6. Natural Environment and Open Space

6.1 BIOLOGICAL RESOURCES

Vegetation and Habitat

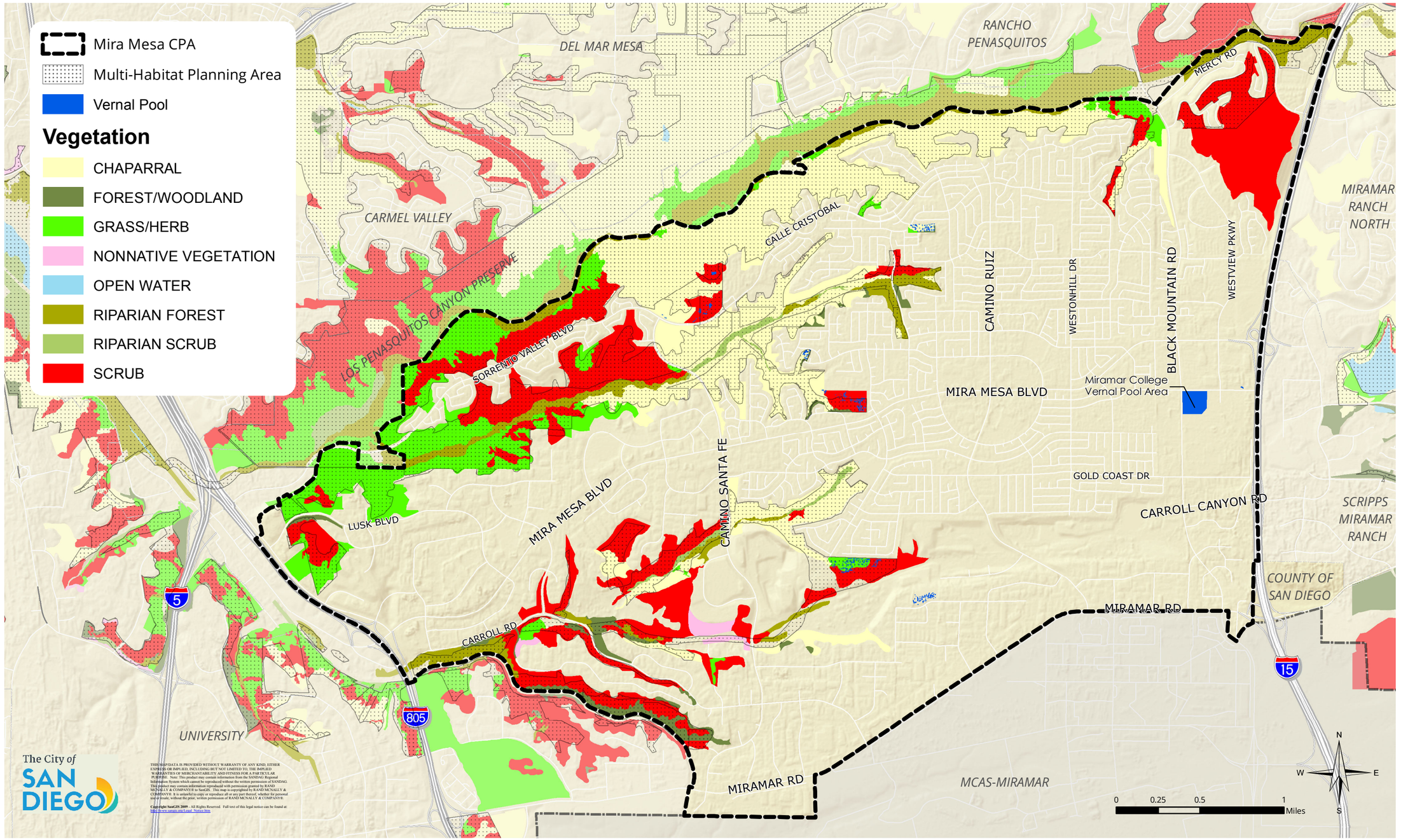
As Mira Mesa's has been extensively developed, the vast majority of the Planning Area consists of disturbed or developed areas (see Figure 6-1). Still undisturbed areas of vegetation are present, particularly along the Lost Peñasquitos Canyon and Lopez Canyon. Most of Mira Mesa's undisturbed vegetation 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.

Vernal Pool

Vernal pools are depressions in the soil that fill with water during the winter rainy season. The pools create a unique habitat that contains several rare and endangered plant species. The City has adopted the Vernal Pool Habitat Conservation Plan (VPHCP). The VPHCP provides a framework to protect, enhance, and restore vernal pool resources. The North VPHCP planning unit is north of SR 52. Mesa tops containing vernal pools in this area include Carmel Mountain, Del Mar Mesa, and Mira Mesa.

Entrance to Los Peñasquito Canyon

Figure 6-1: Vegetation and Multi-Habitat Planning Area



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 seven endangered species occurring in Mira Mesa: coastal dunes milk-vetch, least Bell's vireo, San Diego button-celery, San Diego fairy shrimp, San Diego thorn-mint, willowy monardella, Del Mar manzanita. Figure 6-2 illustrates the potential occurrence area for the species located within Mira Mesa, and Table 6-2 provides details regarding their listing status 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.

Table 6-2: Special Status Species

Common Name	Occurrence Type	Federal Listing
Coastal Dunes milk-vetch	Natural/native occurrence	Endangered
Least Bell's vireo	Natural/native occurrence	Endangered
San Diego button-celery	Natural/native occurrence	Endangered
San Diego fairy shrimp	Natural/native occurrence	Endangered
San Diego mesa-mint	Natural/native occurrence	Endangered
Willowy Monardella	Natural/native occurence	Endangered
Del Mar manzanita	Natural/native occurence	Endangered

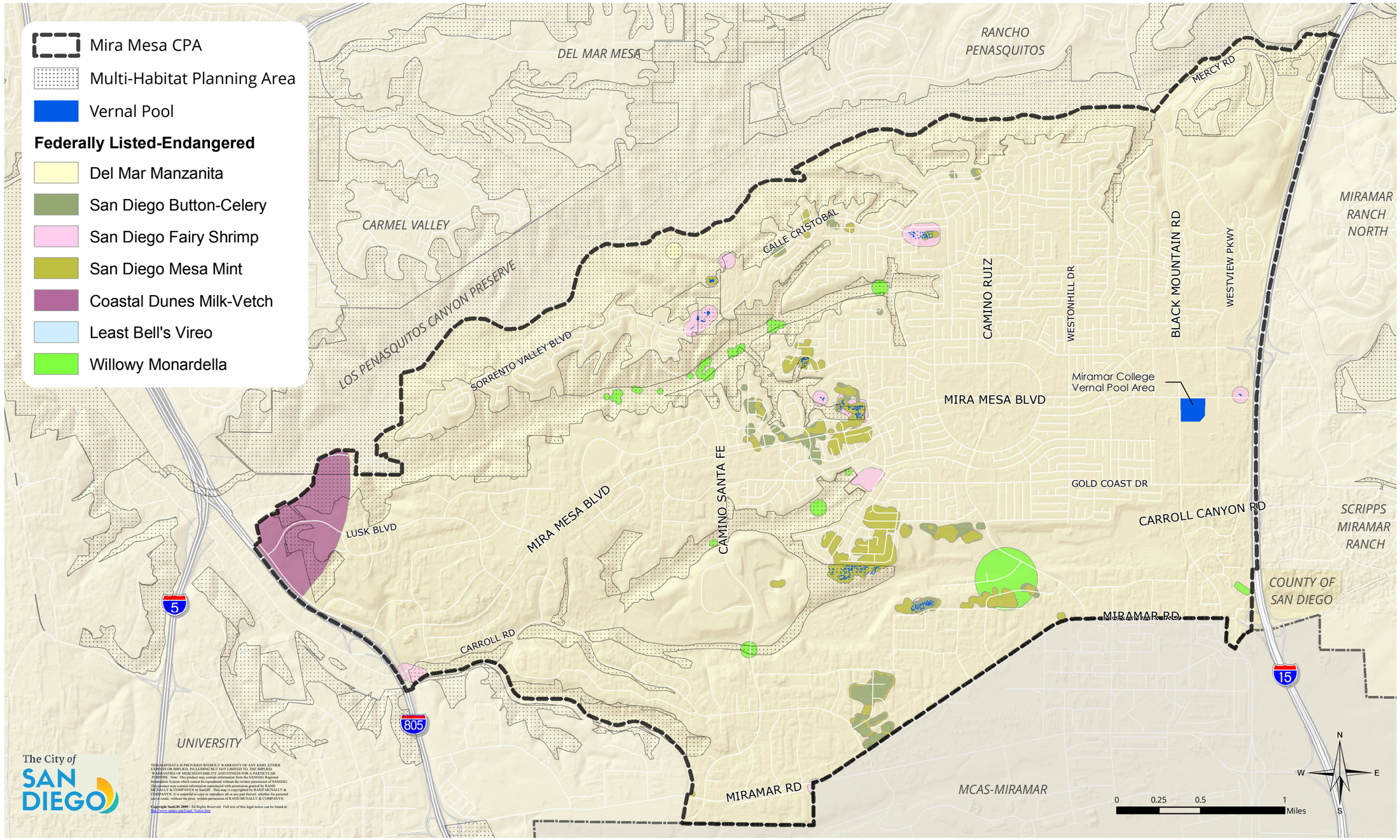
Data Source: City of San Diego, 2018; SANGIS Regional GIS Data Warehouse, 2018. (www.sangis.org); National Hydrology Dataset (NHD) Flowline, Date Range: 2001 - 2011; California Natural Diversity Database (CNDDB), Biogeographic Data Branch, Department of Fish and Wildlife, 2018.

Del Mar manzanita

Least Bell's vireo

San Diego fairy shrimp

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



6.2 HYDROLOGY, FLOODING AND WILDFIRE

Hydrology

Mira Mesa is entirely within Los Penasquitos Watershed Management Area (WMA). There are two Hydrologic Subarea Miramar Reservoir and Poway Subareas. The Los Peñasquitos WMA has an area of approximately 94 square miles, making it the second smallest WMA in San Diego County. It has a population of 260,000 and contains portions of the cities of San Diego, Poway, and Del Mar. Rainfall to the area primarily drains through Los Peñasquitos Creek, which stretches east to west and originates near the City of Poway. The creek eventually discharges to the Pacific Ocean near the community of Del Mart at the Los Peñasquitos Lagoon. The WMA also supplies locals with potable water sourced from Miramar Reservoir, which store mainly Colorado River water, owned and operated by the City of San Diego.

Flooding

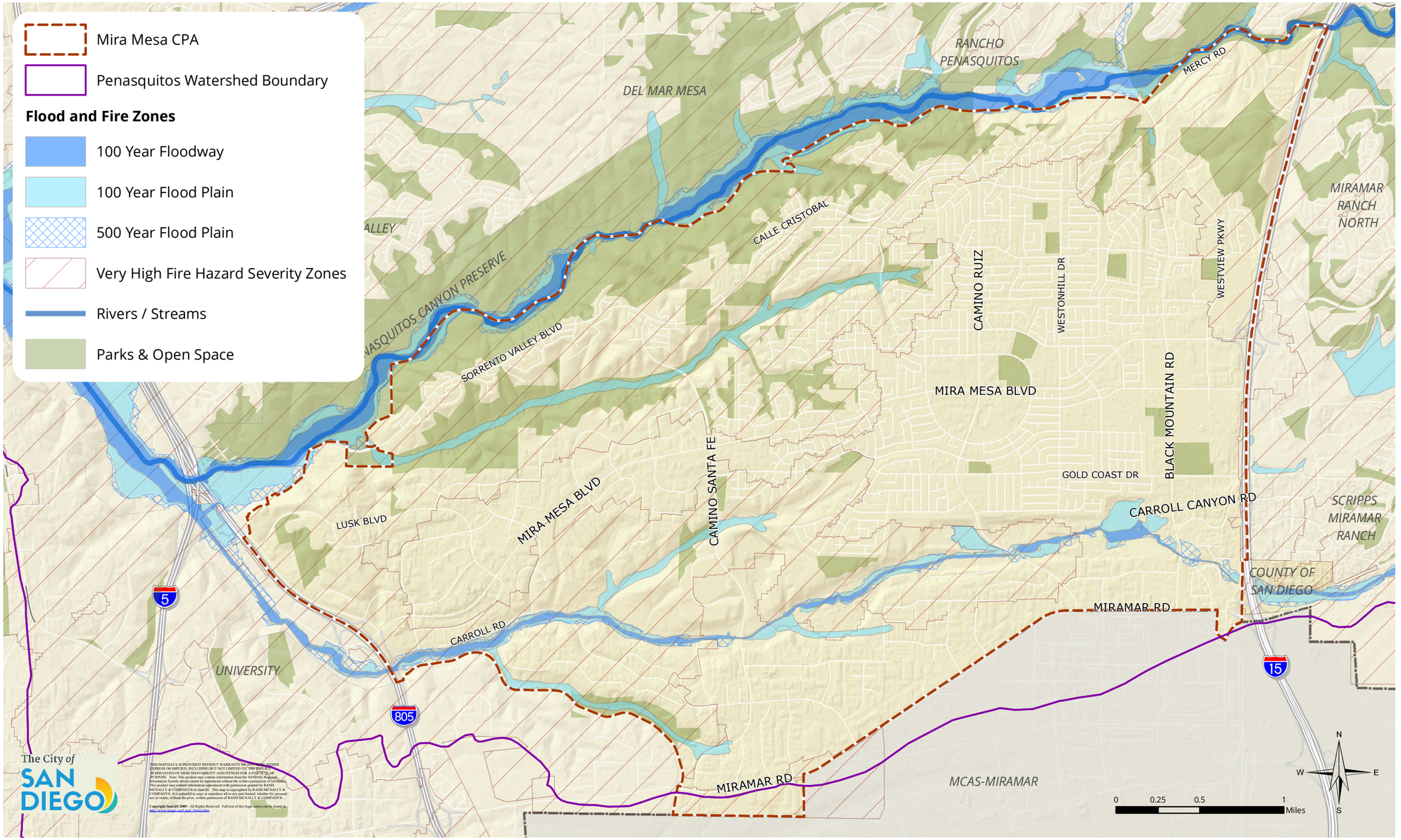
The 100-year floodway, 100-year flood plain, and 500-year flood plain for Mira Mesa are delineated by the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate maps and illustrated in Figure 6-3. Mira Mesa sits on a mesa top, providing unobstructed views of the surrounding communities from certain properties. In addition, canyon areas provide open space and visual relief from the built environment. This topographic position also has value in containing hydrologic and flooding issues in the community. Floodways and floodzones are primarily limited to the canyon areas.

Wildfire

Portions of the community generally near naturally-vegetated open spaces are identified as being within a Very High Fire Hazard Severity Zone by CAL FIRE due to potential hazard from wildland fires. Residents of these areas should take additional measures to be prepared for threat of wildland fire. The San Diego Fire-Rescue Department provides information that should be used when safeguarding homes and responding during a fire emergency.

Trees in floodway

Figure 6-3: Hydrology, Flooding and Wildfire



6.3 STORM WATER INFRASTRUCTURE

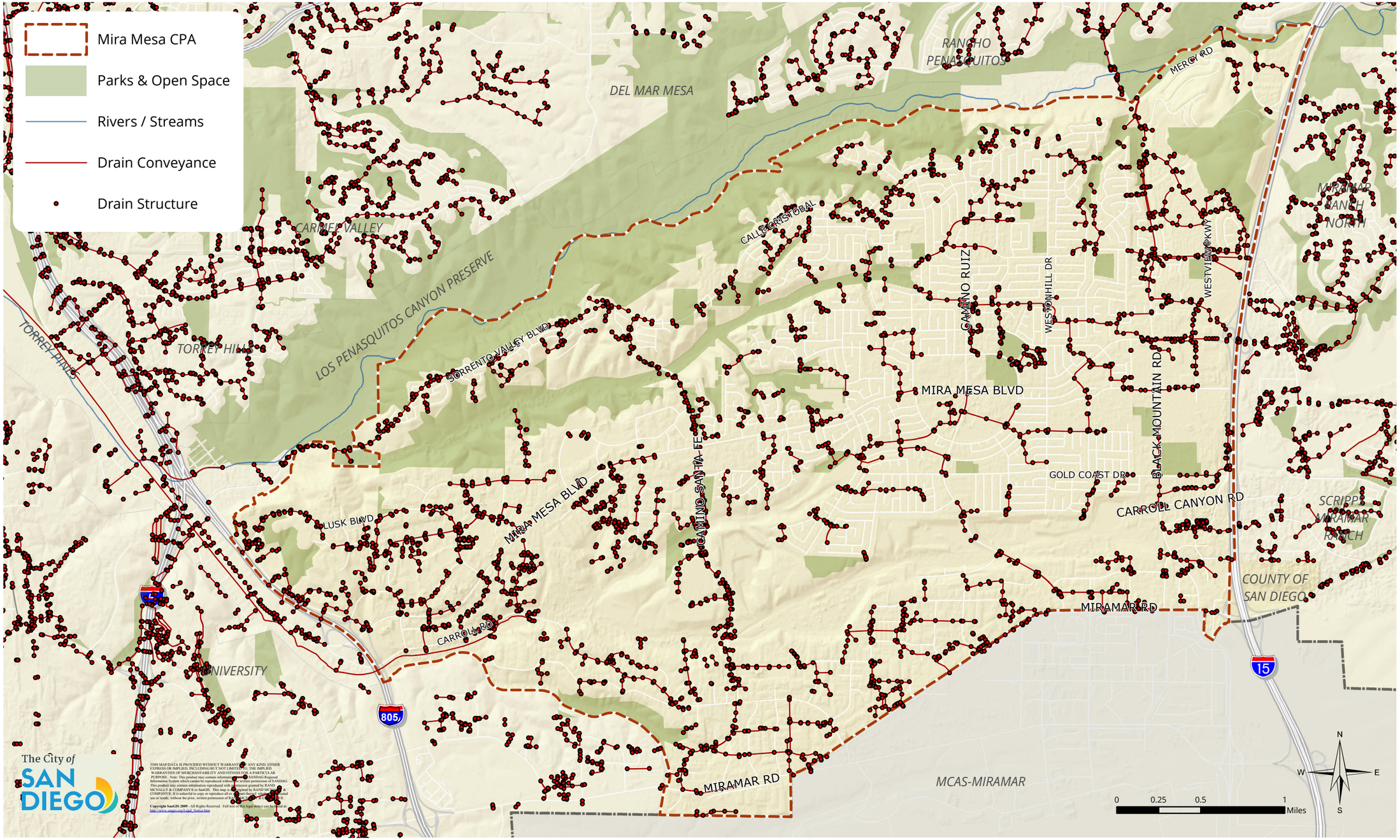
Storm water runoff from Mira Mesa generally stays within the boundaries of the Planning Area until it drains through storm drain pipes, streets, gutters, cross gutters, or open channels into the Los Penasquitos Creek and from there into the Pacific Ocean. Because Mira Mesa is mostly developed and highly impervious—with the exception of the Canyons—nearly all rainfall landing on Mira Mesa can be expected to become runoff. Storm drains, an important mechanism for conveying storm water runoff in Mira Mesa, are depicted in Figure 6-4.

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 Mira Mesa. The Master Program identifies specific storm water channels and detailed methods for maintaining them. The City's Fiscal Year 2017-2021 Five-Year Capital Infrastructure Planning Outlook, outlines an estimated $4.24 billion capital infrastructure needs exist over the next five fiscal years. An estimated additional $1.2 billion would be required to meet all of the needs outlined.

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.

Drainage

Figure 6-4: Stormwater Infrastructure



6.4 URBAN FOREST

Trees provide shade and beauty, support neighborhood identity, and help balance the density of development with greenery. The current street tree canopy, as tracked by the City, is illustrated in Figure 6-5. 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.

Healthy trees mean healthy people. Trees remove many pollutants from the atmosphere, including nitrogen dioxide, sulfur dioxide, ozone, carbon monoxide, and particulate matter.

Each year, 100 large, mature trees have the potential to:

- Remove 7 tons of carbon dioxide; 328 pounds of other air pollutants; and catch approximately 215,000 gallons of rainwater.

Healthy trees mean healthy communities. Statistics show that tree-filled neighborhoods are:

- Safer and more sociable; and help to reduce body and mind stress.

Healthy trees mean better business. In tree-lined business districts, shoppers report:

- More frequent shopping, longer shopping trips, and a willingness to pay more for parking.

Finally, healthy trees mean homeowner savings. One well-placed large shade tree can provide an average savings of $9 on home air conditioning costs each year. Street trees provide enormous cooling benefits for people that walk, bike, skate, and scoot.

Tree canopy provide shade on a hot day

Birdseye view looking north. The vast majority of Mira Mesa is suburban hardscape.

Sycamore on Maya Linda Road

Figure 6-5: Tree Canopy Coverage