# 6. Natural Environment and Open Space

#### **BIOLOGICAL RESOURCES** 6.1

## Vegetation and Habitat

As Mission Valley has been extensively developed, the vast majority of the Planning Area consists of disturbed or developed areas (see Figure 6-1 and Table 6-1). Still, undisturbed areas of vegetation are present, particularly along the San Diego River and Alvarado Creek. Adjacent to the San Diego River, Riparian and Bottomland Habitat as well as Eucalyptus Woodland can be found. Along Alvarado Creek, Riparian and Bottomland Habitat and Diegan Coastal Sage Scrub are present. To a lesser extent, undisturbed vegetation is also present near the northern and southern boundaries of Mission Valley, along the Valley's steep canyon walls. In general, Mission Valley's Grasslands and Scrub and Chaparral are located in these areas.

Most of Mission Valley's undisturbed vegetation is located in San Diego's Multi-Habitat Planning Area, the City's planned habitat preserve. Within the Multi-Habitat Planning Area, development is limited to protect and ensure the viability of "covered" species, as well as to preserve a network of open space and habitat in San Diego.



Vegetation alongside the San Diego River.

#### Category of V

| Disturbed or Develop   |
|--|
| Urban/Developed  |
| Disturbed Habitat  |
| Disturbed Wetland  |
| Intensive Agriculture<br>Chicken Ranches   |
| Riparian and Bottoml   |
| Southern Cottonwoo   |
| Freshwater   |
| Southern Riparian Sci  |
| Riparian and Bottoml   |
| Southern Riparian Fo   |
| Non-Vegetated Chan   |
| Scrub and Chaparral  |
| Diegan Coastal Sage  |
| Chaparral  |
| Bog and Marsh  |
| Coastal and Valley Fre   |
| Cismontane Alkali Ma   |
| Grasslands, Vernal Po<br>Other Herb Commun   |
| Valley and Foothill Gr   |
| Non-Native Grassland   |
| Woodland   |
| Eucalyptus Woodlan   |
| Grand Total  |
| Source: City of San Die<br>2015; County of San Di<br>Service, 2015; National<br>2001-2011; Dyett & Bha |
|  |



### Table 6-1: Vegetation Types

| egetation                    | Acreage | Percentageof<br>PlanningArea |
|------------------------------|---------|------------------------------|
| ped Areas                    | 2,766.0 | 86%                          |
|                              | 2,640.3 | 82%                          |
|                              | 116.4   | 4%                           |
|                              | 8.6     | 0%                           |
| e - Dairies, Nurseries,      | 0.8     | 0%                           |
| nland Habitat                | 266.1   | 8%                           |
| od-Willow Riparian Forest    | 119.4   | 4%                           |
|                              | 49.0    | 2%                           |
| crub                         | 48.9    | 2%                           |
| nland Habitat                | 32.0    | 1%                           |
| orest                        | 11.6    | 0%                           |
| nnel or Floodway             | 5.2     | 0%                           |
|                              | 140.5   | 4%                           |
| Scrub                        | 125.5   | 4%                           |
|                              | 15.0    | 0%                           |
|                              | 23.8    | 1%                           |
| reshwater Marsh              | 22.0    | 1%                           |
| larsh                        | 1.8     | 0%                           |
| ools, Meadows, and<br>nities | 15.0    | 0%                           |
| irassland                    | 11.8    | 0%                           |
| ıd                           | 3.2     | 0%                           |
|                              | 4.5     | 0%                           |
| nd                           | 4.5     | 0%                           |
|                              | 3,215.9 | 100%                         |

ego, 2015; SANGIS Regional GIS Data Warehouse, iego, Planning & Development Services, LUEG-GIS I Hydrology Dataset (NHD) Flowline, Date Range: atia, 2015.



Data Source: City of San Diego, 2015; SANGIS Regional GIS Data Warehouse, 2015. (www.sangis.org); County of San Diego, Planning & Development Services, LUEG-GIS Service, 2015; National Hydrology Dataset (NHD) Flowline, Date Range: 2001 - 2011; Dyett & Bhatia, 2015







#### **Special Status Species**

Special status species are those plants and animals that, because of their acknowledged rarity or vulnerability to various causes of habitat loss or population decline, are recognized in some fashion by federal, state, or other agencies as deserving special consideration. According to records maintained by the California Natural Diversity Database (CNDDB), there are records of five special status species occurring in Mission Valley: coastal California gnatcatcher, least Bell's vireo, San Diego button-celery, San Diego fairy shrimp, and San Diego thorn-mint. Figure 6-2 illustrates the potential occurrence area for the species located within Mission Valley, and Table 6-2 provides details regarding their listing status, presence, and occurrence type.

More detailed analysis of habitat and sensitive plant and animal species are conducted as part of environmental impact analysis of specific projects, and avoidance and/ or mitigation measures are identified to minimize potential impacts. For example, the Quarry Falls Specific Plan, approved in 2008, identified direct impacts to 14.08 acres of sensitive habitat. For that project, the loss of sensitive habitat was mitigated by the purchase of upland habitat credits through the City of San Diego Habitat Acquisition Fund. Potential impacts to the California gnatcatcher were considered less than significant, as the species is adequately protected within the City's MSCP area.

### Table 6-2: Special Status Species

| Common<br>Name                       | Presence               | Occurrence<br>Type               | FederalListing | State Listing |
|--------------------------------------|------------------------|----------------------------------|----------------|---------------|
| Coastal<br>California<br>gnatcatcher | Presumed<br>extant     | Natural/<br>native<br>occurrence | Threatened     | None          |
| Least Bell's<br>vireo                | Presumed<br>extant     | Natural/<br>native<br>occurrence | Endangered     | Endangered    |
| San Diego<br>button-celery           | Possibly<br>extirpated | Natural/<br>native<br>occurrence | Endangered     | Endangered    |
| San Diego<br>fairy shrimp            | Possibly<br>extirpated | Natural/<br>native<br>occurrence | Endangered     | None          |
| San Diego<br>thorn-mint              | Possibly<br>extirpated | Natural/<br>native<br>occurrence | Threatened     | Endangered    |

Source: Data Source: City of San Diego, 2015; SANGIS Regional GIS Data Warehouse, 2015. (www.sangis.org); National Hydrology Dataset (NHD) Flowline, Date Range: 2001 - 2011; California Natural Diversity Database (CNDDB), Biogeographic Data Branch, Department of Fish and Wildlife, 2015; Dyett & Bhatia, 2015.



Coast California gnatcatcher

Least Bell's vireo



San Diego fairy shrimp

### Figure 6-2: Habitat and Potential Areas of Occurrence of Special Status Species



Data Source: City of San Diego, 2015; SANGIS Regional GIS Data Warehouse, 2015. (www.sangis.org); National Hydrology Dataset (NHD) Flowline, Date Range: 2001 - 2011;

California Natural Diversity Database (CNDDB), Biogeographic Data Branch, Department of Fish and Wildlife, 2015; Dyett & Bhatia, 2015







#### 6.2 HYDROLOGY AND FLOODING

Sections 6.2 and 6.3 summarize the findings of the Hydrology and Water Quality Report Existing Conditions Analysis in Support of Environmental Impact Report for Mission Valley Community Plan Update prepared by Rick Engineering for the City of San Diego (2015).

### Hydrology

Surface water bodies within Mission Valley include the San Diego River, Alvarado Creek, Murphy Canyon Creek, and Murray Canyon Creek. Mission Valley is in San Diego River Watershed and entirely within Mission San Diego Hydrologic Subarea. The San Diego Hydrologic Unit Watershed has an area of approximately 440 square miles. It has the highest population (approximately 475,000) of San Diego County's watersheds and contains portions of the cities of San Diego, El Cajon, La Mesa, Poway, and Santee and several unincorporated communities. Mission Valley encompasses the lower 6.5 miles of the San Diego River, and it is the last community that the San Diego River flows through before draining into the Pacific Ocean. Mission Valley's water bodies and watershed are depicted in Figure 6-3.

#### Water Quality

The portion of the San Diego River that is located within Mission Valley is an impaired water body on the Clean Water Act Section 303(d) List of Water Quality Limited Segments. It is subject to Total Maximum Daily Load (TMDL) regulations, which represent the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. The pollutant for the San Diego River is indicator bacteria: fecal coliform, total coliform, and/or enterococcus.



The health of the San Diego River is a both a result of and has an impact on the health of the surrounding community.



Data Source: City of San Diego, 2015; SANGIS Regional GIS Data Warehouse, 2015. (www.sangis.org); National Hydrology Dataset (NHD) Flowline, Date Range: 2001 - 2011; FEMA National Hazard Layer (NFHL), 2014; Rick Engineering, 2015; Dyett & Bhatia, 2015



### Figure 6-3: Hydrology and Flooding





# Flooding

The 100-year floodway, 100-year flood plain, and 500-year flood plain for Mission Valley are delineated by the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate maps and illustrated in Figure 6-3. The primary source of flooding in Mission Valley is the San Diego River; there is also flooding associated with Alvarado and Murphy Canyon creeks. Flooding in Mission Valley can occur during or after heavy rains.

Most road crossings over the San Diego River in Mission Valley are low water crossings, also known as ford crossings. This means that the road is designed to allow crossing the river when the water is low, as when there is no storm event or during small storm events, and to temporarily flood or overtop (convey river flow across the roadway) during large storm events.

San Diego Mission Road, Qualcomm Way, Camino Del Este, Mission Center Road, Avenida Del Rio, and Fashion Valley Road are low water crossings. These roads will be impassable during some storm events. Avenida Del Rio, Fashion Valley Road, and San Diego Mission Road are the most susceptible to flooding. They could be expected to flood in approximately 5-year storm events and greater. Camino Del Este, Qualcomm Way, and Mission Center Road could be expected to flood in approximately 10-year storm events and greater. Ward Road crossing is a bridge rather than a low water crossing; however it is also highly susceptible to flooding. All of these roads have a history of closure by the San Diego Police Department to protect public safety and welfare (see Figure 6-3).

A significant portion of Mission Valley is within a floodway or flood plain. According to FEMA maps, a total of 447 acres are within the 100-year floodway, 304 acres are outside the floodway but within the 100-year flood plain, and an additional 803 acres are within the 500-year flood plain. Figure 6-4 overlays the 100-year floodway and flood plain on the existing Community Plan land use designations. As the map shows, land designated by the existing Community Plan as Public Recreation or Open Space occupies most, although not all, of the 100-year flood way. Likewise, the 100-year flood plain is mostly occupied by land designated for Public Recreation and Open Space. However, it is also occupied by land designated as Commercial Recreation, Office or Commercial Recreation, Multi-Use, and Residential; this is noticeable particularly on the Qualcomm Stadium site and west of SR 163. Currently, there are a number of commercial and residential land uses in the 100-year flood plain. Several hotels, car dealerships, and residential developments occupy this area.

Mission Valley benefits from the First San Diego Improvement Project (FSDRIP; see Section 1.5), which implemented a sustainable and functional 100-year flood control project along the San Diego River, from Qualcomm Way west to SR 163. FSDRIP's flood control improvements include the construction of a flood control channel, institution of buffer zones, and planting and preserving of riparian and upland habitat.

In the future, Mission Valley will see further improvements along the San Diego River, through the proposed construction of Discovery Place, amendments to the Levi-Cushman/Riverwalk Specific Plan and Atlas Specific Plan, and the Community Plan Update. Future improvements to the river corridor may have the effect of changing the floodway or flood plain.

There are several levees along the reach of the San Diego River within Mission Valley. However, because these levee systems are not accredited by FEMA, they cannot be considered to provide flood protection.



1,500

3,000

6,000

EET

\*Note: The Average Daily Trips (ADT) are labeld on the map for the roadwaty currently carrying more than 100,000 vehicles per day. Data Source: City of San Diego, 2015; SANGIS Regional GIS Data Warehouse, 2015. (www.sangis.org)

Dyett & Bhatia, 2015

#### Figure 6-4: Existing Land Use and Floodzones





#### 6.3 STORM WATER INFRASTRUCTURE

Storm water runoff from Mission Valley generally stays within the boundaries of the Planning Area until it drains through storm drain pipes, streets, gutters, cross gutters, or open channels into the San Diego River and from there into the Pacific Ocean. Because Mission Valley is mostly developed and highly impervious—with the exception of the San Diego River channel and Riverwalk Golf Course—nearly all rainfall landing on Mission Valley can be expected to become runoff. Storm drains, an important mechanism for conveying storm water runoff in Mission Valley, are depicted in Figure 6-5.

Mission Valley is also the recipient of storm water from adjacent communities as a result of the surrounding area's topography. Three major creeks—Alvarado Creek, Murphy Canyon Creek, and Murray Canyon Creek—provide major drainage inputs to Mission Valley. These water features are mapped on Figure 6-5.

The City of San Diego maintains adequate drainage facilities to facilitate the removal of storm water runoff in an efficient, economic, environmentally and aesthetically acceptable manner. In order to maintain the storm water system's effectiveness, the City has developed the Master Storm Water System Maintenance Program (Master Program) for storm water channels in neighborhoods across San Diego, including Mission Valley. The Master Program identifies specific storm water channels and detailed methods for maintaining them. Figure 6-5 shows the five stormwater channels within the Planning Area that are maintained under the Master Program.

Storm water pollution affects human life and aquatic plant and animal life. Oil and grease from parking lots and roads, pesticides, cleaning solvents, and other toxic chemicals can contaminate storm water and be transported into water bodies. The city's Storm Water Pollution Prevention Program identifies actions to reduce pollutants in urban runoff and storm water. These actions include, but are not limited to, public education, employee training, water quality monitoring, source identification, code enforcement, watershed management, and Best Management Practices development/implementation within the City of San Diego jurisdictional boundaries. The Storm Water Pollution Prevention Program represents the City on storm water and National Pollutant Discharge Elimination System (NPDES) storm water permit issues before the principal permitted, the County Department of Environmental Health and the Regional Water Quality Control Board. Compliance with the Permit requirements are tracked and monitored by the Storm Water Pollution Prevention Program and the Regional Water Quality Control Board. Further discussion of water quality in Mission Valley can be found in Section 6.2, Hydrology and Flooding.



Rick Engineering, 2015; Dyett & Bhatia, 2015

FEET

#### Figure 6-5: Stormwater Infrastructure



#### URBAN FOREST 6.4

Trees provide shade and beauty, support neighborhood identity, and help balance the density of development with greenery. According to a count conducted in 2012, it is estimated that Mission Valley has approximately 2,076 street trees in its 99 miles of streets. The City's Draft Urban Forest Management Plan estimates that full capacity is significantly greater. Specifically, it estimates that full capacity is one tree planted every 50 feet (on each side of the street), 200 trees per mile of street, or 19,800 street trees total in Mission Valley. The current street tree canopy, as tracked by the City, is illustrated in Figure 6-6. As the map shows, while some stretches of some streets provide a continuous street canopy, many street segments lack trees entirely or have sparse tree plantings. This increases the urban heat island effect (where temperatures in urban area are higher than in surrounding non-urban areas) and provides little respite from the summer sun for pedestrians. It should be noted that the dataset depicted in the figure does not capture Mission Valley's full and complete tree canopy; for instance, the figure does not show trees planted in parks, on private property, or those planted since the data source was last updated.

There is a diverse range of street trees and palms within Mission Valley. These include California sycamore, eucalyptus, sweet gum, pine, Brisbane box, carrot wood, Mexican fan palm, poplar, and jacaranda. The variety and irregularity of the street trees can, at times, create a patchwork effect, where there are a few moments of a consistent and continuous tree canopy. There is an opportunity to strategically select and plant new street trees so that they become a defining characteristic of individual streets and neighborhoods, as well as a wayfinding tool.

The City of San Diego's Street Tree Selection Guide lists recommended trees by size of available planting area, providing a useful guide to homeowners. Some trees found in Mission Valley, such as poplars, are not included in the Selection Guide. Typical trees may not be included because they produce leaf litter, are not suitable to soils, are invasive species, or do not adequately shade the public realm. For example, poplars have extremely invasive roots, and are not generally indicated for planting along city streets.

A number of communities within San Diego have their own Master Street Tree Plans. The plans designate street tree species that are consistent with pre-existing plantings in order to create neighborhood themes, as well as propose future street tree objectives. The Mission Valley Community Plan update provides an opportunity to consider whether a Master Street Tree Plan is appropriate for Mission Valley.



Valley and can provide brilliant fall foliage



Birdseye view looking north. The vast majority of Mission Valley is urban and hardscape. The notable exception is the area surrounding the San Diego River.



Liquidamber styraciflua -sweet gum. This tree is also commonly found in Mission



Patanus racemosa - California sycamore. This native California tree is frequently found



Data Source: City of San Diego, 2015; SANGIS Regional GIS Data Warehouse, 2015. (www.sangis.org); National Hydrology Dataset (NHD) Flowline, Date Range: 2001 - 2011; FEMA National Hazard Layer (NFHL), 2014; Rick Engineering, 2015; Dyett & Bhatia, 2015



### Figure 6-6: Tree Canopy Coverage





#### 6.5 OPEN SPACE AND RECREATION

The Planning Area's existing parks, recreation facilities and open space areas are characterized by the river valley landform they occupy, including the San Diego River and bordering hillsides and canyons (see Figure 6-7). The San Diego River Park Master Plan is the adopted policy document for the enhancement of river resources in Mission Valley and for the development of recreational uses adjacent to the river. Adjacent open space and canyons provide opportunity for trail connections to adjacent communities and to the San Diego River Pathway. The San Diego River Park is defined in the City's general plan as a Resource-Based Park and includes the First San Diego River Improvement Project (FSDRIP), located on both sides of the river between the SR 163 and Qualcomm Way. The project improvements include a multi-use pathway for bicycles and pedestrians, seating, picnicking, and other passive recreation uses.

Open space areas include the Mission Valley Preserve, located within the river on the western end of Mission Valley. The preserve includes interpretive trails, a passive seating and picnic area and a portion of the San Diego River Pathway along the southern edge. Additional city-owned open space is located along the steep south and north facing hillsides and has opportunity for trail connections.



View of the San Diego River toward the ocean.



San Diego River Pathway and Cottonwood Grove picnic area in the Mission Valley Preserve.



Sefton Field is an existing eight-acre neighborhood park that contains four active ballfields, a passive lawn area, concession stand, parking, and a portion of the San Diego River Pathway. This is the only active recreation park facility in the community.



Dyett & Bhatia, 2015

#### Figure 6-7: Parks, Recreation and Open Space