatalities in association with solar PV have been documented primarily at large scale sites (greater than 3,000 acres) located in non-urban areas. Given the urban environment and relatively small acreage proposed (45 acres) for the Project, bird collision and mortality associated with Project-related PV panels are anticipated at a relatively low frequency. Furthermore, impacts to special status birds would be anticipated and would be considered a significant impact. However, PV panels would be situated in the northwest area of the Project site, away from vegetation or habitat familiar and attractive to birds that would result in disorienting reflective images (Cusa et al. 2015, Sheppard 2011).

While the direct Project impacts to avian species from collisions with PV panels may be low in comparison to large scale solar energy facilities, potentially occurring avian species, including special-status species, could collide with PV panels. Not enough data exists, even with data collected using USFWS guidance (2011), to conclude that the impact is not significant. Due to limited data on the causal relationship between avian fatalities and PV solar facilities, no mitigation measures exist to ensure avoidance of this impact. BIO-7 and BIO-8 provide measures that would aim to minimize Project impacts to the extent possible and monitor potential impacts. Without data to support the efficacy of these measures, conclusions made regarding their success would be premature. Thus, impacts to potentially occurring avian species, including special-status species, associated with collisions with PV panels would be considered significant and unmitigated.

Nationwide, millions of birds are killed annually as a result of colliding with buildings (Loss et al. 2014). The numbers of fatalities can vary among species due to population abundance and species behavior (Loss et al. 2014). Buildings covered with a large percentage of windows or glass have an increased risk for avian collisions because birds cannot see the glass or it reflects adjacent habitat and they attempt to fly through (Cusa et al. 2015). Other reflective surfaces (e.g., metals or reflective paint) can have the same effect as glass by reflecting the sky, clouds, or nearby habitat familiar and attractive to birds (Sheppard 2011). Direct impacts to potentially occurring special-status bird species from collisions with the new stadium would be considered significant.

Potential construction-related direct impacts to special-status avian and bat species would be less than significant through implementation of BIO-1, BIO-9 through BIO-13, and BIO-18 described in Chapter 6. Operation-related impacts from collisions with the new stadium and associated PV panels could occur to special-status avian species and avian species protected under the MBTA. These direct impacts would be considered significant. Implementation of design measure BIO-6 through BIO-8 could minimize the impacts, but not to a level below significant.

5.1.4 Wildlife Movement

Direct impacts are confined entirely within urban/developed habitat (i.e., existing stadium facility and parking lot, excluding the River Influence Area). Therefore, no significant direct impacts are expected to occur to wildlife corridors.

5.1.5 Multi-Habitat Planning Area

Direct impacts are confined entirely within urban/developed habitat (i.e., existing stadium facility and parking lot, excluding the River Influence Area) and are not located within the MHPA north of the Project site or the MHPA associated with the San Diego River. Therefore, no significant direct impacts are expected to occur within the MHPA.

5.2 INDIRECT IMPACTS

Similar to the direct impact analysis, the following indirect impact analysis is based on the Project description provided in Chapter 1. The Project proposes construction of facilities outside the River Influence Area of the City of San Diego's San Diego River Master Plan. The River Influence Area is defined as areas within 200 feet of the River Corridor Area. The River Corridor Area is defined as all areas within 35 feet of FEMA 100-year floodway. No new construction or

construction staging would occur within 235 feet of the 100-year floodway for the San Diego River (Figure 3).

No parking lot improvements associated with the Project would be made specifically within River Corridor and River Influence Area. Reductions or implementation of other recommendations identified in the City of San Diego's San Diego River Park Master Plan are not a part of this Project and consequently are not analyzed in this indirect impact analysis. The existing parking would remain in place within the River Influence Area and used as it is currently for Qualcomm Stadium events until implementation of the City of San Diego's San Diego River Park Master Plan.

Temporary indirect impacts would occur during construction because these indirect impacts would cease when construction is complete. Permanent indirect impacts would occur as a result of operation activities. The extent of indirect impacts varies by species and biological resource. Potential indirect impacts could include following.

Noise: Elevated ambient noise levels that could result from Project implementation (construction and operation), could impact species that rely on sound to communicate (e.g., birds). Elevated ambient noise levels have potential to disturb species and/or cause direct habitat avoidance. The impact of noise on wildlife differs from species to species, and is dependent on the source of the noise (e.g., vehicle traffic versus blasting) and the decibel level, duration, and timing.

Changes in Hydrology: Changes in hydrology, runoff, and sedimentation resulting from the Project could indirectly impact species dependent on surface water species. Increased runoff into habitat could also result in increased erosion and rates of scouring, which could 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 nonnatives) that would competitively displace the special-status species.

Exotic and Predator Species: The introduction of exotic plant and animal species to Murphy Canyon Creek or the San Diego River would be considered an indirect impact as such species have few natural predators or other ecological controls on their population sizes, and they often thrive in disturbed habitats. Exotic plant species have few natural ecological controls on their population sizes, and they often thrive in disturbed habitats. Exotic plant and wildlife species may aggressively outcompete native species.

Lighting: Artificial night lighting associated with the Project could impact habitat value for some species, particularly for nocturnal species, through potential modification of predation rates, obscuring of lunar cycles, and/or causing direct habitat avoidance. Nighttime lighting could also disturb diurnal species roosting in adjacent habitat.

Fugitive Dust: Fugitive dust generated during Project construction can adversely impact plants by coating the surfaces of the leaves and reducing the rates of metabolic processes, such as photosynthesis and respiration. Suboptimal conditions that stress the processes necessary for normal plant growth would degrade the quality of riparian vegetation communities adjacent to the Project site.

Unauthorized Access: Project construction and operation can provide entrance points to habitats that otherwise would not have been accessible to humans. Disturbance from human activities (i.e., trampling of species from recreational activity) and trash left by human activities can adversely impact species and degrade habitat.

5.2.1 Vegetation Communities and Cover Types

Indirect impacts to riparian vegetation communities in Murphy Canyon Creek and the San Diego River adjacent to the site could include the following:

Exotic Species: Construction activities have the potential to introduce nonnative plants to adjacent habitat by carrying seeds from outside sources on vehicles, people, and equipment. Exotic plant species may aggressively outcompete native species and degrade the quality of a vegetation community by replacing the native habitat. For example, introduction of nonnative species with rapid propagation rates such as giant reed and castor bean into the San Diego River or Murphy Canyon Creek could be detrimental in that these species would "choke off" the native riparian scrub.

Changes in Hydrology: Grading and other activities associated with construction (e.g., transport of 490,000 cubic yards of fill onto the Project) have the potential to create sedimentation and erosion into adjacent riparian vegetation. Sedimentation and erosion could potentially change the structure of the existing river channel and degrade the quality of adjacent riparian vegetation communities. This would be considered an indirect Project impact.

In addition, stormwater contaminant runoff during Project construction and operation could potentially carry a variety of pollutants into the riparian vegetation within the San Diego

River. This would also be considered a potential indirect project impact. This impact would be minimized however as a result of Project design features and construction minimization measures including BMPs and a SWPPP. Thus, stormwater runoff and pollutant load contributions to the San Diego River would be reduced (AECOM 2015b).

Fugitive Dust: Construction fugitive dust can adversely impact plants by reducing the rates of metabolic processes, such as photosynthesis and respiration, and degrade the quality of adjacent riparian vegetation communities. Indirect impacts to vegetation communities could also result from construction-related airborne dust that could result from the transport of fill dirt for the new stadium construction and during demolition of Qualcomm Stadium.

Unauthorized Access: Unauthorized access outside of the parking lot by construction workers or by people attending events at the new stadium may cause damage through trampling of plant species within adjacent vegetation communities.

Currently, the operation of the existing stadium results in edge effects such as the introduction of exotic species, changes in hydrology, and unauthorized access to adjacent natural areas. The project will require implementation of the MSCP Land Use Adjacency guidelines provided as BIO-1 through BIO-3, BIO-5, BIO-9 through BIO-12, and BIO-14 through BIO-16 in Chapter 6. Compliance with these guidelines will ensure that indirect impacts to riparian vegetation communities from the Project would be less than significant.

5.2.2 Jurisdictional Resources

As described in Section 5.2.1 for Vegetation Communities and Cover Types, jurisdictional waters and wetlands in Murphy Canyon Creek and the San Diego River are subject to edge effects associated with the operation of Qualcomm Stadium. Potential indirect impacts to jurisdictional resources could include the following:

Exotic Species: Construction activities have the potential to introduce nonnative plants to adjacent jurisdictional waters and wetlands by carrying seeds from outside sources on vehicles, people, and equipment.

Changes in Hydrology: Grading and other activities associated with construction have the potential to create sedimentation and erosion into adjacent jurisdictional resources. Sedimentation and erosion could potentially change the structure of the existing river channel and degrade the quality of adjacent jurisdictional waters and wetlands. Currently, the majority of site runoff is conveyed to three outlets that discharge directly to the San Diego River (AECOM

2015a). During moderate storm events, water overtops the berm between Murphy Canyon Creek and the Stadium parking lot and floods the existing parking area. The resulting sheet flow empties directly into the San Diego River. Stormwater contaminant runoff during construction and operation has the potential to carry a variety of pollutants into the riparian vegetation within the San Diego River; however, stormwater runoff would be reduced from current levels as a result of Project design features and construction minimization measures, which would decrease pollutant load contributions to the San Diego River (AECOM 2015b).

The Murphy Canyon Creek drainage along the Project site's eastern boundary causes on-site flooding and sheet flow) during storms above the 10-year recurrence interval (AECOM 2015a). Flooding is also anticipated from the 100-year floodplain of Murphy Canyon Creek to the north. Therefore, the Project would require protective measures to mitigate on-site flooding from the Murphy Canyon Creek overflow and floodplain. Flood protection measures (yet to be designed) would occur within the Project site boundary and would not disturb Murphy Canyon Creek.

Regardless of the Project final design, the Project would continue to allow water to overtop the western berm along Murphy Canyon Creek. This would ensure the flow rate of water within Murphy Canyon Creek remains unchanged thereby avoiding erosion and disturbance of existing vegetation. The protection measures (yet to be designed) would direct the flooding water around the stadium where the water would flow out onto the southeast corner of the parking lot as it currently does during heavy or moderate storm events. This water would be captured by the existing inlets and conveyed via the underground storm drain system. Therefore, the Project would not result in indirect impacts to the existing hydrology of Murphy Canyon Creek or the San Diego River.

> *Fugitive Dust:* Construction fugitive dust can adversely impact plants by reducing the rates of metabolic processes, such as photosynthesis and respiration, and degrade the quality of adjacent jurisdictional waters and wetlands. Airborne dust may result while bringing in fill dirt for the new stadium construction and during demolition of Qualcomm Stadium.

Unauthorized Access: Unauthorized access outside of the parking lot by construction workers or by people attending events at the new stadium may cause damage through trampling of plant species within adjacent jurisdictional waters and wetlands.

Because jurisdictional resources associated with Murphy Canyon Creek and the San Diego River are currently subject to the introduction of exotic species, changes in hydrology, and unauthorized access, no new indirect impacts are anticipated as a result of the Project. Upon

implementation of BIO-1 through BIO-3, BIO-5, BIO-9 through BIO-12, and BIO-14 through BIO-16 described in Chapter 6, indirect impacts to jurisdictional resources would be less than significant.

5.2.3 Special-Status Species

Indirect impacts from the introduction of exotic species, changes in hydrology, fugitive dust, or unauthorized access described previously in Sections 5.2.1 and 5.2.2 and also would be detrimental to special-status species that reside in vegetation communities and utilize jurisdictional areas. As described in Section 4.5 Special-Status Species, species with a moderate or high likelihood for occurrence in the Project vicinity include: San Diego sagewort, white-tailed kite, Cooper's hawk, southwestern willow flycatcher, least Bell's vireo, Clark's marsh wren, western bluebird, yellow warbler, yellow-breasted chat, and western red bat. Additional indirect impacts to special-species could include:

Noise: Noise may indirectly impact special-status avian species through disruption of breeding/nesting activities and hindrance of vocal communication. Potentially affected species include the MBTA-protected avian species observed or detected during the field reconnaissance survey (see Appendix C) and those special-status species with a moderate to high potential to occur within the BSA—white-tailed kite, Cooper's hawk, southwestern willow flycatcher, least Bell's vireo, Clark's marsh wren, western bluebird, yellow warbler, and yellow-breasted chat.

Noise may also indirectly impact western red bat through disruption of roosting and foraging activities.

Current noise levels are provided below in Table 7 to establish existing conditions within the BSA (AECOM 2015c). In order to evaluate potential indirect impacts to sensitive species from the Project, predicted construction/operation noise levels are provided in Tables 8 and 9 (respectively) for comparison with existing noise levels (AECOM 2015c).

- ***Existing Noise Levels:*** Existing noise at the Project site is primarily influenced by noise from vehicle traffic on the roadways adjacent to and in proximity of the Project site and secondarily, from the noise generated by Stadium events. The predominant traffic noise is from I-15 and I-8. Secondary noise sources of the Project site (non-event) are activities at the surrounding industrial, commercial, office, and residential areas; the MTS Trolley system; and aircraft flyover.

Short-term noise measurements were regularly taken at Murphy Canyon Creek and the San Diego River to determine the existing ambient (non-event) and event noise conditions. Murphy Canyon Creek is narrow with minimal vegetation to buffer the habitat from the constant urban noise caused from freeway traffic (I-15) and Qualcomm Stadium events under existing conditions. Similarly, the San Diego River is subject to constant urban noise because it crosses under I-15 and is subject to noise from Qualcomm Stadium events as well as the MTS Green Line Trolley that runs adjacent to it on a daily basis.

Event noise levels at the San Diego River vary between 55 and 67 dBA and existing ambient (non-event) noise levels at the San Diego River vary between 54 to 62 dBA (Table 7 and Figure 6). Event noise levels along Murphy Canyon Creek vary between 52 and 75 dBA and ambient (non-event) noise levels along Murphy Canyon Creek range from 70 to 76 dBA (Table 7 and Figure 6). According to the data in Table 7, the ambient (non-event) noise levels at both Murphy Canyon Creek and San Diego River are similar to the noise generated by existing Qualcomm Stadium events.

- ***Predicted Construction Noise Levels:*** New stadium construction would result in noise from pumps, generators, and compressors, or a variable noise operation, such as pile drivers, rock drills, and pavement breakers. Site preparation involves demolition, grading, compacting, and excavating, which would include the use of backhoes, bulldozers, loaders, excavation equipment (e.g., graders and scrapers), pile drivers, and compaction equipment. Finishing activities may include the use of pneumatic hand tools, scrapers, concrete trucks, vibrators, and haul trucks. Demolition would result in noise from explosion and implosion of Qualcomm Stadium.

Noise associated with pile driving and blasting activities at the new stadium footprint would result in noise levels of 64 dBA and 53 dBA at Murphy Canyon Creek and the San Diego River, respectively. This could potentially result in an indirect impact to potentially occurring sensitive avian species. However, as shown in Tables 7 and 8, the existing ambient noise level at Murphy Canyon Creek reaches 76 dBA which exceeds the 64 dBA projected from pile driving. Existing ambient noise at the San Diego River reaches 67 dBA and which exceeds projected 53 dBA from pile driving (Tables 7 and 8). This comparison of existing and projected noise data indicates that indirect noise impacts on sensitive species potentially occurring in Murphy Canyon Creek or the San Diego River would not be directly attributed to pile driving and blasting associated with the Project. Therefore, no indirect impacts from Project-related pile driving and blasting are less than significant.

Table 7
Existing Event Noise Levels at San Diego River and Murphy Canyon Creek

Measurement Location[1]	Qualcomm Stadium (Existing) - Predicted Event Noise Levels (dBA)																
	Professional Football Game		College Football Game		Motorsports (Supercross)		Live Music / Concert		Weekday – No Event			Saturday – No Event			Sunday – No Event		
	With Traffic	Event-Only	With Traffic	Event-Only	With Traffic	Event-Only	With Traffic	Event-Only	day	evening	night	day	evening	night	day	evening	night
San Diego River (ST-6)	66	58	65	55	66	58	67	61	62	60	55	58	57	54	59	58	54
Murphy Canyon Creek (MCC)	75	55	75	52	75	55	75	60	76[2]	74[2]	71[2]	75[2]	74[2]	72[2]	74[2]	74[2]	70[2]

[1] Locations depicted on Figure 6
[2] An existing noise receptor to measure daily noise levels was not available next to Murphy Canyon Creek. The nearest receptor (LT-1) is on the east side of I-15 (Figure 6). This receptor along with the estimated noise contours shown in Figure 6 was used to provide values for the existing noise levels near Murphy Canyon Creek.
Source: AECOM 2015c

Table 8
Predicted Construction Noise Levels at San Diego River and Murphy Canyon Creek

Measurement Location[1]	Project – Predicted Construction Noise Levels (dBA)					
	Demolish Old Parking	New Stadium Site Prep	New Stadium Bldg Construction	New Stadium Bldg Construction - Pile Driving Only	Old Stadium Demolition (excludes blasting)	New Stadium Parking
San Diego River (ST-6)	66	70	57	53	64	75
Murphy Canyon Creek (MCC)	66	70	66	64	62	93

[1] Locations depicted on Figure 6
Source: AECOM 2015c

Table 9
Predicted Event Noise Levels at San Diego River and Murphy Canyon Creek

Measurement Location[1]	Project - Predicted Event Noise Levels (dBA)							
	Professional Football Game		College Football Game		Motorsports (Supercross)		Live Music / Concert	
	With Traffic	Event-Only	With Traffic	Event-Only	With Traffic	Event-Only	With Traffic	Event-Only
San Diego River (ST-6)	65	52	65	49	65	53	66	59
Murphy Canyon Creek(MCC)	75	60	75	57	76	60	76	63

[1] Locations depicted on Figure 6
Source: AECOM 2015c

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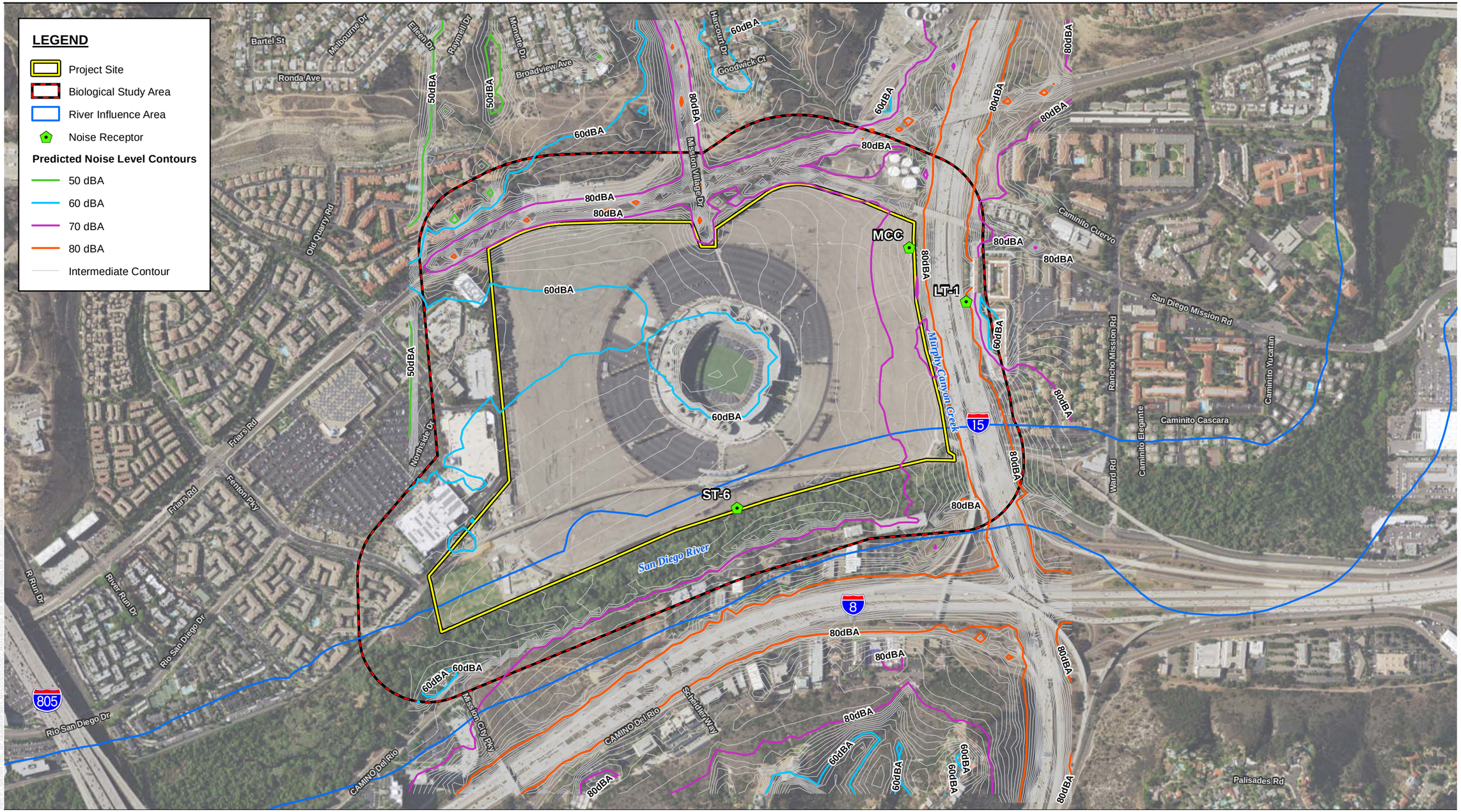

Source: NAIP 2014.

700 350 0 700 Feet

Scale: 1 = 8,400; 1 inch = 700 feet

Figure 6
Predicted Daytime Ambient Noise Level Contours

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Parking lot improvements include use of saw cutters and scrapers that can generate noise levels as high as 93 dBA L_{eq} at 50 feet. Parking lot improvements are anticipated to occur directly adjacent to Murphy Canyon Creek and a minimum of 235 feet from the San Diego River. As shown in Table 8, parking lot improvements 235 feet away from the San Diego River would generate noise levels as high as 75 dBA. This exceeds maximum noise measured at the San Diego River during current stadium events (67 dBA) (Table 7). As shown in Table 8, parking lot improvements directly adjacent to Murphy Canyon Creek would generate noise levels as high as 93 dBA. This also exceeds the existing stadium noise levels that currently reach a maximum of 76 dBA on weekdays with no special events (Table 7). This comparison of existing and projected noise from Project-related parking improvements indicate that proposed improvements would result in indirect impacts to the natural environment and associated sensitive species potentially occurring in Murphy Canyon Creek and the San Diego River.

- ***Predicted Operation Noise Levels:*** No indirect noise impacts to potentially occurring sensitive species associated with the San Diego River are anticipated from Project operation. As shown in Tables 7 and 9, projected operational noise measured along the San Diego River would be similar to operational noise currently measured for Qualcomm Stadium. Events at the existing stadium generate noise levels between 55 and 67 dBA (Table 7). Existing ambient (non-event) noise levels at the San Diego River measure between 54 and 62 dBA (Table 7). For the Project, event noise is projected between 49 and 66 dBA (Tables 7 and 9), that is less than or within the range of existing noise levels. Thus, these data indicate that indirect Project-related operational noise impacts to the San Diego River and associated sensitive species would be less than significant.

  Similarly, Project operation is not expected to result in indirect impacts to potentially occurring sensitive species in Murphy Canyon Creek. Projected event noise levels along the northern portion of Murphy Canyon Creek would be elevated from existing conditions due to the proximity of the planned facility to the creek. However this project increase in event noise is not significant because existing ambient noise at MCC is relatively high. Currently, event noise from Qualcomm Stadium reaches between 52 and 75 dBa. Existing ambient (non-event) noise levels at Murphy Canyon Creek are between 70 and 76 dBA (Table 7). Event noise at Murphy Canyon Creek between 57 and 76 dBA is projected for the new stadium (Tables 7 and 9). These data indicate that projected noise levels at Murphy Canyon Creek generated from Project operation will remain within the current range of operational and ambient noise.

Thus, noise from Project operation is expected to have a less than significant indirect impact on adjacent habitats and potentially occurring sensitive species in Murphy Canyon Creek.

As described in Chapter 1, the number of stadium events would increase from 200 events per year to approximately 252 events per year after Project completion. This increase in the number of events could potentially increase noise indirect effects to nesting birds in the San Diego River and Murphy Canyon Creek by number of exposures as compared to existing conditions. Potential impacts include additional noise from traffic in the parking lot near the San Diego River and Murphy Canyon Creek; however, these areas are currently used for parking during events at Qualcomm Stadium. The noise levels from traffic at each extra event would not be louder than any single event noted in Table 7. Therefore, despite a cumulative increase in events, no single event would exceed the ambient levels noted in Table 7; noise impacts from 50 additional events per year would be less than significant.

As described above, noise levels from Project operation are expected to be similar to the existing conditions; however, noise levels from Project construction (i.e., parking lot improvements) are expected to be higher than the existing conditions at both Murphy Canyon Creek (17 dBA increase) and the San Diego River (8 dBA increase). Impacts to noise-sensitive species are anticipated to be less than significant through implementation of BIO-17 through BIO-19, as described in Chapter 6.

Lighting: Artificial night lighting could disturb special-status avian and bat species nesting and/or roosting in adjacent habitat. Lighting could affect the habitat value by modifying predation rates, obscuring lunar cycles, and/or causing direct habitat avoidance. Special-status bat and/or avian species potentially affected by light include the MBTA-protected avian species observed or detected during the field reconnaissance survey (see Appendix C) and those special-status species with a moderate to high potential to occur within the BSA—white-tailed kite, Cooper's hawk, southwestern willow flycatcher, least Bell's vireo, Clark's marsh wren, western bluebird, yellow warbler, yellow-breasted chat, and western red bat. Existing light levels are described below based to establish existing conditions within the BSA. The lighting discussion is based on the *Glare and Light Spillage Analysis* report (AECOM 2015d). Predicted construction/operation light levels are also provided for comparison with existing light levels to determine if the potential indirect impacts will result from the Project.

- ***Existing Light Levels:*** The Project site is adjacent to a highly urbanized area and lighting from I-8, I-15, MTS Green Line Trolley, the Qualcomm Stadium parking lot,

and other urban structures currently influence Murphy Canyon Creek and the San Diego River. Special-status bat and/or avian species inhabiting the adjacent riparian habitat have been exposed to existing light levels at the Project site since Qualcomm Stadium was opened in 1967.

- ***Predicted Construction Light Levels:*** Construction/demolition hours of operation would be from 7:00 a.m. to 5:00 p.m. Monday through Saturday. Therefore, no nighttime lighting would be required during construction except for security purposes.

- ***Predicted Operation Light Levels:*** Operation of the new stadium would require event lighting (including interior lighting) and exterior stadium lighting (i.e., building perimeter lighting and parking lot lighting), as well as interior emergency lighting. Event lighting would consist of outdoor metal LED or similar energy-efficient luminaire floodlights with internal reflector systems to control light spill and glare. Proposed interior stadium lighting has little to no effect on the illuminance levels in the parking lot (AECOM 2015d) and therefore, is expected to have no impact on adjacent habitats.

  Exterior lighting associated with the new stadium would be designed to provide clear, safe pedestrian paths around the stadium. Existing parking lot lighting would be upgraded to more energy-efficient lights. Project-related exterior lighting would increase the ambient lighting of the nighttime sky during stadium events and would be considered an indirect Project impact that could affect potentially occurring sensitive species associated with Murphy Canyon Creek and the San Diego River. This impact would be less than significant upon implementation of lighting design measures described as BIO-4 in Chapter 6. As described in Chapter 1, the number of stadi*u*m events would increase from 200 events per year to approximately 252 events per year after Project completion. This increase in the number of events could result in indirect impacts by potentially disruptive to nesting avian species in the San Diego River and Murphy Canyon Creek by increasing the number of lighting exposures as compared to existing conditions.

  These additional events would be spread throughout the year and not all of them would occur during the nesting season. New parking lights would be shielded and directed away from the riparian areas in the Murphy Canyon Creek in order to reduce light spillage from the adjacent parking lot. New lighting would not be placed within 235 feet of the San Diego River. Furthermore, many of the additional events, such as

car or RV sales, would occur in the daytime. Thus, light impacts from the additional events per year would be less than significant.

As described above, light levels from Project construction are expected to be similar to the existing conditions; however, light levels during Project operation have the potential to increase ambient nighttime lighting. Impacts from an increase in ambient nighttime lighting are anticipated to be less than significant through implementation of BIO-4, as described in Chapter 6.

In summary, the biological resources associated with the San Diego River and Murphy Canyon Creek are currently subject to edge effects from the operation of the existing stadium. Project compliance with the Land Use Adjacency Guidelines presented as mitigation in BIO-1 through BIO-5, BIO-9 through BIO-12, and BIO-13 through BIO-19 would avoid or minimize these edge effects. Thus, indirect impacts to sensitive species potentially occurring in the Project area from exotic species introduction, changes in hydrology, unauthorized access resulting from Project construction or operation would be less than significant. Project-related indirect impacts to special status species from noise and lighting also would be less than significant through implementation of measures BIO-4 and BIO-17 through BIO-19. Measures are discussed in detail in Chapter 6.

5.2.4 Wildlife Movement

As described in Section 4.6, the San Diego River is identified as a regional habitat linkage in the County of San Diego MSCP (County of San Diego 1998) and in the Missing Linkages report by South Coast Wildlands (Penrod et al. 2001). The San Diego River provides a regional corridor between Mission Trails Regional Park and Mission Bay Park. Concentrated development and heavily traveled roads surrounding the San Diego River corridor limit terrestrial species from using this corridor to disperse to adjacent canyons. However, this regional corridor is known to support common medium-sized mammals such as raccoon, opossum, and coyote, as well as avian or bat species that are capable of flying over barriers to adjacent habitat.

Murphy Canyon Creek functions primarily as “stepping stone” for avian and bat species to travel between the San Diego River MHPA and larger fragments of MHPA to the northwest of the junction of Murphy Canyon Creek and Friars Road. In addition, avian and bat species may use this “stepping stone” habitat to reach larger fragments of MHPA habitat east of I-15 that ultimately lead to Mission Trails Regional Park and undeveloped areas to the north.

Indirect impacts to wildlife movement from Project construction and operation would be similar to indirect impacts described in Section 5.2 for special-status species and vegetation communities. Indirect impacts from construction and operation that have the potential to degrade the quality of vegetation and sensitive species habitat would also discourage the use of these same habitats for wildlife movement including, but not limited to, the use of the San Diego River and Murphy Canyon Creek for avian migration.

Indirect impacts to wildlife movement from exotic species introduction, changes in hydrology, unauthorized access, noise, and lighting currently result as edge effects associated with the operation of Qualcomm Stadium. Potential construction and operation-related indirect impacts to wildlife movement would be less than significant upon implementation of mitigation measures BIO-1 through BIO-5, BIO-9 through BIO-12, and BIO-13 through BIO-17 as described in Chapter 6.

5.2.5 Multi-Habitat Planning Area

Because the MHPA is located adjacent to but outside of the Project, the Project must comply with MHPA Land Use Adjacency Guidelines in Section 1.4.3 of the City of San Diego's MSCP Subarea Plan (City of San Diego 1997a).. Each Adjacency Guideline is included below and followed by a project-specific analysis.

5.2.5.1 Drainage

The City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) states "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."

The existing conditions of Qualcomm Stadium cause stormwater to drain directly into the MHPA south of the Project (i.e., San Diego River). The Project would not eliminate drainage into the MHPA, but, as stated in Section 1.3, it shall treat and reduce overall output into the San Diego River as follows: the inner stadium reconstruction footprint and outside perimeter

pedestrian areas shall be self-retaining (e.g., porous paving, bioretention planters/tree pits, interspersed parking island landscapes, site edge treatments, etc.) to capture the rainfall volume associated with the 85th percentile storm per City and state requirements. Additionally, stormwater harvesting and reuse BMPs shall be incorporated into the Project design to capture and store stormwater runoff for later use. Thus, the Project would reduce runoff into the MHPA and reduce the level of toxins currently released into the San Diego River.

Implementation of BMPs and preparation and compliance with a SWPPP will ensure that sediment and water sources of nonnative seed will be captured or directed away from the MHPA or generally minimized to the extent practicable. Potential construction- and operation-related indirect impacts associated with drainage into the San Diego River would be less than significant through implementation of design measures BIO-1 through BIO-3, and construction measure BIO-15, described in Chapter 6.

5.2.5.2 Toxics

The City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) states "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 described above in Section 5.2.5.1, the Project would result in unavoidable drainage into the MHPA. However, stormwater BMPs would be implemented that would decrease the pollutant load contributions to the San Diego River MHPA, to the extent feasible. In particular, BIO-11 requires the preparation of a SWPPP according to RWQCB standards. The Project would comply with the guidelines established by that document thereby ensuring that water quality would be maintained at a level not considered potentially toxic or impactful to wildlife, sensitive species or habitat. Potential construction- and operation-related indirect impacts associated with toxics entering adjacent MHPAs would be less than significant upon implementation of design measures BIO-1 through BIO-3 and construction measure BIO-15, described in Chapter 6.

5.2.5.3 Lighting

The City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) states "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."

Any new lighting would be installed at least 235 feet from the MHPA and would be directed away from the MHPA. Potential construction- and operation-related indirect impacts associated with lighting in adjacent MHPAs would be less than significant through implementation of design measure BIO-4 described in Chapter 6.

5.2.5.4 Noise

The City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) states "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 MHPA to the south (i.e., San Diego River) is currently exposed to high noise levels by existing noise sources as discussed in Section 5.2.3. The MHPA to the north is also currently impacted by existing noise, including traffic from Friars Road and Mission Village Drive, and Qualcomm Stadium. Noise from construction of the new stadium would be greater than the existing conditions (AECOM 2015c). As discussed in Section 5.2.3, noise from operation of the new stadium would be similar to existing ambient noise levels; however, noise from construction (specifically parking lot improvements) would be higher than existing noise levels. Increases in ambient noise levels in the MHPA areas would adversely affect species, in particular birds, which rely on sound to communicate. Potential construction-related indirect impacts associated with noise in the adjacent MHPA would be less than significant with implementation of Mitigation Measures BIO-17 through BIO-19.

5.2.5.5 Barriers

The City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) states "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."

Friars Road provides a barrier between the Project and the MHPA to the north of the Project. The MHPA area to the south of the Project is already protected with a chain link fence that precludes people from accessing the San Diego River MHPA. Additionally, the San Diego River MHPA to the south of the Project would be approximately 235 feet from Project activities. Potential construction- and operation-related indirect impacts associated with unauthorized trespass into the adjacent MHPA would be less than significant.

5.2.5.6 Invasives

The City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) states "No invasive non-native plant species shall be introduced into areas adjacent to the MHPA."

As described in Chapter 6, BIO-15 minimizes the introduction of toxins into the MHPA through implementation of BMPs and preparation and compliance with a SWPPP to ensure that sediment and water sources of nonnative seed would be captured or directed away from the MHPA or generally minimized to the extent practicable. Per design measure BIO-5, landscaping shall include California native species and shall not include plants considered invasive by the Cal-IPC (Cal-IPC 2006). No other measures are proposed since the site is currently developed and any soil brought to the site would be covered with concrete.

5.2.5.7 Brush Management

The City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) states "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 homeowners association or other private party."

Brush management is not required for the Project because Project improvements would be entirely within a developed area surrounded by a paved parking lot. Therefore, this guideline is not applicable to the Project.

5.2.5.8 Grading/Land Development

The City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) states "Manufactured slopes associated with site development shall be included within the development footprint for projects within or adjacent to the MHPA."

The Project is not within the MHPA. Manufactured slopes associated with site development shall be included within the development footprint. Potential construction-related grading would not affect the MHPA.

5.3 CUMULATIVE IMPACTS

CEQA Guidelines Section 15355 defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts refer to the incremental impacts from two or more projects when considered together. When analyzed separately, the impacts are minor; however, when analyzed together, impacts could be considered significant over a period of time.

The cumulative analysis geographic scope for biological resources includes the Mission Valley area. In Mission Valley, the dense urbanized setting creates limited habitat opportunities and biological resources tend to be fairly isolated with areas of connectivity restricted to a few linear features such as Murphy Canyon Creek or the San Diego River.

The cumulative analysis geographic scope considered all projects within Mission Valley, including Town and Country (MV Atlas), Riverwalk, Camino del Rio Mixed Use Project (Bob Baker site), Civita (formerly known as Quarry Falls), Union-Tribune Mixed Use Project, University of San Diego Master Plan, Hazard Center Redevelopment, Legacy International Center, Vagabond Inn, Discovery Center, and Shawnee LLC/CG 7600 Master Plan. However,

projects identified from the Mission Valley area that could potentially contribute to cumulative impacts on the biological resources associated with the San Diego River and Murphy Canyon Creek are summarized below. These projects would either result in no impacts to biological resources in the Project vicinity, or impacts that would be mitigated to below a level of significance.

Table 10
Projects within the Cumulative Analysis Geographic Scope (Mission Valley) that could Potentially Contribute to Impacts on Biological Resources

Project	Contribution to Cumulative Impacts on Biological Resources
Camino Del Rio Mixed Use Project	No biological resources on the project site and no potential for impacts to sensitive resources to occur (City of San Diego 2014)
Union Tribune Mixed Use Project	Direct impacts to candidate, sensitive, or special status species were not anticipated with project implementation. However, impacts to eucalyptus woodlands have the potential to impact nesting birds protected under the MBTA. Mitigation measures required of the project would reduce potential biological impacts to less than significant (City of San Diego 2015).
Hazard Center Redevelopment Project	The project has the potential to indirectly impact bird species protected by the MBTA due to proximity of the project to the San Diego River and MHPA lands. Impacts would be reduced to less than significant levels through mitigation including avoidance of construction during the nesting season or preconstruction clearance surveys and avoidance of nests during the nesting season (City of San Diego 2010).
Civita Project	The project identified direct impacts to a total of approximately 14 acres of habitats considered sensitive by the City of San Diego – disturbed wetland, coastal sage scrub (Tier II), mixed chaparral (Tier IIIA), and nonnative grassland (Tier IIIB). These impacts would be mitigated to less than significant through acquisition of credits from mitigation banks in combination with habitat enhancement (City of San Diego 2008).

Considering the impacts and mitigation associated with the projects listed above, the Project is not expected to contribute significantly to cumulative impacts on the resources associated with the San Diego River and Murphy Canyon Creek. As described previously in this report, the Project would occur entirely within urban/developed habitat. The Project would comply with all approved local, regional, state, and federal regulations, policies, ordinances, and finalized HCP/NCCP conservation plans and would not encroach into the MHPA.

No direct impacts would occur to jurisdictional waters and wetlands in Murphy Canyon Creek or the San Diego River adjacent to the Project. Water quality and hydrology would be maintained at current conditions per Section 401, 402, and 404 regulations for the Project as well as cumulative projects. Some direct impacts are anticipated from bird collisions with the new stadium and the proposed PV system. Both would be minimized through design measures (BIO-6 through

BIO-8), but not to a level below significant. Because potential bird strike impacts have not been identified from other projects in the vicinity, it is not anticipated that the Project would result in cumulative impacts to special-status species or MBTA-protected species.

Indirect construction impacts from dust, sedimentation, erosion, and unauthorized access have the potential to degrade the quality of adjacent riparian vegetation communities, jurisdictional waters and wetlands, wildlife corridors, introduce invasive species, and impact lands with the MHPA. These would be less than significant upon Project compliance with Land Use Adjacency Guidelines. Compliance with these guidelines would likely result in conditions that are relatively beneficial for natural areas adjacent to the Project. Therefore, the Project would not contribute to cumulative indirect impacts on vegetation, sensitive jurisdictional habitat, corridors or preserve areas.

Indirect impacts associated with construction noise and operational lighting could affect potentially-occurring special status species; however, upon implementation of BIO-4, and BIO-17 through BIO-19, impacts would be less than significant. No cumulative indirect impacts to biological resources from Project noise and light are anticipated.

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CHAPTER 6
MITIGATION MEASURES

This section identifies mitigation measures that shall be implemented as part of the Project to prevent degradation of sensitive biological resources to the maximum extent feasible. Design and construction measures are provided separately in this section. Design measures are consistent with MHPA Land Use Adjacency Guidelines in Section 1.4.3 of the City of San Diego's MSCP Subarea Plan (City of San Diego 1997a) to address operation-related indirect impacts from drainage, toxics, lighting, noise, unauthorized trespass, invasive plant species, brush management, and grading discussed in Section 5.2.5.

With the exception of operation-related impacts from avian collisions, no significant Project impacts are anticipated to occur upon implementation of these mitigation measures. Operation-related impacts from avian collisions with the new stadium or PV facilities that could occur to special-status avian species and avian species protected under the MBTA would remain significant and unmitigated. Table 11 summarizes applicable mitigation measures relative to each significance criterion.

Table 11
Summary of Impacts and Applicable Mitigation Measures

Significance Criterion and Impact Type	Applicable Measures	Significance after Mitigations
1. A substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in the MSCP or other local or regional plans, policies, or regulations, or by CDFW or USFWS.		
Direct Impacts	BIO-1, BIO-6 through BIO-13, and BIO-18	Operation-related impacts from avian collisions significant and unavoidable
Indirect Impacts	BIO-1 through BIO-5 and BIO-9 BIO-19	Less than Significant
2. A substantial adverse impact on any Tier I Habitats, Tier II Habitats, Tier IIIA Habitats, or Tier IIIB Habitats as identified in the Biology Guidelines of the Land Development Code or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.		
Direct Impacts	Not applicable (no impacts)	Less than Significant
Indirect Impacts	BIO-1 through BIO-3, BIO-5, BIO-9 through BIO-12, and BIO-14 through BIO-16	Less than Significant
3. A substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pool, riparian, etc.) through direct removal, filling, hydrological interruption, or other means.		
Direct Impacts	Not applicable (no impacts)	Less than Significant
Indirect Impacts	BIO-1 through BIO-3, BIO-5, BIO-9 through BIO-12, and BIO-14 through BIO-16	Less than Significant

Significance Criterion and Impact Type	Applicable Measures	Significance after Mitigations
4. Interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, including linkages identified in the MSCP Plan, or impede the use of native wildlife nursery sites.		
Direct Impacts	Not applicable (no impacts)	Less than Significant
Indirect Impacts	BIO-1 through BIO-5 and BIO-9 through BIO-17	Less than Significant
5. A conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan, either within the MSCP plan area or in the surrounding region. *6. Introducing land use within an area adjacent to the MHPA that would result in adverse edge effects.* *7. A conflict with any local policies or ordinances protecting biological resources.*		
Direct Impacts	Not applicable (no impacts)	Less than Significant
Indirect Impacts	BIO-1 through BIO-5, and BIO-9 through BIO-19	Less than Significant
8. An introduction of invasive species of plants into a natural open space area.		
Direct Impacts	Not applicable (no impacts)	Less than Significant
Indirect Impacts	BIO-5 and BIO-15	Less than Significant

4.2.4.1 Design Measures

BIO-1. *Grading/Land Development/MHPA Boundaries* – MHPA boundaries on adjacent properties shall be delineated on the Construction Documents. The City's Development Services Department (DSD) Planning and/or MSCP staff shall ensure that all grading is included within the Project footprint, specifically manufactured slopes, disturbance, and development adjacent to the MHPA. All manufactured slopes associated with site development shall be included within the development footprint.

BIO-2. *Drainage* – Measures incorporated into the Project design shall minimize the release of toxins, chemicals, petroleum products, and exotic plant materials from developed and paved areas as set forth in this measure. The existing conditions of Qualcomm Stadium cause stormwater to drain directly into the MHPA (i.e., San Diego River). The Project would not eliminate drainage into the MHPA, but it would treat and reduce overall output into the San Diego River as follows: the inner new stadium footprint and outside perimeter pedestrian areas shall be self-retaining (e.g., porous paving, bioretention planters/tree pits, interspersed parking island landscapes, site edge treatments, etc.) to capture the rainfall volume associated with the 85th percentile storm per City and state requirements. Additionally, stormwater harvesting and reuse BMPs shall be incorporated into the Project design to capture and store stormwater runoff for later use. Stormwater runoff shall be reduced from current levels, which would decrease pollutant load contributions to the San Diego River.

BIO-3. *Toxics/Project Staging Areas/Equipment Storage* – The Project shall be designed to achieve LEED Gold certification from the U.S. Green Building Council, which requires that a project incorporate specific measures to reduce impacts caused by the application and/or drainage of chemicals or generated by-products such as pesticides, herbicides, and other substances that are potentially toxic or impactful to native habitats/flora/fauna (including water) into the MHPA. No trash, oil, parking, or other construction/development-related material/activities shall be allowed outside any approved construction limits.

BIO-4. *Lighting* - Lighting of all developed areas adjacent to the MHPA shall be shielded, unidirectional, and directed away from the MHPA and subject to the City's Outdoor Lighting Regulations per Land Development Code Section 142.0740. The Project shall utilize low-reflective glass materials and vary the fenestration to break up large expanses of light-colored materials and shall implement stadium floodlight good practices to prevent over-lighting and focus light on the new stadium field (AECOM 2015d). Additionally, nighttime lighting shall include design features to minimize impacts to birds and bats such as shielded lights (to reduce ambient light into nearby native habitats), use of motion detectors and other automatic controls, and lighting design that uses shields to prevent light from shining upward into the sky (Sheppard 2011).

BIO-5. *Invasive Plant Species* - Invasive nonnative plant species shall not be introduced into areas adjacent to the MHPA. Project landscaping shall not include plants considered invasive by the Cal-IPC (Cal-IPC 2006). Implementation of BMPs and preparation and compliance with a SWPPP will ensure that sediment and water sources of nonnative seed will be captured or directed away from the MHPA or generally minimized to the extent practicable.

BIO-6. *Building Design* – The Project design shall consider features that reduce bird collisions with buildings. Design features that shall be considered to reduce bird collisions such as the following: transparent passageways, corners, atria, or courtyards so that birds do not get trapped; appropriately shielded outside lighting that is directed away from native habitats to minimize attraction to light-migrating songbirds; interior lighting that is turned off at night or designed to minimize light escaping through windows; and landscaping designed to keep birds away from the building's façade. Use of non-reflective or opaque glass; external shades (or other devices to reduce glare, transparency, or reflectiveness) on windows; ultraviolet patterned glass; angled glass; and/or louvers can aid in reducing bird collisions (Sheppard 2011).

BIO-7. *Photovoltaic Solar Design* – PV panels shall be situated in the northwest area of the Project site, away from vegetation or habitat familiar and attractive to birds that would result in disorienting reflective images (Cusa et al. 2015, Sheppard 2011). Non-reflective PV modules shall be used over reflective technologies to minimize collision risk.

BIO-8. *Avian Mortality Monitoring* - The City shall assess Project-related impacts to avian species to avoid and reduce potential impacts to the greatest extent feasible. The City shall voluntarily develop and implement a post-construction monitoring plan in coordination with USFWS and CDFW to assess impacts on avian species resulting from the Project. The post-construction monitoring plan shall include a description of standardized carcass searches, scavenger rate (i.e., carcass removal) trials, searcher efficiency trials, and reporting. Statistical methods shall be used to estimate Project avian fatalities if sufficient data is collected to support analysis. Pending result of monitoring, avian deterrents shall be considered, such as the use of radar and bio-acoustics to activate nuisance sounds that would deter birds from that area of the parking lot.

4.2.4.2 Construction Measures

BIO-9. To minimize direct and indirect impacts to avian and bat species, a letter shall be provided to the City's Mitigation Monitoring Coordination (MMC) section stating that a Project Biologist (Qualified Biologist) as defined in the City of San Diego's Biological Guidelines (2012), 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. A Qualified Biologist is defined as having a bachelor's degree in biology or a closely related field with appropriate areas of study to understand San Diego's local avian and bat species; sufficient local field experience in identification of avian and bat species, experience in habitat evaluation and in quantifying environmental impacts, and familiarity with suitable mitigation methods including revegetation design and implementation.

BIO-10. The Qualified Biologist shall submit a Biological Construction Mitigation/Monitoring Exhibit (BCME) which includes all required documentation to MMC 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, Multiple Species Conservation Program (MSCP), Environmentally Sensitive Lands Ordinance (ESL), project permit conditions; California Environmental Quality Act (CEQA); endangered species acts (ESAs); and/or other local, state or federal

requirements. In addition, the BCME shall include: avian survey schedules (including general avian nesting and USFWS protocol), timing of surveys, 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 (ADD)/MMC. The BCME shall include a site plan, written and graphic depiction of the Project's biological mitigation/monitoring program, and a schedule. The BCME shall be approved by MMC and referenced in the construction documents. The Qualified Biologist shall submit a final BCME/report to the satisfaction of the City ADD/MMC within 30 days of construction completion.

BIO-11. 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. The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna onsite (e.g., flag plant specimens 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. The Qualified Biologist shall document field activity via the Consultant Site Visit Record (CSVR). The CSVR shall be e-mailed to MMC 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.

BIO-12. Prior to initiation of any construction-related grading, the construction foreman, construction crew, and/or the Qualified Biologist shall have a preconstruction meeting to discuss the sensitive nature of the adjacent habitat with the construction crew, the limits of construction, approved construction staging areas, mitigation measures including site-specific monitoring and preconstruction avian clearance surveys, and monitoring.

BIO-13. To avoid direct permanent impacts to sensitive habitats and species, the limits of construction shall be clearly delineated by a survey crew prior to Project construction. The limits of construction shall be defined with silt fencing or orange construction fencing and checked by the Qualified Biologist before initiation of construction grading.

BIO-14. Spoils, trash, and any construction-generated debris shall be removed to an approved off-site disposal facility. A trash abatement program shall be established. Trash and food items shall be contained in closed containers and removed daily to reduce the attraction of opportunistic predators such as common ravens, coyotes, and feral cats and dogs that may prey on sensitive species. This phase shall include flagging and delimiting buffers to protect sensitive biological resources (e.g., nesting birds) during construction. Appropriate steps/care shall be taken to minimize attraction of nest predators to the site.

BIO-15. A SWPPP shall be prepared prior to the start of construction as required by Construction General Permit Order 2009-0009-DWQ (as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ). The SWPPP would be prepared by a Qualified SWPPP Developer certified by the California Storm Water Quality Association. The SWPPP would specify measures to avoid or minimize construction-related surface water pollution to include proper runoff controls, pollutant source controls, and runoff treatment controls (when other nontreatment controls are insufficient for reducing runoff pollutant loads) that may degrade sensitive species habitat. The construction SWPPP would include water quality protection and monitoring measures and storm water BMPs to minimize scour/erosion and control sediment that may degrade sensitive species habitat. Implementation of BMPs and preparation and compliance with a SWPPP will ensure that sediment and water sources of nonnative seed will be captured or directed away from the MHPA or generally minimized to the extent practicable. The SWPPP is described in further detail in Section 4.8.4 of the Hydrology and Water Quality section of the EIR (AECOM 2015c).

BIO-16. Dust suppression measures shall be implemented during construction to minimize the creation of dust clouds and possible degradation of sensitive vegetation communities, special-status species suitable habitat, and critical habitat. These measures include applying water at least once per day or as determined necessary by the qualified biologist(s) to prevent visible dust emissions from exceeding 100 feet in length in any direction.

BIO-17. To minimize construction noise impacts to birds and bats in the MHPA, berms or walls (e.g., at least 0.5-inch thick plywood) shall be constructed to reduce noises that could impact or interfere with wildlife utilization of the MHPA. Temporary noise barriers using appropriately thick wooden panel walls (at least 0.5-inch thick) shall be within the development footprint and built high enough to block the dominant construction noise source(s).

BIO-18. To avoid impacts to raptors and/or native/migratory birds, Project activities, including removal of habitat that supports active nests in the new stadium footprint (i.e., ornamental trees), shall occur outside of the breeding season for these species (February 1 [January 1 for some raptors] through September 15) except as follows. If Project disturbances must occur during the breeding season to accommodate the Project schedule, a Qualified Biologist shall conduct a pre-construction survey within 300 feet of the disturbance area (within 500 feet for raptors) to determine the presence or absence of nesting birds that may be impacted by visual disturbance from construction. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). Results of the pre-construction survey shall be submitted to the City's DSD for review and approval prior to initiating any construction activities.

If nesting birds are detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines and applicable state and federal law (e.g., appropriate follow-up surveys, monitoring schedules, visual construction 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. No-disturbance buffers (i.e., areas where work shall not occur) around active nests would be set at distances at the discretion of the Qualified Biologist and would be dependent on species, nest location, and an individual's habituation to human activity. Recommended distances include 100 feet for passerine birds and 500 feet for raptors; however, these distances can be reduced/enlarged at the discretion of the Qualified Biologist based on the behavior and response of the nesting individuals to construction-related activity. For example, parking lot improvements near active nests may require larger buffers to mitigate the high level of noise. The report or mitigation plan shall be submitted to the City DSD for review and approval. 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. If nesting birds are not detected during the pre-construction survey, no further mitigation is required.

BIO-19. A Qualified Biologist (possessing a valid FESA section 10(a)(1)(A) recovery permit for southwestern willow flycatcher) shall survey those wetland areas that would be subject to construction noise levels exceeding 60 dBA hourly average or exceeding the dBA of ambient noise levels should they be greater than 60 dBA hourly average (i.e.,

whichever is greater)[6] for the presence of the least Bell's vireo and southwestern willow flycatcher. Surveys for these species shall be conducted pursuant to the protocol survey guidelines established by USFWS within the breeding season for least Bell's vireo (March 15 through September 15) and southwestern willow flycatcher (May 1 through August 30) prior to the commencement of construction. If the species are present, then the following conditions must be met:

a. During the breeding season, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dBA hourly average or exceeding the dBA of ambient noise levels should they be greater than 60 dBA hourly average (i.e., whichever is greater) at the edge of occupied least Bell's vireo or southwestern willow flycatcher habitat.

   An analysis showing that noise generated by construction activities would not exceed 60 dBA hourly average or exceeding the dBA of ambient noise levels should they be greater than 60 dBA hourly average (i.e., whichever is greater) at the edge of occupied habitat shall 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

b. 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 would not exceed 60 dBA hourly average or the dBA of ambient noise level should they be greater than 60 dBA hourly average

[6] The 60 dBA hourly average is the standard threshold used to determine nest disturbance to least Bell's vireo and southwestern willow flycatcher. If ambient noise is less than the 60dBA hourly average, this standard threshold would be used (i.e., the greater value) to determine when noise attenuation measures would be implemented. If ambient noise is already above the 60 dBA hourly average then noise attenuation measures would not be implemented because noise sources are coming from sources other than the Project. Therefore, in the scenario ambient noise is higher than the 60 dBA hourly average, ambient noise levels would be used (i.e., the greater value) to determine when noise attenuation measures would be implemented.

(i.e., whichever is greater) at the edge of habitat occupied by the least Bell's vireo or southwestern willow flycatcher.

Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring[7] shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dBA hourly average or the dBA of ambient noise level should they be greater than 60 dBA hourly average (i.e., whichever is greater). 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.

c. If least Bell's vireo or southwestern willow flycatcher are 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 as follows:

    I. If this evidence indicates the potential is high for least Bell's vireo or southwestern willow flycatcher to be present based on historical records or site conditions, then condition "b" shall be adhered to as specified above.

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

[7] 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 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA 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 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

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CHAPTER 7
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APPENDIX A

REPRESENTATIVE PHOTOGRAPHS

Photo 1. Photo depicts the concrete-lined portion of Murphy Canyon Creek along the eastern edge of the Project site. Note the wetland vegetation growing in the accumulated sediment. Photo taken near the northeastern corner of the Qualcomm Stadium property, facing south.

Photo 2. Photo depicts the disturbed wetland within Murphy Canyon Creek along the eastern edge of the Project site. Photo taken near the middle of the eastern edge, facing south.

Photo 3. Photo depicts the southern riparian woodland along the San Diego River, south of the Project site within the 500-foot survey buffer. Photo taken from the southern edge of the project site, facing south.

Photo 4. Photo depicts the Diegan coastal sage scrub near the southwest corner of the Biological Study Area. Photo taken from the trolley platform, facing southwest.

Photo 5. Photo provides an example of the ornamental trees that occur around the stadium. These trees can provide habitat for nesting birds and raptors. Photo taken from the southern edge of the Project site, facing west.

APPENDIX B

PLANT SPECIES INCIDENTALLY OBSERVED

Appendix B
Plant Species Incidentally Observed within the Biological Study Area (June 2015)

Family	Scientific Name	Common Name	Status*
Anacardiaceae	*Malosma laurina*	Laurel sumac	native
	Schinus molle	Peruvian pepper tree	invasive non-native
	Schinus terebinthifolius	Brazilian pepper tree	invasive non-native
Apiaceae	*Conium maculatum*	Poison hemlock	invasive non-native
	Foeniculum vulgare	Fennel	invasive non-native
Araliaceae	*Hydrocotyle verticillata*	Whorled marsh pennywort	native
Arecaceae	*Phoenix canariensis*	Canary island date palm	invasive non-native
	Washingtonia robusta	Mexican fan palm	invasive non-native
Asteraceae	*Ambrosia psilostachya*	Ragweed	native
	Artemisia californica	Coastal sage brush	native
	Artemisia douglasiana	California mugwort	native
	Artemisia palmeri	San Diego sagewort	native
	Baccharis pilularis ssp. *consanguinea*	Coyote brush	native
	Baccharis salicifolia ssp. *salicifolia*	Mule fat	native
	Baccharis sarothroides	Broom baccharis	native
	Carduus pycnocephalus	Italian thistle	invasive non-native
	Centaurea melitensis	Tocalote	invasive non-native
	Encelia californica	Bush sunflower	native
	Erigeron bonariensis	Flax-leaved horseweed	non-native
	Glebionis coronaria	Crown daisy	non-native
	Helminthotheca echioides	Bristly ox-tongue	invasive non-native
	Isocoma menziesii var. *vernonioides*	Coastal goldenbush	native
	Lactuca serriola	Prickly lettuce	invasive non-native
	Sonchus asper ssp. *asper*	Sow thistle	invasive non-native
	Sonchus oleraceus	Sow thistle	non-native
Boraginaceae	*Heliotropium curassavicum* var. *oculatum*	Seaside heliotrope	native
	Brassica nigra	Black mustard	invasive non-native
	Hirschfeldia incana	Summer mustard	invasive non-native
	Raphanus sativus	Jointed charlock	invasive non-native
	Sisymbrium irio	London rocket	invasive non-native

Family	Scientific Name	Common Name	Status*
Chenopodiaceae	*Atriplex lentiformis*	Big saltbush	native
	Chenopodium murale	Nettle leaf goosefoot	non-native
Cyperaceae	*Cyperus eragrostis*	Tall cyperus	native
	Cyperus involucratus	Umbrella plant	non-native
	Eleocharis sp.	Spike rush	native
	Schoenoplectus acutus var. *occidentalis*	Tule	native
	Schoenoplectus americanus	Chairmaker's bulrush	native
	Schoenoplectus californicus	California bulrush	native
Euphorbiaceae	*Chamaesyce maculata*	Spotted spurge	non-native
	Euphorbia peplus	Petty spurge	non-native
	Ricinus communis	Castor bean	invasive non-native
Fabaceae	*Acacia* sp.	Acacia	non-native
	Acmispon glaber var. *glaber*	Deerweed	native
	Melilotus albus	White sweetclover	invasive non-native
Geraniaceae	*Erodium moschatum*	Whitestem filaree	invasive non-native
Lamiaceae	*Salvia mellifera*	Black sage	native
Malvaceae	*Malva parviflora*	Cheeseweed	non-native
Myrsinaceae	*Anagallis arvensis*	Scarlet pimpernel	non-native
Myrtaceae	*Callistemon citrinus*	Crimson bottlebrush	non-native
	Eucalyptus spp.	gum tree	non-native
Onagraceae	*Oenothera elata*	Evening primrose	native
Phrymaceae	*Mimulus aurantiacus* var. *puniceus*	Sticky monkeyflower	native
Plantaginaceae	*Plantago major*	Common plantain	non-native
Platanaceae	*Platanus racemosa*	California sycamore	native
Plumbaginaceae	*Limonium sinuatum*	Statice	non-native
Poaceae	*Arundo donax*	Giant reed	invasive non-native
	Bromus diandrus	Ripgut brome	invasive non-native
	Bromus madritensis ssp. *rubens*	Foxtail brome	invasive non-native
	Cortaderia selloana	Pampas grass	invasive non-native
	Cynodon dactylon	Bermuda grass	invasive non-native
	Ehrharta erecta	Upright veldt grass	invasive non-native
	Elymus condensatus	Giant wild rye	native
	Pennisetum setaceum	Fountaingrass	invasive non-native
	Schismus barbatus	Old han schismus	invasive non-native

Family	Scientific Name	Common Name	Status*
	Stipa miliacea var. *miliacea*	Smilo grass	non-native
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat	native
Portulacaceae	*Portulaca oleracea*	Common purslane	non-native
Rosaceae	*Heteromeles arbutifolia*	Toyon	native
Salicaceae	*Populus fremontii* ssp. *fremontii*	Fremont's cottonwood	native
	Salix exigua	Narrowleaf willow	native
	Salix gooddingii	Black willow	native
	Salix laevigata	Red willow	native
	Salix lasiolepis	Arroyo willow	native
Sapindaceae	*Koelreuteria* sp.	Goldenrain tree	non-native
Solanaceae	*Datura wrightii*	Jimsonweed	native
Tamaricaceae	*Tamarix ramosissima*	Tamarisk	invasive non-native
Theophrastaceae	*Samolus parviflorus*	Water pimpernel	native
Tropaeolaceae	*Tropaeolum majus*	Garden nasturtium	invasive non-native
Typhaceae	*Typha domingensis*	Cattail	native
Ulmaceae	*Ulmus parvifolia*	Siberian elm	non-native
Verbenaceae	*Verbena lasiostachys* var. *lasiostachys*	Vervain	native

*Source: California Invasive Plant Council Inventory (Cal-IPC 2006): http://www.cal-ipc.org/ip/inventory/pdf/Inventory2006.pdf

APPENDIX C

WILDLIFE SPECIES DETECTED OR OBSERVED

Appendix C
Wildlife Species Incidentally Detected or Observed within the Biological Study Area
(June 2015)

Common Name	Scientific Name
Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Birds	
White-throated swift	*Aeronautes saxatalis*
Bushtit	*Psaltriparus minimus*
House finch	*Haemorhous mexicanus*
Lesser goldfinch	*Spinus psaltria*
Cliff swallow	*Petrochelidon pyrrhonota*
Common yellowthroat	*Geothlypis trichas*
Orange-crowned warbler	*Oreothlypis celata*
Swainson's thrush	*Catharus ustulatus*
Pacific-slope flycatcher	*Empidonax difficilis*
Black phoebe	*Sayornis nigricans*
Nuttall's woodpecker	*Picoides nuttallii*
Mammals	
Coyote	*Canis latrans*
Raccoon	*Procyon lotor*

APPENDIX D

SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR WITHIN THE BIOLOGICAL STUDY AREA

Appendix D
Special-Status Plant and Wildlife Species Documented or with Potential to Occur within the Biological Study Area

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat	Potential for Occurrence within the Biological Study Area
Plants							
Acanthomintha ilicifolia	San Diego thorn-mint	FT	SE	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Usually on clay lenses w/in grassland or chaparral communities.	**Low potential to occur;** no individuals were observed during the 2015 AECOM field survey. Marginally suitable habitat for this species occurs within the patch of Diegan coastal sage scrub near the northeast corner of the survey area.
Adolphia californica	California adolphia	-	-	No	CNPS RPR 2B.1	Chaparral, coastal sage scrub, valley and foothill grassland.	**Low potential to occur;** no individuals were observed during the 2015 AECOM field survey. Marginally suitable habitat for this species occurs within the patch of Diegan coastal sage scrub near the northeast corner of the survey area.
Agave shawii	Shaw's agave	-	-	Yes	CNPS RPR 2B.1	Coastal bluff scrub, coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Ambrosia chenopodiifolia	San Diego bur-sage	-	-	No	CNPS RPR 2B.1	Coastal scrub, mostly associated with maritime succulent scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Ambrosia monogyra	Singlewhorl burrobrush	-	-	No	CNPS RPR 2B.2	Chaparral, Sonoran desert scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Ambrosia pumila	San Diego ambrosia	FE	-	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub, valley and foothill grassland. Dry creek beds, floodplains.	**Low potential to occur;** potential habitat occurs adjacent to the San Diego River but is only marginally suitable.
Aphanisma blitoides	Aphanisma	-	-	Yes	CNPS RPR 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. On bluffs and slopes near the ocean in sandy or clay soils.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE	-	Yes	CNPS RPR 1B.1	Low growing, open chaparral on eroding sandstone.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Artemisia palmeri	San Diego sagewort	-	-	No	CNPS RPR 4.2	Coastal scrub, chaparral, riparian forest, riparian woodland.	**Present;** approximately 20 individuals were incidentally observed along the banks of the San Diego River during the 2015 AECOM field survey.

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat	Potential for Occurrence within the Biological Study Area
Astragalus deanei	Dean's milk-vetch	-	-	No	CNPS RPR 1B.1	Chaparral, coastal scrub, riparian forest. Open, brushy south-facing slopes in Diegan coastal sage, sometimes on recently burned-over hillsides.	**Low potential to occur;** no individuals were observed during the 2015 AECOM field survey. Marginally suitable habitat for this species occurs within the patch of Diegan coastal sage scrub near the northeast corner of the survey area.
Astragalus tener var. *titi*	Coastal dunes milk-vetch	FE	SE	Yes	CNPS RPR 1B.1	Coastal bluff scrub, coastal dunes.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Atriplex coulteri	Coulter's saltbush	-	-	No	CNPS RPR 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Atriplex pacifica	South Coast saltscale	-	-	No	CNPS RPR 1B.2	Coastal scrub, coastal bluff scrub, playas, chenopod scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	-	-	No	CNPS RPR 1B.2	Coastal bluff scrub, coastal scrub. Alkaline soil.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Baccharis vanessae	Encinitas baccharis	FT	SE	Yes	CNPS RPR 1B.1	Chaparral, on sandstone soils in steep, open, rocky areas with chaparral associates.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Berberis nevinii	Nevin's barberry	FE	SE	Yes	CNPS RPR 1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub. On steep, north-facing slopes or in low grade sandy washes.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Bergerocactus emoryi	Golden-spined cereus	-	-	No	CNPS RPR 2B.2	Coastal scrub, sometimes chaparral margins. Limited to the coastal belt. Usually on clay soils.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Bloomeria clevelandii	San Diego goldenstar	-	-	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Mesa grasslands, scrub edges; clay soils. Often on mounds between vernal pools in fine, sandy loam.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Brodiaea orcuttii	Orcutt's brodiaea	-	-	Yes	CNPS RPR 1B.1	Vernal pools, valley and foothill grassland, closed-cone coniferous forest, cismontane woodland, chaparral, meadows.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat	Potential for Occurrence within the Biological Study Area
Ceanothus cyaneus	Lakeside ceanothus	-	-	Yes	CNPS RPR 1B.2	Closed-cone coniferous forest, chaparral.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Ceanothus verrucosus	Wart-stemmed ceanothus	-	-	Yes	CNPS RPR 2B.2	Chaparral.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Centromadia parryi ssp. *australis*	Southern tarplant	-	-	No	CNPS RPR 1B.1	Marshes and swamps (margins), valley and foothill grassland. Often in disturbed sites near the coast at marsh edges.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	-	-	No	CNPS RPR 1B.1	Coastal bluff scrub, coastal dunes.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Chorizanthe orcuttiana	Orcutt's spineflower	FE	SE	No	CNPS RPR 1B.1	Coastal scrub, chaparral, closed-cone coniferous forest. Sandy sites and openings.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Chorizanthe polygonoides var. *longispina*	Long-spined spineflower	-	-	No	CNPS RPR 1B.2	Chaparral, coastal scrub, meadows, valley and foothill grassland. Gabbroic clay.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Comarostaphylis diversifolia ssp. *diversifolia*	Summer holly	-	-	No	CNPS RPR 1B.2	Chaparral.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Cordylanthus maritimus ssp. *maritimus*	Salt marsh bird's-beak	FE	SE	Yes	CNPS RPR 1B.2	Coastal salt marsh, coastal dunes.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Cordylanthus orcuttianus	Orcutt's bird's-beak	-	-	Yes	CNPS RPR 2B.1	Coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Coreopsis maritima	Sea dahlia	-	-	No	CNPS RPR 2B.2	Coastal scrub, coastal bluff scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat	Potential for Occurrence within the Biological Study Area
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	-	-	No	CNPS RPR 1B.1	Coastal scrub, coastal bluff scrub, chaparral.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	-	-	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Deinandra conjugens	Otay tarplant	FT	SE	Yes	CNPS RPR 1B.1	Coastal scrub, valley and foothill grassland.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Dudleya brevifolia	Short-leaved dudleya	-	SE	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Dudleya variegata	Variegated dudleya	-	-	Yes	CNPS RPR 1B.2	Chaparral, coastal scrub, cismontane woodland, valley and foothill grassland.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Dudleya viscida	Sticky dudleya	-	-	Yes	CNPS RPR 1B.2	Coastal scrub, coastal bluff scrub, chaparral.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	-	-	Yes	CNPS RPR 1B.1	Coastal scrub, chaparral.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE	SE	Yes	CNPS RPR 1B.1	Vernal pools, coastal scrub, valley and foothill grassland.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Erysimum ammophilum	Sand-loving wallflower	-	-	Yes	CNPS RPR 1B.2	Chaparral (maritime), coastal dunes, coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Euphorbia misera	Cliff spurge	-	-	No	CNPS RPR 2B.2	Coastal bluff scrub, coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.

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Ferocactus viridescens	San Diego barrel cactus	-	-	Yes	CNPS RPR 2B.1	Chaparral, Diegan coastal scrub, valley and foothill grassland.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Frankenia palmeri	Palmer's frankenia	-	-	No	CNPS RPR 2B.1	Coastal dunes, marshes (coastal salt), playas.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Fremontodendron mexicanum	Mexican flannelbush	FE	SR	No	CNPS RPR 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland. Usually scattered along the borders of creeks or in dry canyons; sometimes on gabbro soils.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Harpagonella palmeri	Palmer's grapplinghook	-	-	No	CNPS RPR 4.2	Chaparral, coastal scrub, valley and foothill grassland. Clay soils.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Heterotheca sessiliflora ssp. *sessiliflora*	Beach goldenaster	-	-	No	CNPS RPR 1B.1	Coastal dunes, coastal scrub, chaparral (coastal).	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Isocoma menziesii var. *decumbens*	Decumbent goldenbush	-	-	No	CNPS RPR 1B.2	Coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Iva hayesiana	San Diego marsh-elder	-	-	No	CNPS RPR 2B.2	Marshes and swamps, playas.	**Moderate potential to occur;** suitable habitat occurs adjacent to the San Diego River; no individuals were observed during the 2015 AECOM field survey. This species is a perennial evergreen shrub and would have been observed if present within the project area. The closest known documented location occurs 3.6 miles to the east of the Project site (CDFW 2015).
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush	-	-	No	CNPS RPR 4.2	Coastal dunes, meadows and seeps, marshes and swamps.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	-	-	No	CNPS RPR 1B.1	Coastal salt marshes, playas, valley and foothill grassland, vernal pools.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.

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Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	-	-	No	CNPS RPR 4.3	Chaparral, coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Lotus nuttallianus	Nuttall's lotus	-	-	Yes	CNPS RPR 1B.1	Coastal dunes, coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Monardella viminea	Willowy monardella	FE	SE	Yes	CNPS RPR 1B.1	Coastal scrub/alluvial ephemeral washes with adjacent coastal scrub, chaparral, or sycamore woodland.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Myosurus minimus ssp. *apus*	Little mousetail	-	-	No	CNPS RPR 3.1	Vernal pools.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Nama stenocarpum	Mud nama	-	-	No	CNPS RPR 2B.2	Marshes and swamps.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Navarretia fossalis	Spreading navarretia	FT		Yes	CNPS RPR 1B.1	San Diego hardpan and San Diego claypan vernal pools, chenopod scrub, marshes and swamps, playas.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Navarretia prostrata	Prostrate vernal pool navarretia	-	-	No	CNPS RPR 1B.1	Coastal scrub, valley and foothill grassland, vernal pools.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Nemacaulis denudata var. *denudata*	Coast woolly-heads	-	-	No	CNPS RPR 1B.2	Coastal dunes.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Nemacaulis denudata var. *gracilis*	Slender cottonheads	-	-	No	CNPS RPR 2B.2	Coastal dunes, desert dunes, Sonoran desert scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Opuntia californica var. *californica*	Snake cholla	-	-	Yes	CNPS RPR 1B.1	Chaparral, coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.

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Orcuttia californica	California Orcutt grass	FE	SE	Yes	CNPS RPR 1B.1	Vernal pools.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Orobanche parishii ssp. *brachyloba*	Short-lobed broomrape	-	-	No	CNPS RPR 4.2	Coastal bluff scrub, coastal dunes, coastal scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Phacelia stellaris	Brand's star phacelia	FC	-	No	CNPS RPR 1B.1	Coastal scrub, coastal dunes.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Pinus torreyana ssp. *torreyana*	Torrey pine	-	-	No	CNPS RPR 1B.2	Closed-cone coniferous forest, chaparral. On dry, sandstone slopes.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Pogogyne abramsii	San Diego mesa mint	FE	SE	Yes	CNPS RPR 1B.1	Vernal pools.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Pogogyne nudiuscula	Otay Mesa mint	FE	SE	Yes	CNPS RPR 1B.1	Vernal pools.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Quercus dumosa	Nuttall's scrub oak	-	-	No	CNPS RPR 1B.1	Closed-cone coniferous forest, chaparral, coastal scrub. Generally on sandy soils near the coast.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Senecio aphanactis	Chaparral ragwort	-	-	No	CNPS RPR 2B.2	Cismontane woodland, coastal scrub. Drying alkaline flats.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Stemodia durantifolia	Purple stemodia	-	-	No	CNPS RPR 2B.1	Sonoran desert scrub.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Streptanthus bernardinus	Laguna Mountains jewel-flower	-	-	No	CNPS RPR 4.3	Chaparral, lower montane coniferous forest. Clay or decomposed granite soils.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.

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Suaeda esteroa	Estuary seablite	-	-	No	CNPS RPR 1B.2	Marshes and swamps. Coastal salt marshes in clay, silt, and sand substrates.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Tetracoccus dioicus	Parry's tetracoccus	-	-	No	CNPS RPR 1B.2	Chaparral, coastal scrub. Stony, decomposed gabbro soil.	**Not expected to occur;** no individuals were observed during the 2015 AECOM field survey. Suitable habitat for this species does not occur within the survey area.
Invertebrates							
Branchinecta sandiegonensis	San Diego fairy shrimp	FE	-	Yes	-	Restricted to vernal pools, hardpan and claypan pools; Orange and San Diego Counties, Baja California. Generally found at elevations between 50 and 410 feet, but up to 1,640 feet.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Streptocephalus woottoni	Riverside fairy shrimp	FE	-	Yes	-	Restricted to deep, large vernal pools with long periods of inundation; San Diego (within 9 miles of the ocean) and Riverside Counties. Generally found at elevations between 100 and 1,360 feet.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Lycaena hermes	Hermes copper	FC	-	No	-	Restricted to San Diego County. Appropriate Hermes copper habitat is continuous stands of mixed chaparral/sage scrub in well-drained soil. This soil type is usually found on canyon bottoms or on hillsides with a northern exposure.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Panoquina errans	Wandering (=saltmarsh) skipper	-	-	Yes	-	Strictly a coastal salt marsh skipper. Marshes with tidal flow are the more likely occupied areas. Found wherever saltgrass grows along the coast and within a tidal saltmarsh environment.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Mitoura thornei	Thorne's hairstreak	-	-	Yes	-	Endemic to a single mountain in southwestern North America, located within the Otay Mountain Wilderness of the San Ysidro Mountains. It is found only in Tecolote cypress habitat.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Fish							
Gila orcutti	Arroyo chub		SSC	No	-	Prefers slow-moving sections of permanent, small to moderate-sized streams with sand or mud substrate with more than half of the habitat as runs and pools ~ 4 inches deep and reaches of permanent water more than 1.2 miles long.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.

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Reptiles and Amphibians							
Rana draytonii	California red-legged frog	FT	SSC	Yes	-	Marshes, slow-moving stream reaches, lakes, reservoirs, ponds, and other usually permanent water sources. It occurs primarily in wooded areas in lowlands and foothills, although it can also be found in grasslands.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Spea hammondii	Western spadefoot toad	-	SSC	No	-	Temporary ponds, vernal pools, and backwaters of slow-flowing creeks. Also upland habitats such as grasslands and coastal sage scrub where burrows are constructed.	**Moderate potential to occur;** species not detected during the 2015 AECOM field survey. Suitable habitat is within the river channel. The closest known documented location occurs 3.9 miles to the east of the Project site (County of San Diego 2015).
Bufo microscaphus californicus	Arroyo toad	FE	SSC	Yes	-	Gravelly or sandy washes, stream and river banks, and arroyos. Also upland habitat near washes and streams such as sage scrub, mixed chaparral, Joshua tree woodland, and sagebrush habitats.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Actinemys marmorata pallid	Southwestern pond turtle	-	SSC	Yes	-	Associated with permanent water or nearly permanent water from sea level to 6,000 feet. Prefers habitats with basking sites such as floating mats of vegetation, partially submerged logs, rocks, or open mud banks.	**Moderate potential to occur;** species not detected during the 2015 AECOM field survey. Suitable habitat exists within the river channel. The closest known documented location occurs 4.6 miles to the east of the Project site (County of San Diego 2015).
Phrynosoma coronatum (*blainvillei*)	San Diego coast horned lizard	-	SSC	Yes	-	A variety of habitats including sage scrub, chaparral, and coniferous and broadleaf woodlands. Found on sandy or friable soils with open scrub. Requires open areas, bushes, and fine loose soil.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Eumeces skitonianus interparietalis	Coronado skink	-	SSC	No	-	Most commonly found in open areas, sparse brush, and in oak woodlands, usually under rocks, leaf litter, logs, debris, or in the shallow burrows it digs.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Typical habitat to support this species is not present. However, immediately adjacent to the river channel may support this species.
Aspidoscelis hyperythra beldingi	Orange-throated whiptail	-	SSC	Yes	-	A variety of habitats including sage scrub, chaparral, and coniferous and broadleaf woodlands. Found on sandy or friable soils with open scrub. Requires open areas, bushes, and fine loose soil.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Typical habitat to support this species is not present. However, immediately adjacent to the river channel may support this species.

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Anniella pulchra pulchra	Silvery legless lizard	-	SSC	No	-	Loose soil in a number of vegetation communities including coastal dunes; chaparral; pine-oak woodland; and streamside growth of sycamores, cottonwoods, or oaks. Small shrubs such as bush lupine (*Lupinus* sp.) growing in sandy soils indicate suitable conditions. Occurs often near intermittent and permanent streams.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Typical habitat to support this species is not present. However, immediately adjacent to the river channel may support this species.
Salvadora hexalepis virgultea	Coast patch-nosed snake	-	SSC	No	-	A variety of habitats including coastal sage scrub, chaparral, riparian, grasslands, and agricultural fields. Prefers open habitats with friable or sandy soils, burrowing rodents for food, and enough cover to escape predation.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Typical habitat to support this species is not present. However, immediately adjacent to the river channel may support this species.
Thamnophis hammondii	Two-striped gartersnake	-	SSC	No	-	Aquatic habitats, preferably rocky streams with protected pools, cattle ponds, marshes, vernal pools, and other shallow bodies of water lacking large aquatic predators.	**High potential to occur;** species not detected during the 2015 AECOM field survey. Suitable habitat is found within and immediately adjacent to the river channel. The closest known recently (i.e., within the last 20 years) documented location is a 2006 occurrence that occurs 4.2 miles to the east of the Project site near Lake Murray (County of San Diego 2015).
Thamnophis sirtalis ssp.	South Coast garter snake	-	SSC	No	-	Utilizes a wide variety of habitats: forests, mixed woodlands, grassland, chaparral, and farmlands, often near ponds, marshes, or streams.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Suitable habitat is found within and immediately adjacent to the river channel; however, this species has become rare in San Diego County. The closest known documented location occurs 17 miles to the northwest of the Project site (County of San Diego 2015).
Crotalus ruber ruber	Red-diamond rattlesnake	-	SSC	No	-	Chaparral, coastal sage scrub, along creek banks, and in rock outcrops or piles of debris. Habitat preferences include dense vegetation in rocky areas.	**Low potential to occur;** no individuals were observed during the 2015 AECOM field survey. Marginally suitable habitat for this species occurs within the patch of Diegan coastal sage scrub near the northeast corner of the survey area.
Birds							
Branta canadensis	Canada goose	-	-	Yes	-	Anywhere near lakes, rivers, ponds, or other small or large bodies of water, and in yards, park lawns, and farm fields.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Typical habitat to support this species is not present. However, at the extreme western end, the golf course may be used by this species.
Egretta rufescens	Reddish egret	-	-	Yes	-	Shallow salt water.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Mycerterua anerucana	Wood stork	-	SSC	No	-	Freshwater marsh and mudflats.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. This species is very rare in San Diego County

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Pelecanus erythrorhynchos	American white pelican	-	SSC	No	-	Breeds in northeastern California, winters throughout central and southern California. Rivers, lakes, estuaries, bays, marshes, and nests usually in brackish or freshwater lake islands.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Pelecanus occidentalis californicus	California brown pelican	-	FP	Yes	-	Common along the coast where they dive for fish. Known to congregate in areas that provide secure roost sites such as coastal bluffs, or man-made structures near fertile fishing grounds. Breeds on dry, rocky offshore islands in northern Gulf of California and along Pacific coast of California and Baja California	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Ixobrychus exilis	Least bittern	-	SSC	No	-	Marsh habitats or large emergent wetlands with cattails (*Typha* sp.) and tules.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may use the habitat within the river channel during migration; however, the river channel is narrow and linear and lacks preferred habitat for this species.
Plegadis chihi	White faced ibis	-	WL	Yes	-	Found in shallow areas of freshwater marshes and wet grass. Colonial nesters, with two known colonies in San Diego County, along Guajome Lake and near a pond in San Luis Rey River valley.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may use the habitat within the river channel during migration; however the river channel is narrow and linear and lacks preferred habitat for this species.
Rallus longirostris levipes	Light-footed clapper rail	FE	SE; FP	Yes	-	Found in southern California in coastal salt marshes, especially those dominated by cordgrass. The Tijuana River estuary is an especially important site.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species is known from approximately 2 miles to the west at the San Diego River flood channel. However, the river channel at this location is narrow and linear and lacks preferred habitat for this species.
Charadrius alexandrinus nivosus	Western snowy plover	FT	SSC	Yes	-	Nests on beaches, dunes, and salt flats in San Diego County, with the highest concentrations in two areas: Camp Pendleton and Silver Strand. Outside the breeding season, species is more widespread but not common along the county's coast.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Numenius americanus	Long-billed curlew	-	WL	Yes	-	Nests primarily in short-grass or mixed-prairie habitat with flat to rolling topography.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Sternula antillarum browni	California least tern	FE	SE; FP	Yes	-	A ground nesting bird that requires undisturbed stretches of beach and coastline. Adults are highly philopatric to natal colonies, and forage in bays and estuaries near their colonies.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.

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Childonias niger	Black tern	-	SSC	No	-	Nests in colonies within marshes.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Sterna elegans	Elegant tern	-	WL	Yes	-	Intensely gregarious. Feeds on offshore fish, principally anchovies.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Rynchops niger	Black skimmer	-	SSC	No	-	Breeds in loose groups on sand banks or bare dirt areas near water sources. May utilize the same habitat as terns.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Laterallus jameicensis coturniculus	Black rail	-	ST; FP	No	-	Found in southern California coastal marshes.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. The species is extirpated from San Diego County (Unitt 2004).
Elanus leucurus majusculus	White-tailed kite	-	FP	No	-	Widespread over the coastal slope of San Diego County preferring riparian woodlands, oak groves, or sycamore groves, adjacent to grasslands.	**High potential to occur;** species not detected during the 2015 AECOM field survey. Suitable foraging and breeding habitat is found within and immediately adjacent to the river channel. The closest known documented location occurs is a 2013 occurrence along the San Diego River approximately 0.6 mile to the east of the Project site (eBird 2015).
Circus cyaneus	Northern harrier	-	SSC	Yes	-	Breeds predominantly in wetland habitats, but will also use upland habitats, grasslands, and agricultural fields. During migration and in winter, the same habitats are preferred.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Accipiter cooperi	Cooper's hawk	-	WL	Yes	-	Inhabits broken woodlands, woodland edges, and streamside groves. Nests in open woodlands or in deciduous trees in riparian areas.	**High potential to occur;** species not detected during the 2015 AECOM field survey. Suitable habitat occurs for this species throughout the area wherever trees and shrubs are located. The closest known documented location occurs 1.2 miles to the northeast of the Project site (County of San Diego 2015).
Buteo regalis	Ferruginous hawk	-	WL	Yes	-	Open country, primarily plains, prairies, badlands, sagebrush, shrubland, and desert.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Buteo swainsoni	Swainson's hawk	-	ST	Yes	-	Large expanses of wildland or rural areas consisting of native or nonnative tree stands for nesting and nearby open fields for foraging.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may use trees throughout the area during migration to roost.
Aquila chrysaetos	Golden eagle	-	FP; WL	No	BGEPA	Nests on cliff ledges and, trees on steep slopes. Hunts for prey in nearby grasslands, sage scrub, or broken chaparral. Requires very large territories.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Haliaeetus leucocephalus	Bald eagle	-	SE; FP	Yes	BGEPA	Nests in old growth trees near the coast or other bodies of water where fish are available.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.

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Falco peregrinus anatum	American peregrine falcon	-	FP	Yes	-	Open areas from tundra, moorlands, steppes, and seacoasts to mountains and open forested regions, especially where there are suitable nesting cliffs.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species has potential to perch and forage throughout all habitats.
Charadrius montanus	Mountain plover	-	SSC	Yes	-	Large expanses of short grassland, rangeland, and plowed fields.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FPT	SE	No	-	Mature and extensive willow-cottonwood riparian forests along the broad lower floodplains of larger river systems.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Habitat present within and adjacent to the river channel is suitable for this species to use during migration. The riparian habitat is not extensive enough to support breeding.
Athene cunicularia	Burrowing owl	-	SSC	Yes	-	Found mainly in grassland and open scrub from the seashore to foothills. Strongly associated with California ground squirrel (*Spermophilus beecheyi*) burrows.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Asio otus	Long-eared owl	-	SSC	No	-	Primarily in dense oak and riparian woodland and at the edges of coniferous forests. Typically nests in trees, often in the abandoned nests of corvids or other raptors.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Cypseloides niger	Black swift	-	SSC	No	-	Nests only around waterfalls and sea cliffs.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. No breeding sites in San Diego County and only occurs as a rare migrant (Unitt 2004).
Chaetura vauxi	Vaux's swift	-	SSC	No	-	A common migrant in San Diego County during migration from wintering grounds to breeding grounds in the northwest.	**Low potential to occur (breeding);** species not detected during the 2015 AECOM field survey. This species is a migrant and does not breed in San Diego County, however, it may forage all habitats during migration.
Empidonax traillii extimus	Southwestern willow flycatcher	FE	SE	Yes	-	Restricted to a few colonies in riparian woodlands scattered throughout southern California. Riparian forests are integral to this species' persistence.	**High (migrant) and moderate (breeding) potential to occur;** species not detected during the 2015 AECOM field survey. This species may use the habitat within the river channel and immediately adjacent during migration. This species has not been documented as breeding in this portion of the San Diego River since prior to 1997 (Unitt 2004). The closest known documented location occurs 2 miles to the southwest of the Project site; however, breeding was not confirmed (USFWS 2015).
Pyrocephalus rubinus	Vermilion flycatcher	-	SSC	No	-	Prefers open riparian woodland, arid lands, and mesquite bosques on desert floodplains. Nests in native trees such as willows and cottonwoods.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species is uncommon in San Diego County. It may use habitat within the river channel, and the golf course at the extreme west end.

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat	Potential for Occurrence within the Biological Study Area
Lanius ludovicanus	Loggerhead shrike	-	SSC	No	-	Uncommon year-round resident of San Diego County. Found in grassland, chaparral, desert, and desert edge scrub, particularly near dense vegetation that it uses for concealing and protecting the nest.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Preferred habitat for this species is not present. However, it may use the area as stopover habitat during migration.
Vireo bellii pusillus	Least Bell's vireo	FE	SE	Yes	-	Riparian woodland with understory of dense young willows or mulefat and willow canopy. Nests often placed along internal or external edges of riparian thickets.	**High potential to occur;** species not detected during the 2015 AECOM field survey. Habitat present within and adjacent to the river channel is suitable for this species to breed and forage. The closest known records occur just south of the Project site in the San Diego River (Figure 5) (CDFW 2015).
Vireo vicinior	Gray vireo	-	SSC	No	-	Chaparral habitats in mountainous areas 3,000 to 5,000 feet in elevation.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present. May occur as a very rare migrant.
Progene subis	Purple martin	-	SSC	No	-	Found throughout the United States but is rare in San Diego County. Restricted to mountain region of San Diego County. Nests in isolated snags with holes.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Riparia riparia	Bank swallow	-	ST	No	-	Inhabits riverbanks and gravel pits where sandy, vertical bluffs are available for the birds to dig their burrows and nest in colonies. Breeding season is from March through April.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Only known colony extirpated from San Diego County and last reported nesting anywhere in southern California was in 1976 (Unitt 2004). This species may occur as a rare migrant.
Campylorhynchus brunneicapillus couesi	Coastal cactus wren	-	SSC	Yes	-	Coastal sage scrub with extensive stands of tall prickly pear or cholla cacti (*Opuntia* sp.).	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Cistothorus palustris clarkae	Clark's marsh wren	-	SSC	No	-	Coastal wetlands and freshwater marsh.	**High potential to occur;** species not detected during the 2015 AECOM field survey. This species may use the habitat within the river channel and immediately adjacent. The closest known documented location occurs 1 mile to the southwest of the Project site (County of San Diego 2015).
Polioptila californica californica	Coastal California gnatcatcher	FT	SSC	Yes	-	Diegan coastal sage scrub dominated by California sagebrush (*Artemisia californica*) and flat-topped buckwheat (*Eriogonum fasciculatum*) below 2,500 feet elevation in Riverside County and below 1,000 feet elevation along the coastal slope; generally avoids steep slopes above 25% and dense, tall vegetation for nesting.	**Low potential to occur;** no individuals were observed during the 2015 AECOM field survey. Marginally suitable habitat for this species occurs within the patch of Diegan coastal sage scrub near the northeast corner of the BSA north of Friars Road.

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat	Potential for Occurrence within the Biological Study Area
Sialia mexicana	Western bluebird	-	-	Yes	-	Frequents open woodlands for foraging, but requires suitable roosting and nesting cavities usually in snags. Availability of snags may limit population density.	**High potential to occur;** species not detected during the 2015 AECOM field survey. All habitat present within the survey area is suitable for this species to breed and forage. This species has been documented in the BSA as recently as 2008 and is documented regularly along the San Diego River (ebird 2015).
Oreothlypis luciae	Lucy's warbler	-	SSC	No	-	Southwestern deserts, especially among cottonwoods and streamside trees and mesquite in washes or canyons.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Dendroica petechia brewsteri	Yellow warbler	-	SSC	No	-	A fairly common summer breeding resident found along mature riparian woodlands consisting of cottonwood, willow, alder, and ash trees. Restricted to this increasingly patchy habitat.	**High potential to occur;** species not detected during the 2015 AECOM field survey. Habitat present within and adjacent to the river channel is suitable for this species to breed and forage. The closest known documented location occurs 2.4 miles to the northeast of the Project site (County of San Diego 2015).
Icteria virens	Yellow-breasted chat	-	SSC	No	-	Riparian woodland, with dense undergrowth.	**High potential to occur;** species not detected during the 2015 AECOM field survey. Habitat present within and adjacent to the river channel is suitable for this species to breed and forage. The closest known documented location occurs 2.4 miles to the northeast of the Project site (County of San Diego 2015).
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	-	-	Yes	-	Grassy or rocky slopes with open scrub at elevations from sea level to 2,000 feet. Occurs mainly in coastal sage scrub.	**Low potential to occur;** no individuals were observed during the 2015 AECOM field survey. Marginally suitable habitat for this species occurs within the patch of Diegan coastal sage scrub near the northeast corner of the survey area.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	-	SE	Yes	-	Locally common in open grassy or weedy areas throughout San Diego County.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Passerculus sandwichensis rostratus	Large-billed savannah sparrow	-	SSC	Yes	-	Found along beaches and shores with marsh habitat.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Ammodramus savannarum perpallidus	Grasshopper sparrow	-	SSC	No	-	Arid grasslands with shrubs.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Piranga rubra	Summer tanager	-	SSC	No	-	Inhabits the Mojave Desert and riparian woodlands that contain dense cotton wood canopy. Winters in the coastal lowlands.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Habitat present within and adjacent to the river channel is suitable for this species to use during migration. The riparian habitat is not extensive enough to support breeding.
Agelaius tricolor	Tricolored blackbird	-	SSC	Yes	-	Freshwater marshes with cattails and other emergent vegetation.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.

Scientific Name	Common Name	Federal Status[1]	State Status[2]	MSCP Covered (Yes/No)[3]	Other Status[4]	General Habitat	Potential for Occurrence within the Biological Study Area
Xanthocephalus xanthocephalus	Yellow-headed blackbird	-	SSC	No	-	Freshwater marshes with cattails and other emergent vegetation, Nests in deeply flooded freshwater marshes.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Mammals							
Choeronycteris mexicana	Mexican long-tongued bat	-	SSC	No	-	In San Diego County, this bat species occurs primarily in urban areas. In Arizona and Mexico, the species is found in deep canyons and in the mountains, foraging in riparian, desert scrub, and pinyon-juniper habitats, in particular on *Yucca* sp.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Eumops perotis californicus	California (western) mastiff bat	-	SSC	No	-	Chaparral, live oaks, and arid, rocky regions. Requires downward-opening crevices.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Nyctinomops femorosaccus	Pocketed free-tailed bat	-	SSC	No	-	Rugged cliffs, rocky outcrops, and slopes in desert shrub and pine oak forests.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Antrozous pallidus	Pallid bat	-	SSC	No	-	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect them from high temperatures.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Lasiurus xanthinus	Western yellow bat	-	SSC	No	-	Found in valley foothills riparian, desert riparian, desert wash, and palm oases. Forages among trees and over water. Roosts in trees.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Nyctinomops macrotis	Big free-tailed bat	-	SSC	No	-	Pinyon-juniper and Douglas fir forests, chaparral and oak forests in rugged, rocky habitats, low-lying arid areas.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Lasiurus blossevillii	Western red bat	-	SSC	No	-	Feeds over grasslands, shrublands, open woodlands, forests, and croplands. Roosts primarily in trees and at times, shrubs, often in edge habitats along streams, fields, or urban areas.	**High potential to occur;** species not detected during the 2015 AECOM field survey. This species may roost and forage within and adjacent to the river channel. The closest known recently (i.e., within the last 20 years) documented location is a 2006 occurrence in the San Diego River approximately 3.7 miles to the northeast of the Project site
Euderma maculatum	Spotted bat	-	SSC	No	-	Occurs in foothills, mountains, grasslands, and deserts in southern California.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	-	SSC	No	-	Typical habitats include early stages of chaparral, open coastal sage scrub, and grasslands near the edges of brush.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. This species may occur as a rare migrant.
Chaetodipus californicus femoralis	Dulzura California pocket mouse	-	SSC	No	-	Slopes covered with chaparral and live oaks.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.

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Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	-	SSC	No	-	Inhabits coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities.	**Low potential to occur;** no individuals were observed during the 2015 AECOM field survey. Marginally suitable habitat for this species occurs within the patch of Diegan coastal sage scrub near the northeast corner of the survey area.
Onychomys torridus ramona	Southern grasshopper mouse	-	SSC	No	-	This species inhabits a variety of low, open and semi-open scrub habitats, including coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub, and annual grassland with scattered shrubs.	**Low potential to occur;** species not detected during the 2015 AECOM field survey. Habitat adjacent to the river channel may be suitable for this species.
Perognathus longimembris pacificus	Pacific pocket mouse	FE	SSC	No	-	Plant communities suitable for the species consist of shrublands with firm, fine-grain, sandy substrates in the immediate vicinity of the ocean. These communities include coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Neotoma lepida intermedia	San Diego desert woodrat	-	SSC	No	-	Common to abundant in Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. Habitat to support this species is not present.
Taxidea taxus	American badger	-	SSC	Yes	-	Coastal sage scrub, mixed chaparral, grassland, oak woodland, chamise chaparral, mixed conifer, pinyon-juniper, desert scrub, desert wash, montane meadow, open areas, and sandy soils.	**Low potential to occur;** no individuals were observed during the 2015 AECOM field survey. Marginally suitable habitat for this species occurs within the patch of Diegan coastal sage scrub near the northeast corner of the survey area and open riparian areas.
Felis concolor	Mountain lion	-	-	Yes	-	Rugged mountains, forests, deserts, and swamps.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. This species may use the river channel.
Odocoileus hemionus fulginata	Southern mule deer	-	-	Yes	-	Coniferous forests, desert scrub, chaparral, and grassland with shrubs.	**Not expected to occur;** species not detected during the 2015 AECOM field survey. This species may use the river channel.

[1] Federal Status: FPT= federally proposed threatened; FC=federal candidate; FT=federally threatened; FE=federally endangered.
[2] State Status: SE=state endangered; ST=state threatened; SR=state rare; SSC=species of special concern; FP=state fully protected; WL=state watch list;
[3] Species with a "yes" are included on the City of San Diego's Multiple Species Conservation Program (MSCP) covered species list (City of San Diego 1997)
[4] Other Status: California Native Plant Society (CNPS) Rare Plant Ranks (RPR):
1A: Plants presumed extirpated in California and either rare or extinct elsewhere
1B: Plants rare, threatened, or endangered in California and elsewhere
2A: Plants presumed extirpated in California, but more common elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which more information is needed (Review List)
4: Plants of limited distribution (Watch List)
BGEPA=Bald and Golden Eagle Protection Act.