



CITY OF OCEANSIDE

SEPTEMBER 2020

# SOUTH MORRO HILLS COMMUNITY PLAN MAP ATLAS



Prepared for



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# SOUTH MORRO HILLS

AGRICULTURAL REGION  
OCEANSIDE

1

# INTRODUCTION



## 1.1 INTRODUCTION

### PURPOSE OF MAP ATLAS

The South Morro Hills Community Plan Map Atlas presents spatial information on existing conditions, opportunities, and challenges in the South Morro Hills community in the City of Oceanside. South Morro Hills encompasses a 5.5-square mile (3,500 acres) area of agriculturally zoned land in the northeast corner of Oceanside. The area has a rich history of farming and is known to produce a variety of agricultural goods including avocados, tomatoes, strawberries, cut flowers, and succulents, as well as wholesale nurseries. It is one of the last remaining agricultural communities in San Diego County west of Interstate 15 (I-15).

The atlas focuses on physical resources and constraints, transportation, infrastructure, market conditions, and other key concerns that will frame choices for the long-term physical development of the area as part of the South Morro Hills Community Plan (South Morro Hills).

In recent years, Oceanside's farming community has indicated it has become more difficult and less profitable to farm due to cost of water, labor, and pricing pressures resulting from increased agricultural imports and global competition. The City, in partnership with Visit Oceanside and the South Morro Hills Association, initiated an Agritourism Strategic Plan to promote agritourism as a way to provide supplemental income for farmers to keep them farming. "Agritourism" is tourism related to agriculture, including facilities and activities like farm stands, agricultural festivals, pick-your-own produce, tasting rooms, farm stays and hotels.

The South Morro Hills Community Plan,

preparation of which is being undertaken concurrently with the Oceanside General Plan update, will contain policies and planning guidance specific to South Morro Hills' unique context and will focus on supporting the continued viability of farming, including through expanded agritourism opportunities.

Using a baseline of 2020 existing conditions, this Map Atlas will be used as a foundation for:

- Facilitating community input on planning issues, priorities, and visions for the future;
- Evaluating policy issues and options, and evaluating land use, infrastructure, and transportation strategies;
- Formulating policies and implementation actions for the South Morro Hills Community Plan; and
- Creating the environmental setting portion of the Environmental Impact Report for the South Morro Hills Community Plan.





## 1.2 SETTING AND PLANNING AREA

### OVERVIEW

South Morro Hills (South Morro Hills) is located in the northeast corner of Oceanside and represents the largest contiguous agricultural district in San Diego County west of I-15. Figure 1-1 shows the area's regional setting. The South Morro Hills Community Plan Area ('Planning Area') is generally bordered by the unincorporated rural communities of Fallbrook to the north, Bonsall to the east, Marine Corps Base Camp Pendleton to the northwest, the Greens to the west, and the Lower San Luis Rey River to the south, as shown in Figure 1-2.

This farming community accommodates both large-scale commercial farming operations as well as smaller and mostly avocational farming enterprises, and is known to produce a variety of agricultural goods including ornamentals, avocados, strawberries, tomatoes, herbs, wine grapes, coffee, and a variety of other crops. In addition to agricultural uses, several riding stables, small family farms and estate homes on large lots are also present in the area.

### HOUSING, EMPLOYMENT, AND DEMOGRAPHICS

The Planning Area contains about 180 housing units, built mostly in two waves – about half of the stock built in the 1970s and 80s, and more than a third built in the 1990s and 2000s. The South Morro Hills Association, an organization with over 140 members formed in 1977, represents many of these property owners, and outlines protection of a rural lifestyle as one of its goals.

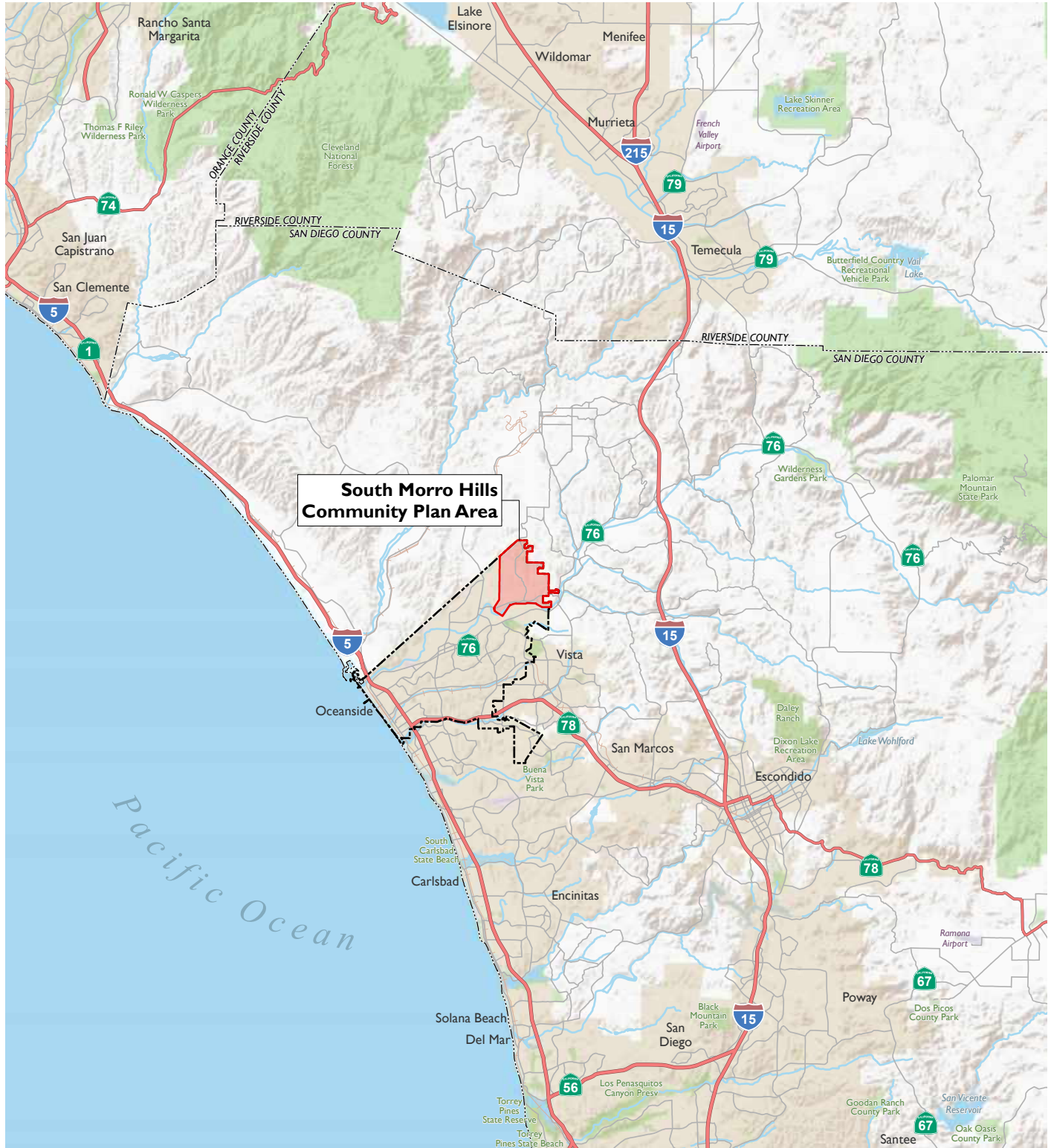
Most of the 150 employed residents of South Morro Hills are white (86 percent) and have some college education (50 percent). The two largest individual industry segments for employed South Morro Hills residents (who could be employed in South Morro Hills or elsewhere) are retail trade (14 percent) and manufacturing (13 percent).

In 2017, there were 280 jobs in the Planning Area, with the vast majority (96 percent) in the agricultural sector. Fifty-three percent of workers in the area identify as Latino, and more than a

quarter (27 percent) have less than a high school degree. More than three quarters travel from outside the City of Oceanside to work in the South Morro Hills community. While 44 percent travel distances of less than ten miles, 31 percent of South Morro Hills workers travel more than 50 miles, usually from areas surrounding Los Angeles or Riverside County.

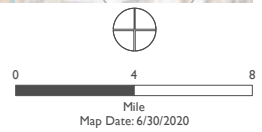


**FIGURE 1-1: Regional Context**

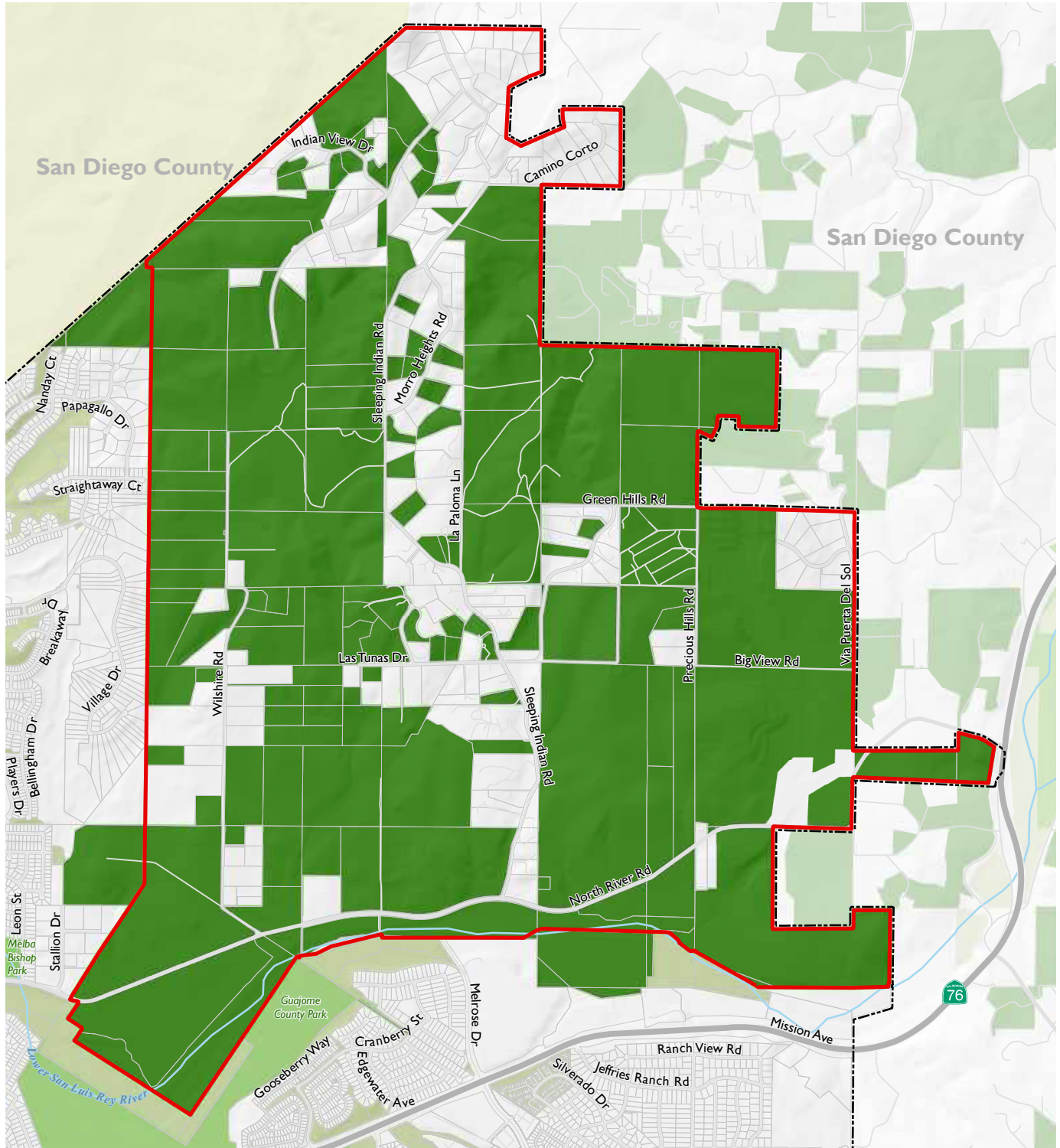


Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020; Esri, USGS, NOAA

- South Morro Hills Community Plan Area
- Highway
- Parks and Open Space
- City of Oceanside
- Railroads
- Water
- Cities
- Airports
- River/Creek
- Counties

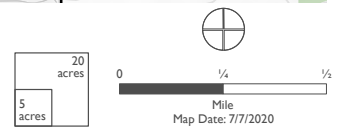


**FIGURE 1-2: Planning Area**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

-  South Morro Hills Community Plan Area
-  City of Oceanside
-  Park
-  Agriculture
-  Open Space
-  Military Training
-  River/Creek



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# 2 LAND USE



## 2.1 EXISTING LAND USE

### LAND USE PATTERN

The South Morro Hills Planning Area’s existing land use pattern reflects its rural character. Figure 2-1 and Table 2-1 show the extent of existing land uses in the community. The Planning Area is nearly 3,440 acres, or 5.4 square miles in area. The largest single existing land use is Agriculture, comprising 76 percent of the area. A detailed distribution of crops and agricultural products grown in the area is provided in Chapter 4 of this Map Atlas. Rural Residential uses, which include single-family detached homes, comprise approximately 19 percent of the area and occur in a patchwork along the north-south Sleeping Indian Road corridor, along the southern portion of Wilshire Road, in the northernmost portion of the Planning Area, south of Straightaway Court in the west, and in the northern portion of Via Puerta Del Sol. Most of these homes are on 2.5-acre or larger parcels. A few parcels used for utilities in the north include water tankards. Vacant parcels (comprising two percent of the plan area land use) are located in the north, along North River Road. Roads and right of way comprise the remaining three percent of the Planning Area.

There are no commercial land uses in South Morro Hills; the closest shopping centers outside of this community are the River Village Plaza in Bonsall and the shopping area located around Highway 76 at College Boulevard in Oceanside. To the west of South Morro Hills is the Greens neighborhood, consisting of single-family on a cul-de-sac sheet network surrounded by the Arrowood Golf Course. To the south, the area is bordered by Guajome County Park, open space and additional agricultural uses, and the Mission Vista High School.

**TABLE 2-1: Existing Land Use**

	Acreage	Percent
Agriculture	2,620	76.2%
Rural Residential	643	18.7%
Utilities	7	0.2%
Road/Right of Way	91	2.7%
Vacant	77	2.2%

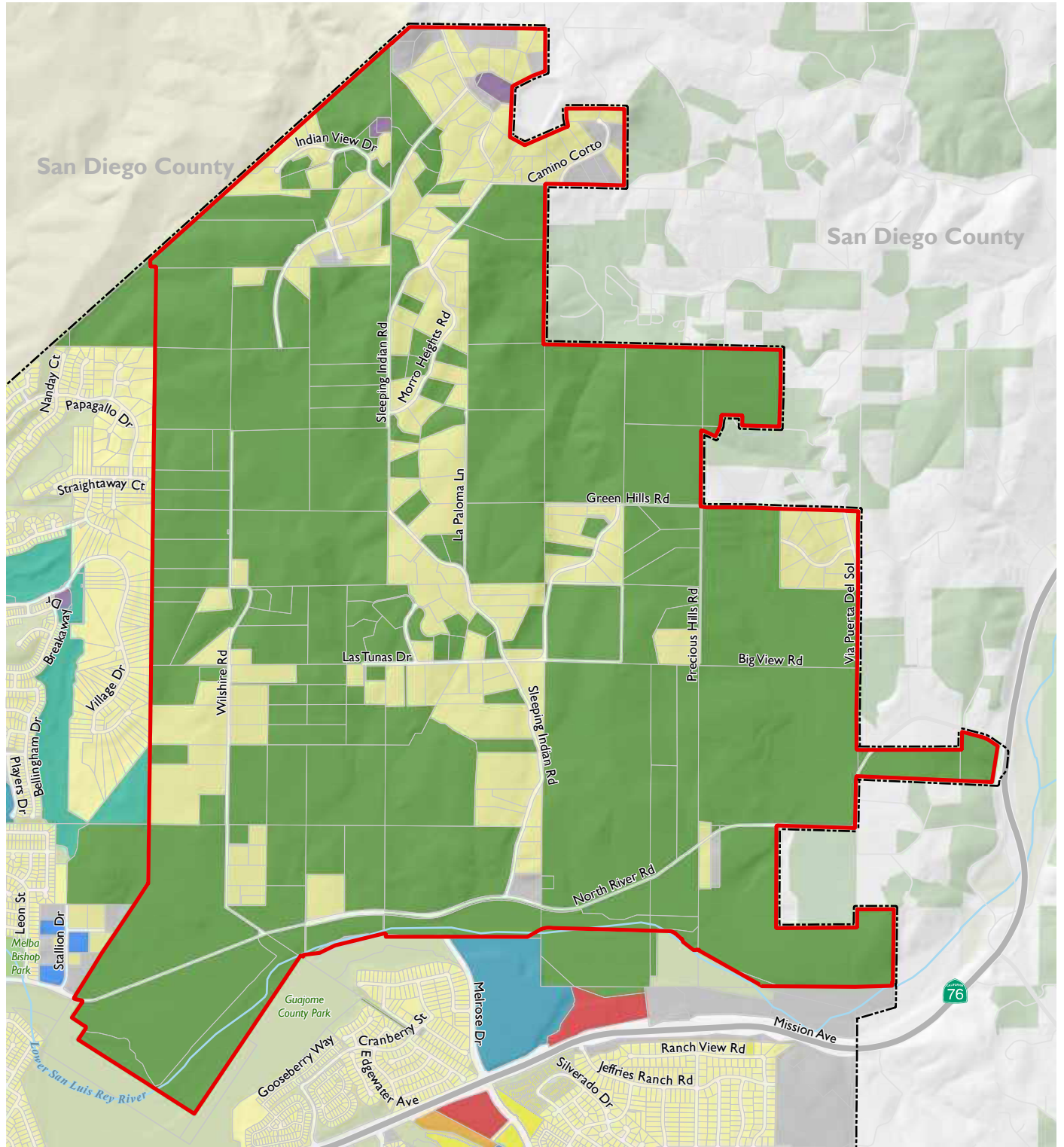
Source: SANGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020.

### DEVELOPMENT PIPELINE

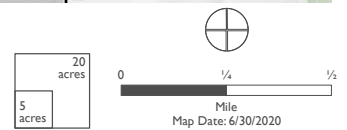
As of 2020, there are two residential projects in the development pipeline – the Bree Property, entitled for two housing units and the 215-acre North River Farms Planned Development, which includes an agriculture-focused residential community of about 600 homes, a 68-acre working farm, and other agriculture-focused amenities, which was approved in November 2019.

During the North River Farms approval process, concerns were raised regarding conversion of agricultural land and impacts of extending urban infrastructure into the area. In response, the City Council directed staff to prepare an Ordinance for Council consideration, which prohibited further development in South Morro Hills beyond what is permitted in the existing General Plan and Zoning until a community plan is prepared, and required staff to develop and present a South Morro Hills Community Plan to Council by November 2020.

**FIGURE 2-1: Existing Land Use**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020



## 2.2 CURRENT GENERAL PLAN

The Oceanside General Plan is the primary long-range planning and policy document to guide growth and preserve quality of life in Oceanside. The plan contains 10 elements, many adopted in the 1970s, although some have been updated and adopted more recently due to changes in State law or reflect new City initiatives. The first phase of the City of Oceanside's General Plan Update was completed on May 8, 2019, when the City Council voted unanimously to adopt the Economic Development Element, Energy and Climate Action Element, and the Climate Action Plan. As this phase of the General Plan Update proceeds, it will be essential to ensure that all components of the General Plan are aligned and focused on a common vision for the city's future.

Under the existing General Plan, the entirety of the Planning Area is designated as Agricultural (A), with the exception of the North River Farms property, as shown in Figure 2-2. In 2019, the City Council approved a change in land use designation of North River Farms to allow open space, single-family and medium-density residential, commercial, and agricultural uses. While the Agricultural designation is primarily intended for farming, single-family residences are permitted as long as the development does not interfere with agricultural activities and the area's open space character. The General Plan also emphasizes consideration of loss of agricultural land due to conversion, as well minimization of land use conflicts, especially between residential uses and working agriculture. As the General Plan elements are updated, the City will need to balance the need to identify and accommodate locations for new housing with efforts to preserve agriculture and support agritourism uses.

## 2.3 CURRENT ZONING

Zoning is a key tool used to implement a city's land uses. The City of Oceanside's Zoning Ordinance stipulates permitted uses, intensity of development, and site and architectural design requirements. The entirety of the South Morro Hills Planning Area is zoned for agriculture, and as noted above, the zoning allows for parcels to be subdivided into lots with a minimum size of 2.5

acres, developed with one single-family residence per parcel.

The 2017 Agritourism Plan found that the lack of zoning flexibility to fit farm operations into lands available for agriculture could limit agritourism expansion. In 2018, the City Council approved the amendments to the Zoning Ordinance to introduce agritourism and Tier 1 activities, comprised of lower-intensity and lower investment uses such as U-Pick operations, petting zoos, farm stands, and small bed and breakfasts.

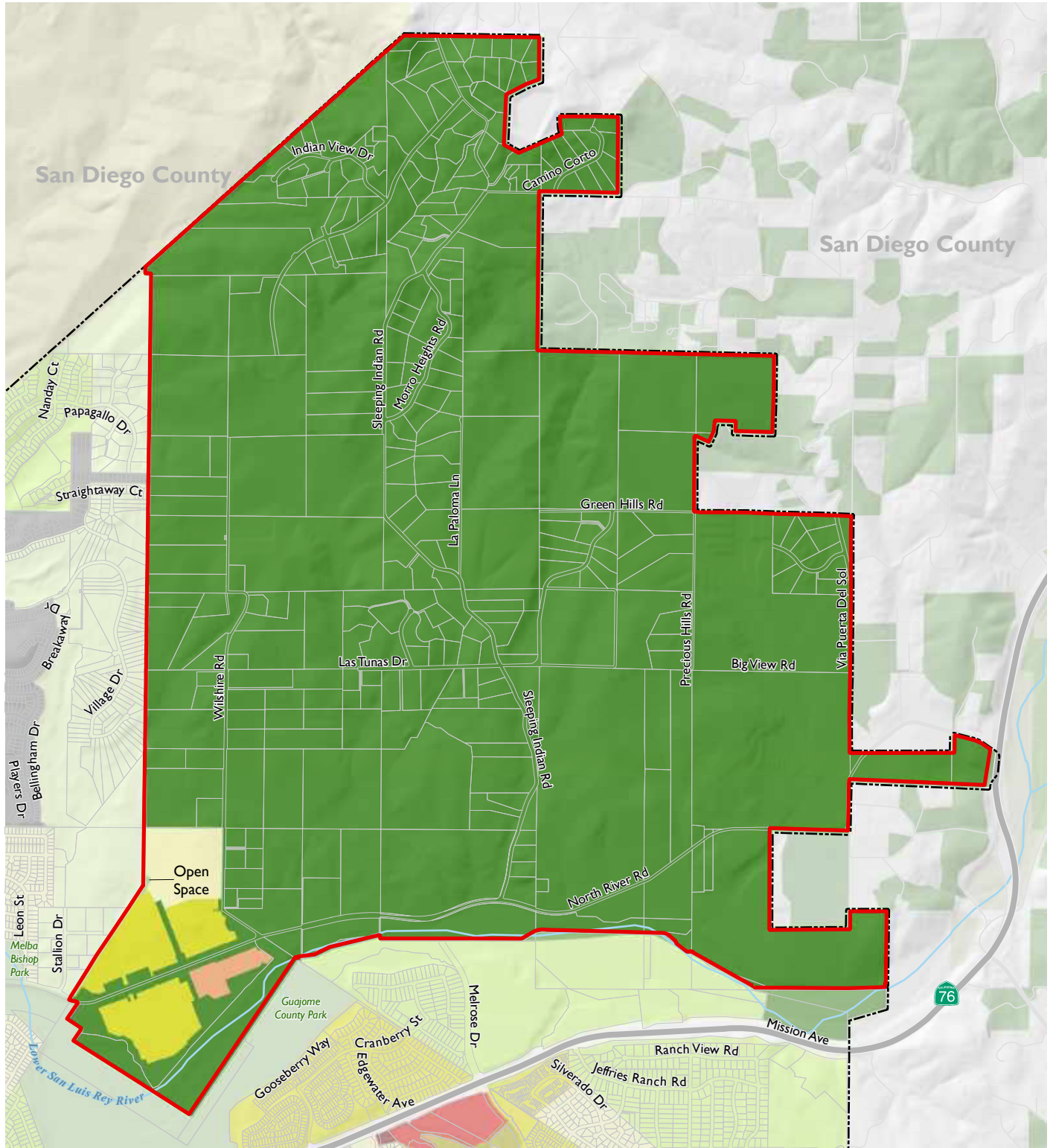
As outlined in the current Zoning Ordinance, the Agricultural District classification is intended to provide of a suitable classification for large-scale agricultural and mining operations and related open space uses; allow agritourism uses incidental and compatible with agricultural operations (considered Tier 1 uses); limit non-agricultural uses to those incidental to agricultural operations; and permit only very low-density residential development, compatible with low-intensity agriculture and keeping of livestock.

The SMHCP will examine how the City can plan for Tier 2 uses, which include higher-intensity and higher-investment uses that may require additional public infrastructure, like hotels, festivals, and larger retail operations to sell farm products, in a way that is sensitive to the agricultural context, supportive of farmers, and beneficial to the community as a whole. This may include evaluation of location of housing to maintain the area's visual character, clustering housing to protect agricultural land, and extension of wastewater and other services to the area. The SMHCP will also seek to address how agritourism uses can minimize impacts such as noise or traffic that have the potential to negatively affect quality of life or agricultural viability.





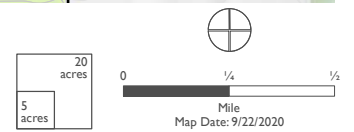
**FIGURE 2-2: General Plan Land Use Designations**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

- Single Family Detached Residential (3.6-5.9 du/ac)
- Medium Density A- Residential (6.0-9.9 du/ac)
- Special Commercial/ Medium Density B- Residential (10-15.0 du/ac)
- Agricultural
- Open Space

- South Morro Hills Community Plan Area
- City of Oceanside
- Military Training
- River/Creek



## 2.4 TOPOGRAPHY AND VISUAL CHARACTER

### TOPOGRAPHY

South Morro Hills' natural beauty is regarded as one of its greatest assets. The varied, scenic topography includes rolling hills, streambeds, and rock outcroppings, including the ridgeline commonly known as the "Sleeping Indian", which runs along Sleeping Indian Road and rises to elevations over 500 feet (shown in Figure 2-3). Sweeping, expansive views of the hills to the north are punctuated with working fields of row crops, orchards and vineyards, ancillary farming structures such as greenhouses and sheds, and estates on larger lots. In the southern part the Planning Area, the San Luis Rey riverbed lies on a plain that gently slopes northward, and the adjacent riparian landscape provides a buffer to more developed uses to the south.



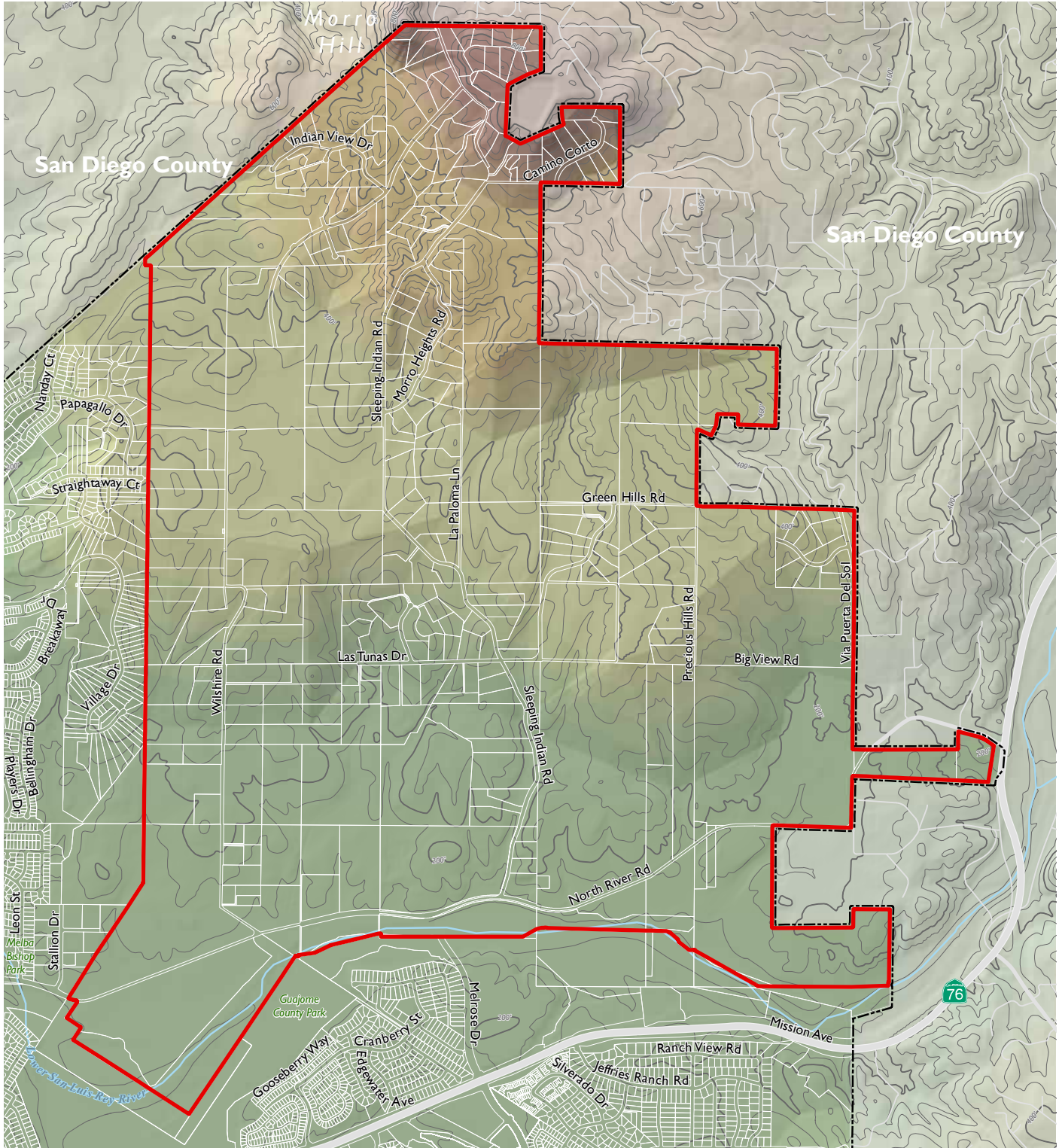
### VISUAL CHARACTER

While most main thoroughfares are paved, some dirt access roads provide farm connections. Infrastructure like traditional sidewalks, streetlights, and traffic lights is limited. As noted in the Agritourism Strategic Plan, maintaining open space and the ambiance of the area provides intrinsic and real economic value to those who live in the South Morro Hills region, as well as the rest of Oceanside. Development of the Community Plan would need to consider how development techniques such as clustering, ridgeline preservation, and other strategies can be used to preserve views and the landscape. The plan will also need to balance the preservation of the area's rural character and farming operational needs with infrastructure to support agritourism and the visitor experience, especially for Tier 2 agritourism operations.

### SLOPE

The Planning Area's varied topography also includes several steep slopes, usually defined as slopes with grades of 15 percent or higher. As shown in Figure 2-4, much of the area meets this criterion. There are several steeply-sloped areas with grades over 50 percent in the north along the Sleeping Indian ridgeline, Wilshire Road, east of Morro Heights Road, and perpendicular to Green Hills Road. Steep slopes invariably present limitations to development, including, building, utilities and road construction, and septic effluent disposal challenges. While good design, engineering, and sound construction practices influence suitability of steeply sloped land for development, the costs of design and construction to overcome slope challenges can become prohibitive, and can also significantly alter the visual character of the area. The Community Plan will consider these implications for development and supporting infrastructure as part of any potential land use changes, siting, and strategies to mitigate geotechnical risks.




**FIGURE 2-3: Topography**

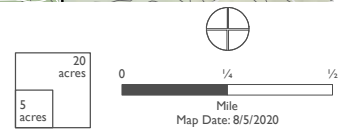


Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

**Elevation in Feet**

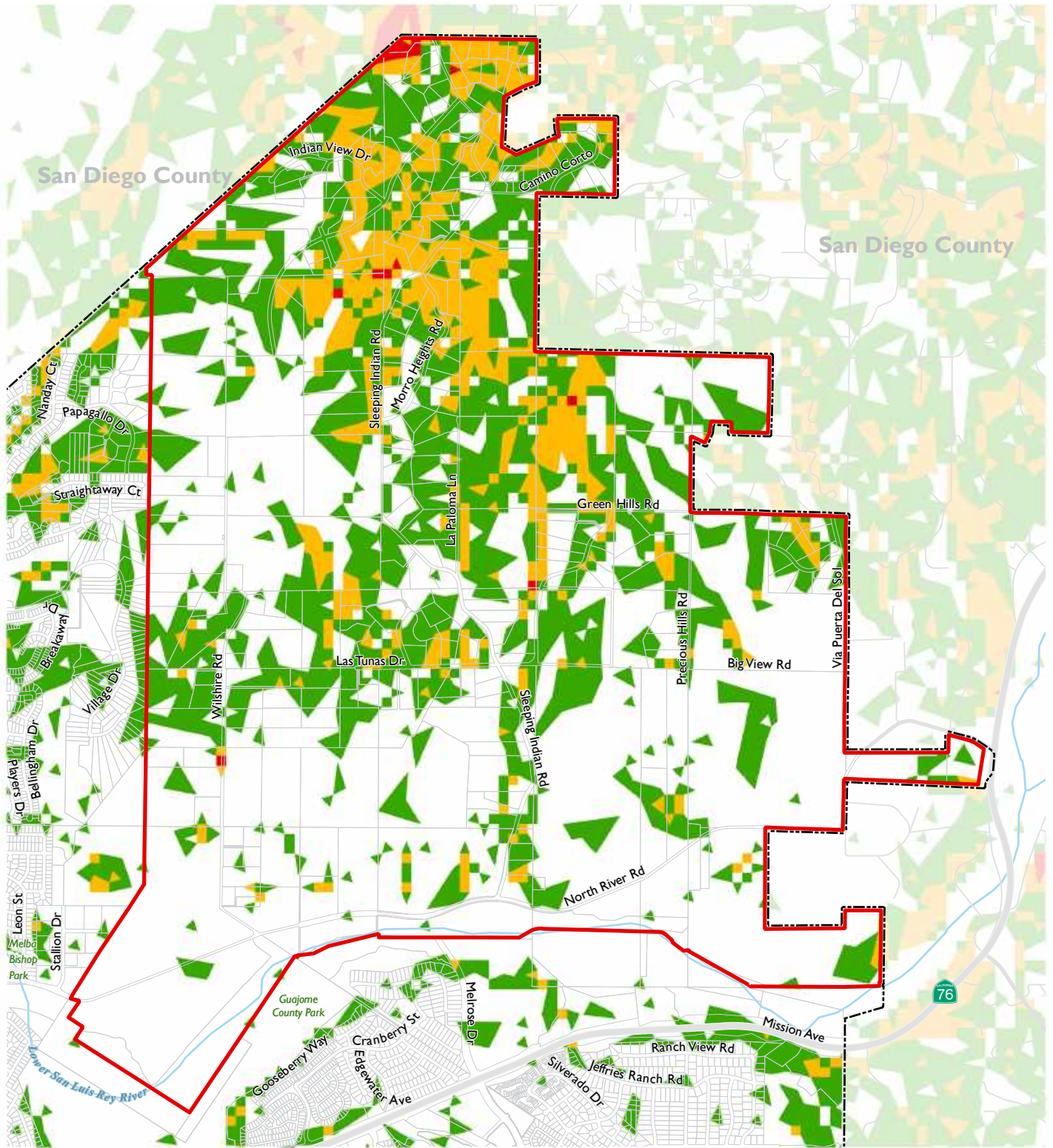
750 - 800	600 - 650	450 - 500	300 - 350
700 - 750	550 - 600	400 - 450	250 - 300
650 - 700	500 - 550	350 - 400	200 - 250

-  City of Oceanside
-  South Morro Hills Community Plan Area
-  River/Creek



Map Date: 8/5/2020

**FIGURE 2-4: Slope**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

- 50% or greater slope
- 25% to less than 50% slope
- 15% to less than 25% slope
- City of Oceanside
- South Morro Hills Community Plan Area
- River/Creek

20 acres

5 acres

0 1/4 1/2

Mile

Map Date: 6/10/2020



3

MOBILITY



## 3.1 ROADWAY NETWORK

### EXISTING ROADWAYS

The street network in South Morro Hills is limited in comparison with the rest of Oceanside, given the dominance of agricultural uses and presence of several large parcels. Most residential uses are located along Sleeping Indian Road and other north-south roadways. South Morro Hills also lacks roadway connectivity with the rest of the city, with the Douglas Drive and College Boulevard bridges being the only means of crossing the San Luis Rey River. Roadway safety and traffic operations are issues of concern and contribute to the quality of life of the community.

### Freeways/Highways

Regional access to South Morro Hills is provided by SR-76, which lies just to the south of the Planning Area, and is accessible at the eastern community edge via North River Road and to the southwest via College Avenue. SR-76 is a four-lane state highway that traverses the city, providing greater network connections to I-5 to the west and I-15 to the east. Over the past two decades, significant regional investments in the SR-76 corridor include an interchange improvement at Interstate 15, a new bridge crossing the San Luis Rey River, road widening to four travel lanes with median and shoulder enhancements to improve safety, as well as new traffic signals to improve access. The SR-76 segments just north and south of North River Road operate under acceptable conditions, however, congestion is present during commute hours between Melrose Drive and College Boulevard.

### Arterials/Collectors

North River Road traverses the community in east-west direction, providing the main access points at the southwestern and eastern Planning Area boundaries. Sleeping Indian Road offers an additional connection into South Morro Hills from the unincorporated San Diego County community of Bonsall at the northern community boundary. These roadways carry the greatest share of vehicular traffic within the community and are often used for trips both originating and ending outside of the community. Congestion is most prevalent along North River Road between Stallion Drive and Sleeping Indian Road and, to a lesser extent, North River Road between Sleeping Indian Road and SR-76.



## ROADWAY IMPROVEMENTS

### Planned Improvements

The adopted General Plan Circulation Element designates SR-76 between I-5 and Melrose Drive as a six-lane Expressway. However, with the State's recent policies to not further expand freeways, expansion with additional lanes is unlikely. The updated Oceanside General Plan and forecast demand will likely need to accept the existing four lanes of the expressway as its ultimate configuration.

The General Plan also plans for Wilshire Road to be extended northwards, connecting to Sleeping Indian Road near the northern community boundary. An expanded east-west connection is also identified, extending Las Tunas Drive westwards and connecting Sleeping Indian Road to Wilshire Road. Future plans also call for Melrose Drive to span northwards across the San Luis Rey River to North River Road. Additionally, North River Road is currently planned to be widened to four lanes west of the Melrose Drive extension and five lanes east of the extension. These planned improvements are shown in Figure 3-1. An analysis of future land uses and forecast traffic volumes will help determine the need for these expansions and extensions.

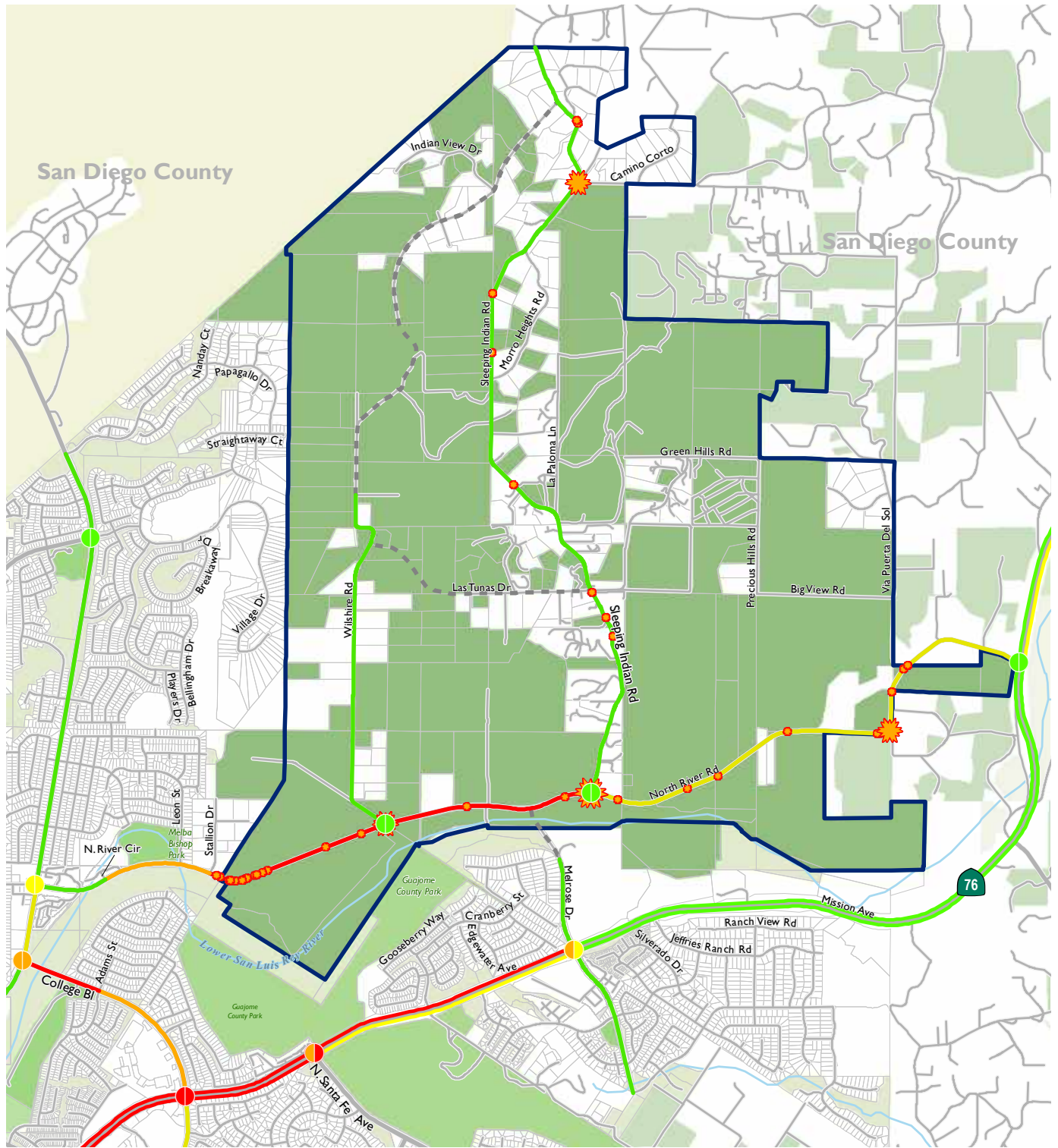
### Congestion and Safety

Typical commute peak hour intersection operations were evaluated at three locations within the community: Wilshire Road, Sleeping Indian Road, and SR-76. The analysis results did not indicate notable congestion at any of the locations. The intersection of Vandegrift Boulevard and North River Road (outside of the study area map) was also analyzed and operates at LOS D and E during the AM and PM peak hours, respectively.

During the five-year analysis period (2014 - 2018), the greatest concentration of vehicular collisions in the Planning Area occurred along North River Road, just east of Stallion Drive. The vast majority of these 17 collisions were found to exhibit very similar characteristics: fifteen of the 17 records were reported as eastbound single vehicle collisions, twelve of which were the result of unsafe speeds. Vehicular collision locations and operational analysis results are shown in Figure 3-1. Potential safety countermeasures to consider for this area include the removal or relocation of fixed objects such as utility poles, application of additional reflective markers on fixed objects, widening the shoulder, installation of chevron warning signs to indicate the horizontal curve, edge-line rumble strips/stripes, and/or the installation of dynamic or variable speed warning signs.



**FIGURE 3-1: Vehicular Needs**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

		<b>Roadway Level of Service</b>	<b>Number of Auto Collisions (2014-2018)</b>
			4
			2
			1



## 3.2 PEDESTRIAN NETWORK

### EXISTING PEDESTRIAN INFRASTRUCTURE

The pedestrian environment traditionally plays a significant role in daily life, as people walk to schools, parks, transit, stores, or even from a parked car to a destination. The South Morro Hills community presents a different set of circumstances given the lack of commercial or institutional land uses, and the absence of sidewalks reflects the nature of its land use composition, large parcel sizes, and intentionally rural characteristics. Pedestrians are not entirely non-existent in the community, with agricultural workers occasionally travelling by foot in the area. A network of established dirt roads both within and on the periphery of many parcels currently serve worker connectivity needs.

### PEDESTRIAN INFRASTRUCTURE IMPROVEMENTS

Building on the agritourism vision for the community warrants additional pedestrian considerations, as visitors may desire to walk between farms if accommodated. These considerations are shown in Figure 3-2. Establishing a formal network of connected multi-use pathways could help encourage visitors with more active lifestyles that seek out fresh and local food options. Siting a multi-use trail network should take into account north-south and east-west connections and, importantly, the locations of farms that desire to participate in agritourism.

Sleeping Indian Road and Wilshire Road could serve as north-south spines of the network, supplemented by east-west connections, such as Las Tunas Drive, Green Hills Road, or other alignments along parcel edges. The north side of North River Road, west of Sleeping Indian Road, is one location to consider for sidewalk installation. This segment would connect to an existing sidewalk that currently terminates just outside the community, west of Stallion Drive. The sidewalk would provide a continuous, dedicated space for pedestrians along the most trafficked road within the community, while connecting to the transit station located at the North River Road/Vandergrift Boulevard intersection. Decomposed granite (DG) pathways are an alternative option

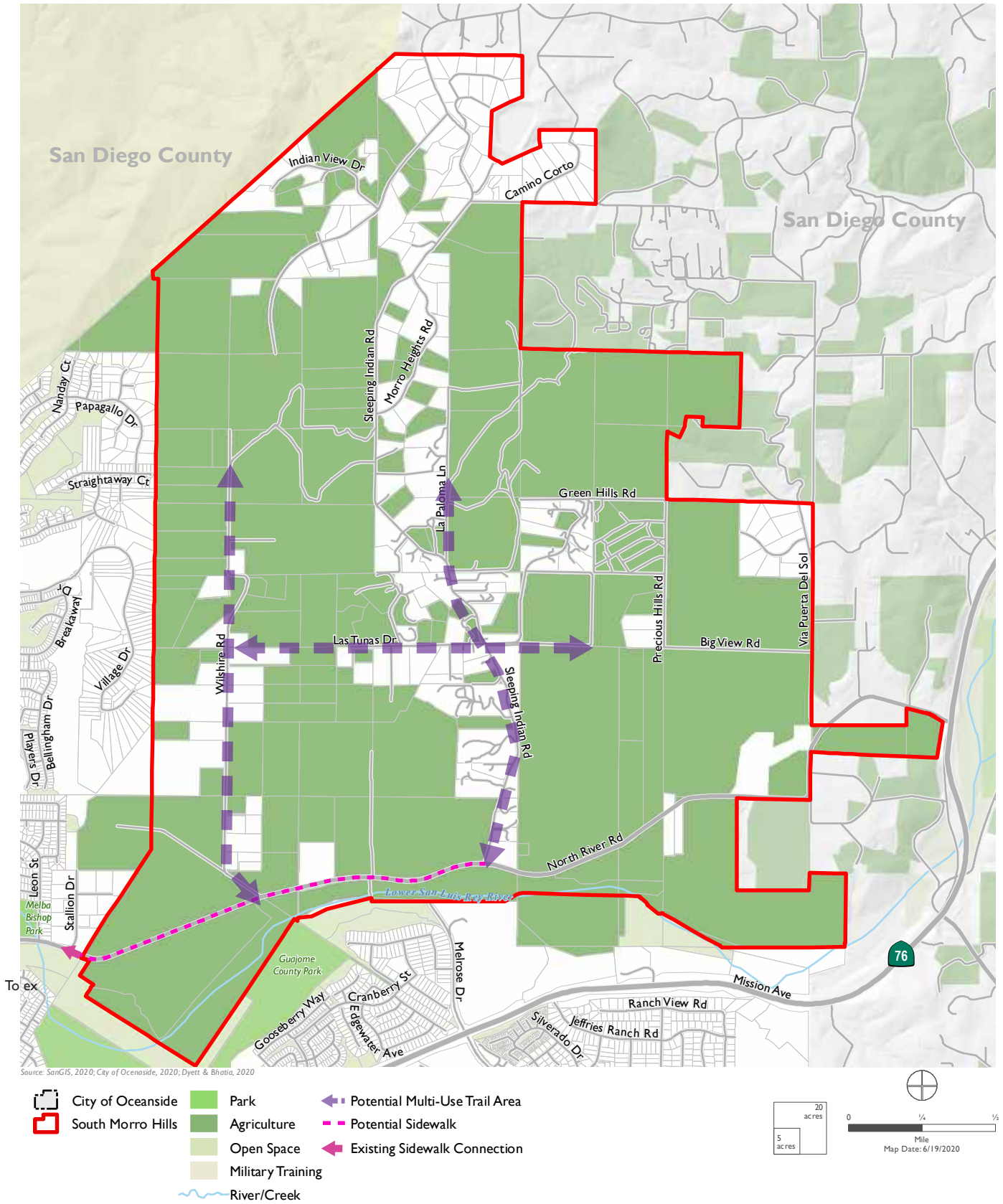
to concrete sidewalks that could facilitate future pedestrian demand. DG pathways are common in more rural environments as they tend to blend with natural aesthetics and can also be designed to accommodate equestrian users. Additional pathways would need to be determined as land use and urban design strategies are determined.

## 3.3 BICYCLE NETWORK

Transportation networks should include safe and comfortable bicycle infrastructure that is well-connected both internally and to adjacent communities. Those travelling by bike or foot are more exposed than vehicle occupants, making them the most vulnerable and sensitive to the surrounding environment, which requires additional safety considerations. Network connectivity is also important to ensure continuous infrastructure serves key destinations.



**FIGURE 3-2: Pedestrian Improvements**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

## EXISTING BICYCLE INFRASTRUCTURE

Three classifications of bicycle facilities are present within South Morro Hills and the surrounding area, including Class I Bike Paths, Class II Bike Lanes, and Class III Bike Routes.

### Class I Bike Path (also termed shared-use or multi-use path)

Class I bike paths are paved rights-of-way for exclusive use by bicyclists, pedestrians, and other non-motorized transportation users. They are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way. The San Luis Rey River Trail and facility around the perimeter of the Hi Hope Ranch development just south of the community are examples of existing Class I bike paths. An additional bike path is planned around the perimeter of the agricultural property south of the San Luis Rey River.

### Class II Bike Lane

Bike lanes are defined by pavement striping and signage used to allocate a portion of the roadway for exclusive bicycle travel. Green paint can be applied to identify conflict areas, such as intersection approaches or driveways. Painted buffers can be added to create additional separation between the bike lane and vehicle travel lane. A buffered bike lane is present along North River Road, just outside of the community boundary.

### Class III Bike Route

Bike routes are streets designated for bicycle travel and shared with motor vehicles. These facilities are designated by pavement markings and/or vertical signage to alert motorists to anticipate bicyclists. The bike route designation is intended for roadways suitable for sharing with motor vehicles due to low posted speed limits and low traffic volumes, while also providing connections to the greater bike network. Both North River Road and Sleeping Indian Road are classified as existing bike routes, with occasional vertical signage although no pavement markings.

## LEVEL OF TRAFFIC STRESS AND SAFETY

Bicycle Level of Traffic Stress (LTS) measures the level of comfort or stress a cyclist would experience on a roadway, considering speed of traffic, bicycle facility presence and type, bicycle facility width, number of auto travel lanes, and intersection approaches. The measurement classifies streets from LTS 1 (suitable for all ages and abilities) through LTS 4 (suitable for riders who are comfortable sharing the road with vehicle traffic traveling at 35 mph or greater). The existing designated bike routes on North River Road and Sleeping Indian Road both exhibit LTS 4 characteristics due to the facility type and travel speeds. Providing dedicated bike facilities—such as a bike path, bike lane, or protected bike lane—or reducing the speed limit would improve the LTS along these roadways.

One bicycle-involved collision was reported within the community during the five-year analysis period. The collision occurred along North River Road, approximately 1,800 feet west of Wilshire Road. The driver was assigned fault for improperly passing the cyclist while both parties were heading westbound. The planned bike lane extensions will give cyclists a dedicated space on the road and help to limit future incidents.

## FUTURE CONNECTIONS

Enhanced bicycle connectivity to and within the community could also be used to build on the community's agritourism strategy and capture some of the proven economic benefits of bicycle tourism. Active travel could be marketed as complimentary to the fresh foods and agritourism concept, drawing in surrounding community members and visitors. Figure 5-3 displays existing and planned bicycle facilities, bicycle collisions, uncomfortable or high stress bicycling conditions, and potential future connections to consider.

The City's currently adopted Bicycle Master Plan calls for the North River Road bike lane to extend across the community to the eastern City limit. North River Road is an important roadway for all travel modes within South Morro Hills due to the limited community entry points. The extension would connect South Morro Hills to several key destinations, just west of the community along North River Road, including Melba Bishop Recreation Center and Park, Del Rio Elementary School, and the San Luis Rey Transit Center.

In addition to this planned improvement, a bicycle access point and connection spanning the San Luis Rey River would greatly improve connectivity to the community and tap into existing San Luis Rey River Trail, which regularly attracts recreational bicycle riders. Future connections could use the existing unpaved road alignment east of Sleeping Indian Road, the Melrose Drive extension, or other potential crossing near the southwestern community boundary.

## **3.4 TRANSIT NETWORK**

### **EXISTING TRANSIT NETWORK**

The City of Oceanside has a variety of public transit options available, including Breeze Bus, Sprinter light rail, Coaster commuter rail, Metrolink commuter rail, and Amtrak. None of these services are currently provided within the South Morro Hills community. However, the San Luis Rey Transit Center is approximately 0.5 miles west of the community along North River Road. Breeze Bus routes 303, 309, 311, 313, 315 connect passengers boarding at the San Luis Rey Transit Center to destinations throughout Oceanside, as well as Camp Pendleton, the cities of Vista, Carlsbad, and Encinitas. Route 303 runs provides service between the San Luis Rey Transit Center and the Oceanside Transit Center, where transfers to the Coaster, Sprinter, Amtrak, Metrolink, and Greyhound Bus can be made.

### **FUTURE TRANSIT IMPROVEMENTS**

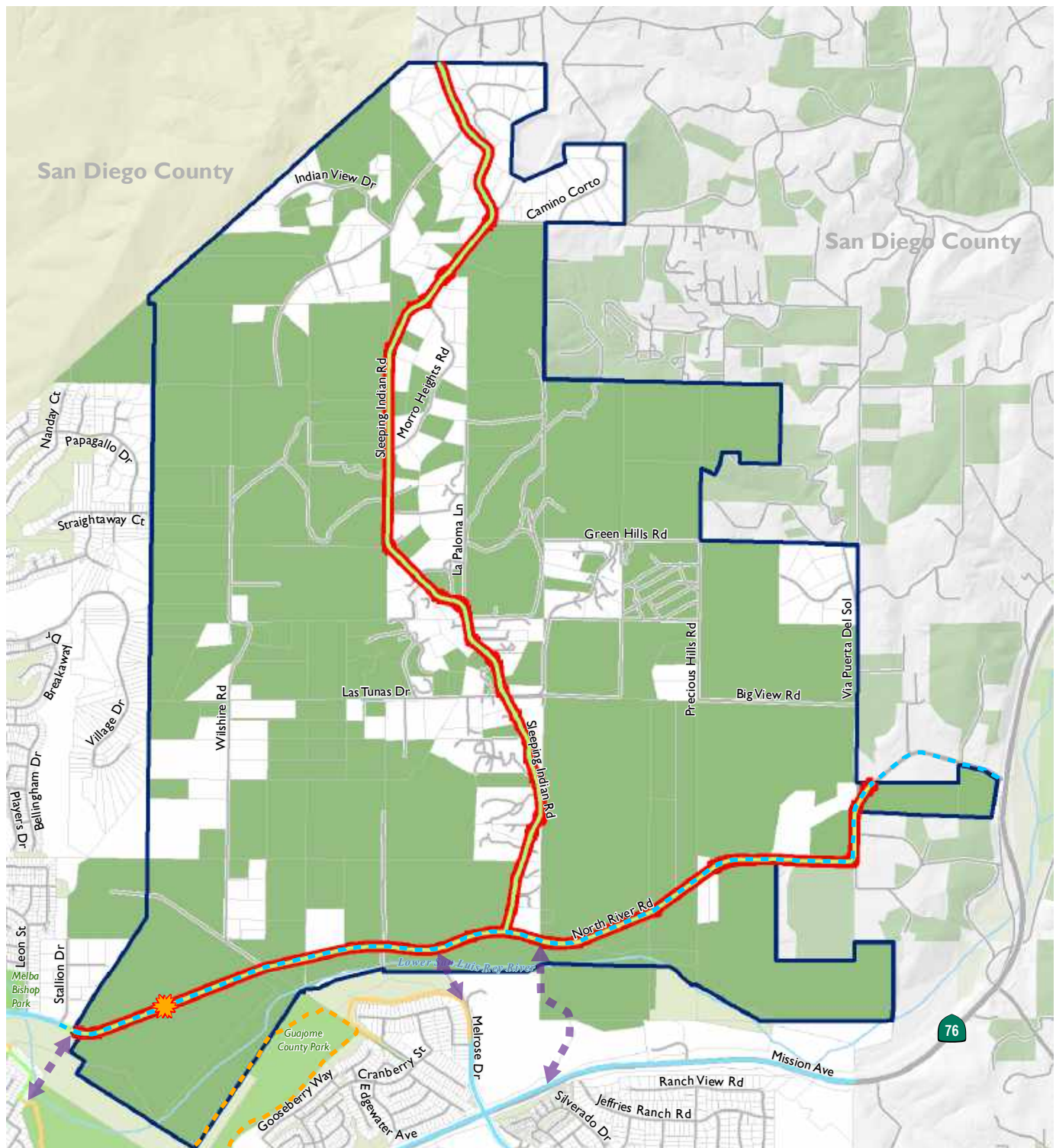
While the Planning Area's low density, limited land uses, and large parcel sizes limit the potential for traditional daily transit service, future route extensions may become more feasible with additional demand. One option, a demand responsive shuttle service, typically operates within a defined area without specific route limitations, picking up and dropping off passengers at their unique origins and destinations. Expanding the service area to include the San Luis Rey Transit Center would offer visitors and community members an alternative way to access the community. Potential service operators include North County Transit District, the City, and/or community or business interest groups, as well as for-profit shared ride services.

Infrastructure should be considered in planning for shuttle services. Vehicle turning radius, lane widths, roadway surface, boarding areas at destinations, and parking locations for passengers are all important considerations that may limit service to some areas. A designated parking area, such as park-and-ride lot along North River Road could increase visibility and awareness of the demand responsive shuttle service, while helping to limit additional vehicular traffic. The park-and-ride lot could also serve to market the farms and businesses within the community while providing information such as hours of operation, locations, and available products. A potential route for a demand responsive transit service and park and ride stops are shown in Figure 3-4.

### **3.5 WAYFINDING**

Tourists are commonly unfamiliar with the areas they are visiting, underscoring the importance of clear and direct signage. Establishing wayfinding guidance for the community not only provides direction to destinations but can also help establish a brand and create the sense of a district. Any future wayfinding program should be developed in close consultation with the community, specifically where potential destinations are to be advertised.

**FIGURE 3-3: Bicycle Improvements**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatta, 2020

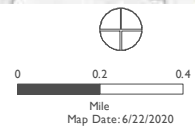
- City of Oceanside
- South Morro Hills

- Park
- Agriculture
- Open Space
- Military Training
- River/Creek

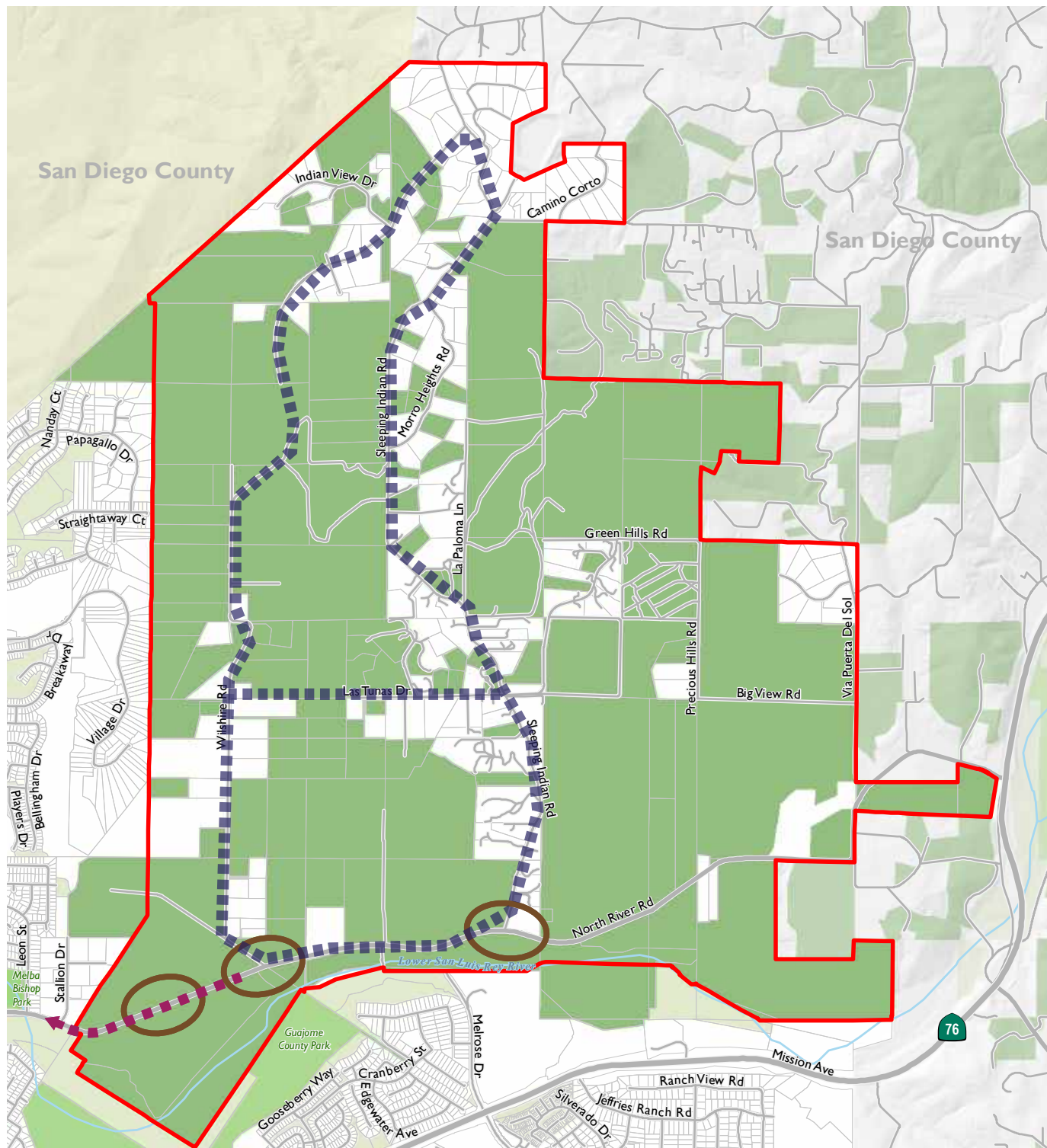
**Existing Bicycle Facilities**

- Existing Bike Path
- Existing Bike Lane
- Existing Bike Route
- Planned Bike Path
- Planned Bike Lane
- Potential Trail Connection Across River











- Bicycle Collision (2014-2018)
- Bicycle LTS 4

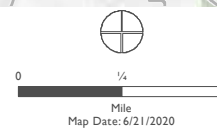


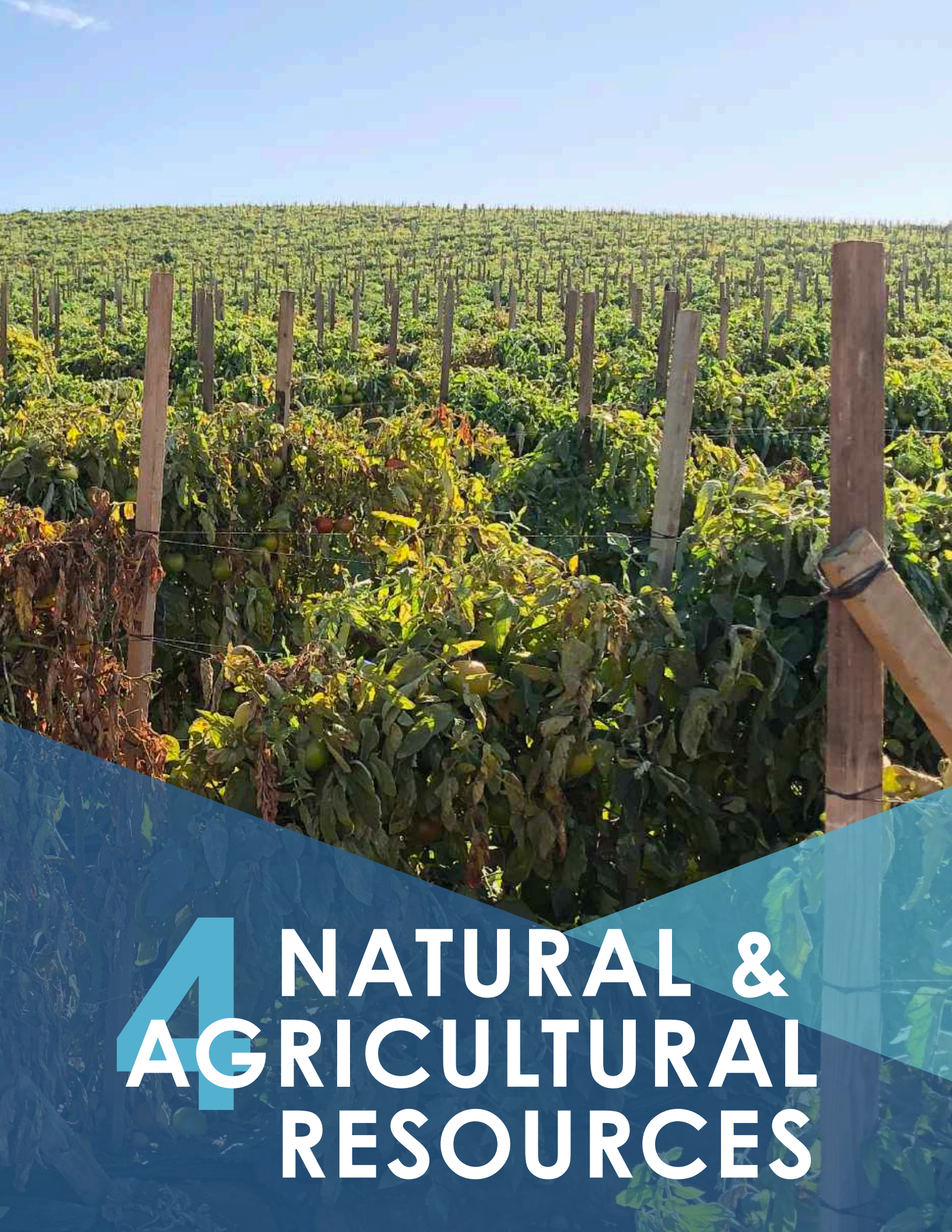
**FIGURE 3-4: Transit Improvements**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatta, 2020

-  City of Oceanside
-  Park
-  Potential Park-and-Ride Transit Stop
-  South Morro Hills
-  Agriculture
-  Potential Transit Service to San Luis Rey Transit Center
-  Open Space
-  Potential Demand Responsive Transit Service
-  Military Training
-  River/Creek





# 4 NATURAL & AGRICULTURAL RESOURCES



## 4.1 GEOLOGY AND SOILS

### GEOLOGICAL CONDITIONS

The South Morro Hills Planning Area is characterized by rolling hills, ridges, streambeds, and rock outcroppings, including the Sleeping Indian Ridgeline. Geological formations underlying the area are largely granitic, with alluvial formations within the southern portion of the Planning Area along the San Luis Rey River (Figure 4-1).

#### Faults and Seismicity

There are no known active or potentially active faults within the City of Oceanside. The nearest faults are the Elsinore Fault to the east and the Rose Canyon Fault, which traverses the Pacific Ocean in a north-northeasterly direction. There is no potential for ground rupture due to the lack of any active faults. However, like most of Southern California, the community is considered seismically active and susceptible to earthquakes.

#### Liquefaction and Landslides

Liquefaction is a phenomenon whereby unconsolidated and/or near-saturated soils lose cohesion as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil. Areas of liquefaction potential are shown in shown in Figure 4-2. Areas of potential liquefaction are located within young alluvial valley deposits in proximity to the San Luis Rey riverbed.

Slopes steeper than 2:1 (horizontal: vertical) are susceptible to landslides or slope failure. Slope failure is dependent on topography and underlying geologic materials, as well as factors such as rainfall, excavation, or seismic activities that can precipitate slope instability. Earthquake

motions can induce significant horizontal and vertical dynamic stresses along potential failure surfaces within a slope. While there are several steep slopes in the Planning Area (see Chapter 2), there are no known or suspected landslide susceptibility areas according to the California Department of Conservation landslide mapping program.

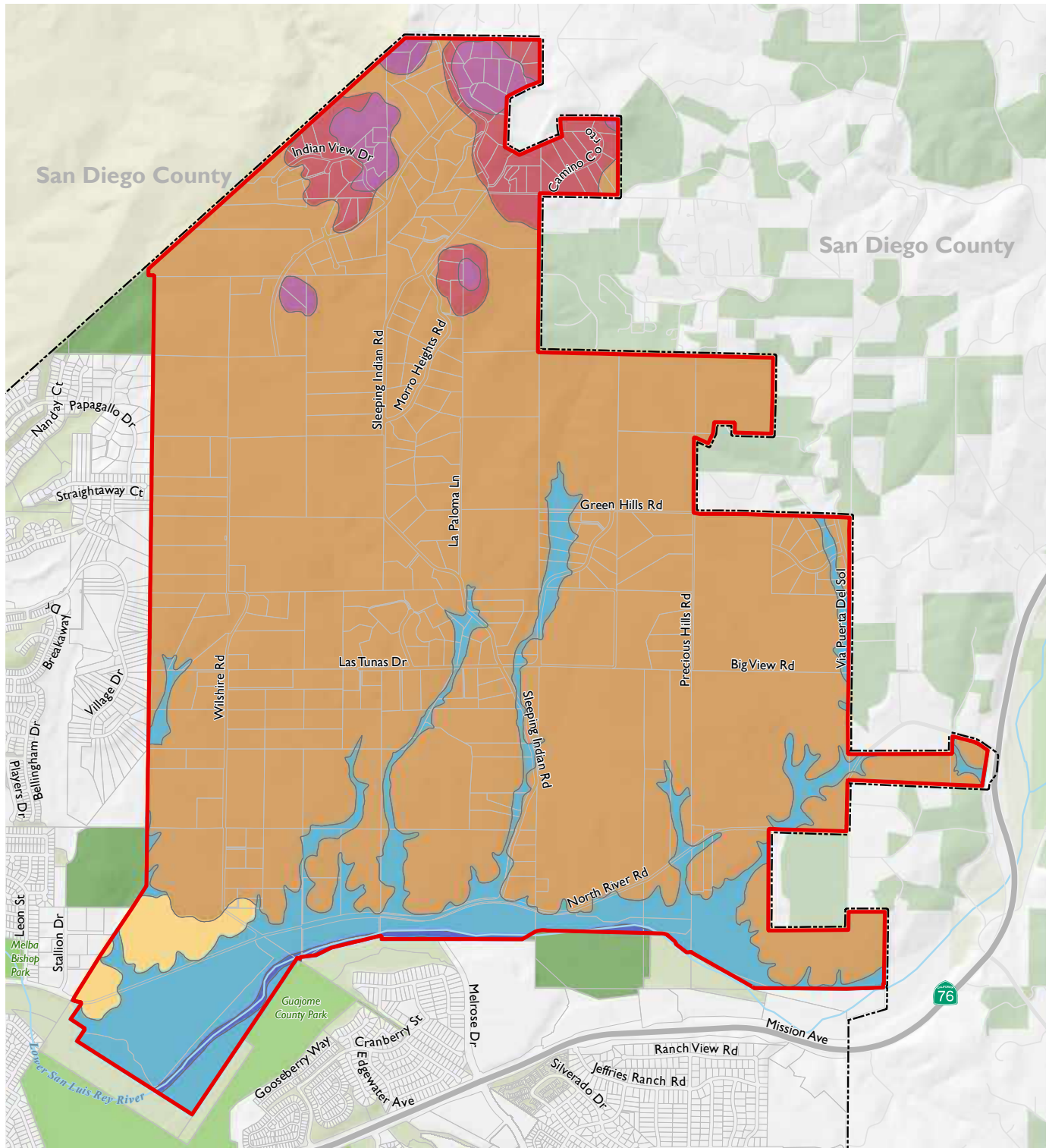
#### SOILS

The Planning Area is primarily underlain by Cienega coarse sandy loam (20.9%), Fallbrook sandy loam (11.0%), Vista coarse sandy loam (9.1%), Placentia sandy loam (8.7%), Bonsall sandy loam (7.9%), and Visalia sandy loam (7.2%). Approximately 60 percent of the Planning Area soils are listed as soil candidates for the Prime Farmland and Farmland of Statewide Importance Farmland categories as mapped by the Farming Mapping and Monitoring Program (FMMP). Table 4-1 provides a breakdown of the soil type by acreage and percent of Planning Area.





**FIGURE 4-1: Geological Formations**

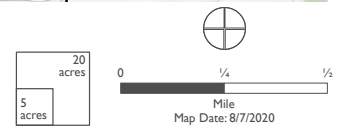


Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

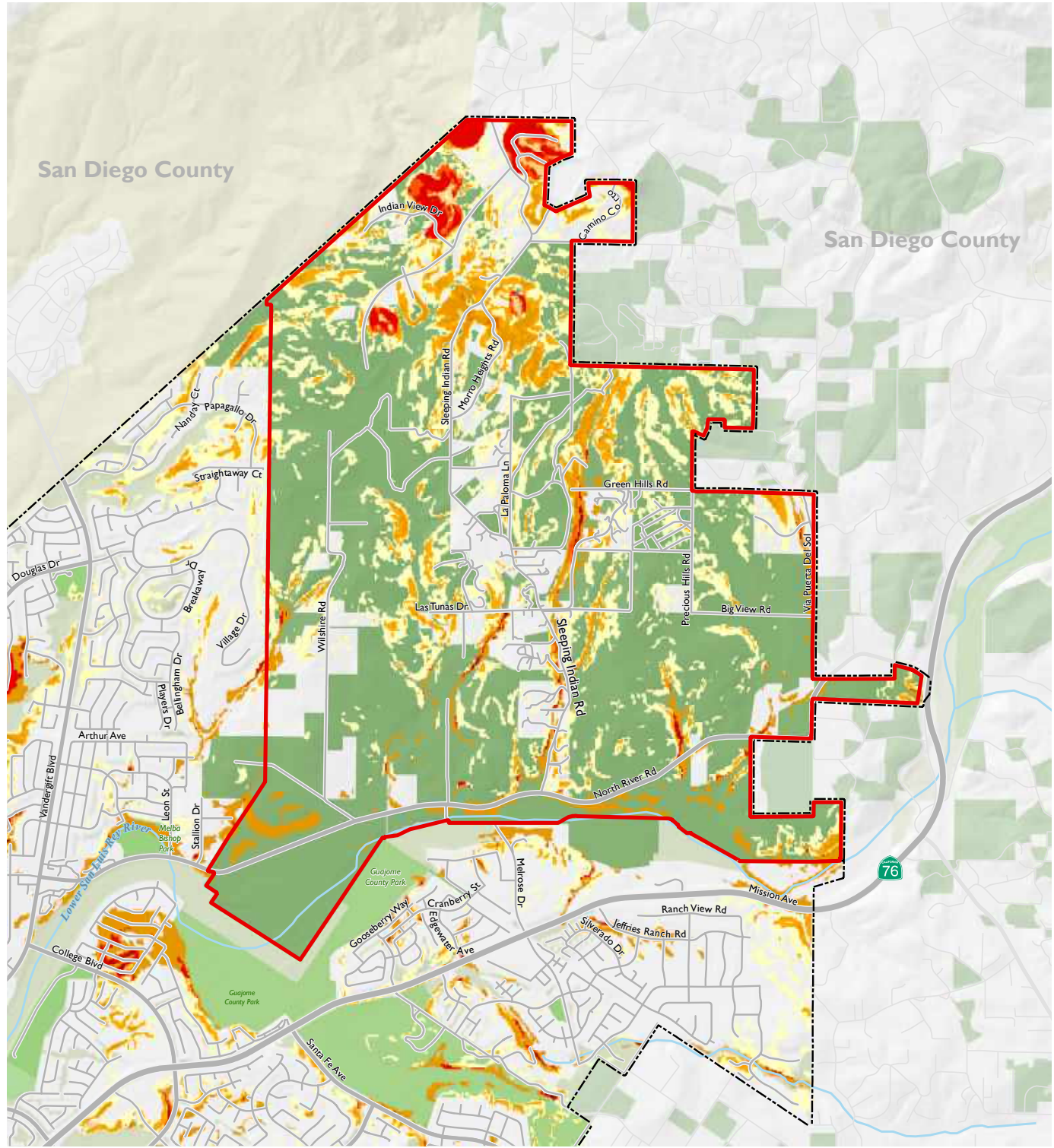
**Geologic Formations**

- Alluvial Wash Deposits
- Coarse-grained Tertiary age formations of sedimentary origin
- Granitic and other intrusive crystalline rocks of all ages
- Old Alluvial Valley Deposits
- Tertiary age formations of volcanic origin
- Young Alluvial Valley Deposits

- South Morro Hills Community Plan Area
- City of Oceanside
- Park
- Agriculture
- Open Space
- Military Training
- River/Creek



**FIGURE 4-2: Landslide Susceptibility**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatta, 2020; California Geological Survey.

**Landslide Susceptibility Classes**

	0		VII
	III		VIII
	V		IX
	VI		X

- South Morro Hills Community Plan Area
- City of Oceanside
- Park
- Agriculture
- Open Space
- Military Training
- River/Creek

Mile  
Map Date: 8/7/2020

**TABLE 4-1: Soils Information**

<i>Soil Type</i>	<i>Acreage</i>	<i>Percentage of Planning Area</i>	<i>Good or Fair for Crop Production<sup>1</sup></i>	<i>FMMP Prime or Statewide Soil Candidate<sup>2</sup></i>
Acid igneous rock land	9	0%	Not listed*	-
Altamont clay	125	4%	Tomatoes	Statewide (9-15% slope)
Bonsall sandy loam	270	8%	Citrus, Tomatoes and Flowers	Statewide (2-15% slope)
Bosanko clay	176	5%	Citrus and Tomatoes	Statewide (2-9% slope)
Cieneba coarse sandy loam	718	21%	Avocados and Flowers	-
Cieneba rocky coarse sandy loam	3	0%	Not listed*	-
Cieneba very rocky coarse sandy loam	243	7%	Not listed*	-
Cieneba-Fallbrook rocky sandy loams	6	0%	Avocados	Prime (2-9% slope)
Fallbrook rocky sandy loam	6	0%	Avocados and Citrus	-
Fallbrook sandy loam	377	11%	Avocados and Citrus	Statewide (5-9% slope)
Fallbrook-Vista sandy loams	58	2%	Avocados, Citrus, Tomatoes and Flowers	-
Grangeville fine sandy loam	7	0%	Truck Crops, Tomatoes and Flowers	Prime (0-2% slope)
Gravel pits	2	0%	Not listed*	-
Las Flores loamy fine sand	67	2%	Truck Crops and Flowers	Statewide (2-15% slope)
Las Posas stony fine sandy loam	16	1%	Citrus, Truck Crops, Tomatoes and Flowers	-
Olivenhain cobbly loam	108	3%	Citrus	-
Placentia sandy loam	300	9%	Tomatoes and Flowers	Statewide (0-9% slope)
Riverwash	45	1%	Not listed*	-
Salinas clay	4	0%	Tomatoes	Prime (0-5% slope)
Steep gullied land	188	6%	Not listed*	-
Tujunga sand	151	4%	Avocados, Truck Crops and Flowers	Statewide (0-5% slope)
Visalia sandy loam	248	7%	Avocados, Citrus, Trucks Crops, Tomatoes and Flowers	Prime (0-9% slope)
Vista coarse sandy loam	312	9%	Avocados, Citrus, Trucks Crops, Tomatoes and Flowers	Statewide (5-9% slope)
<b>Total</b>	<b>3,439</b>	<b>100%</b>		

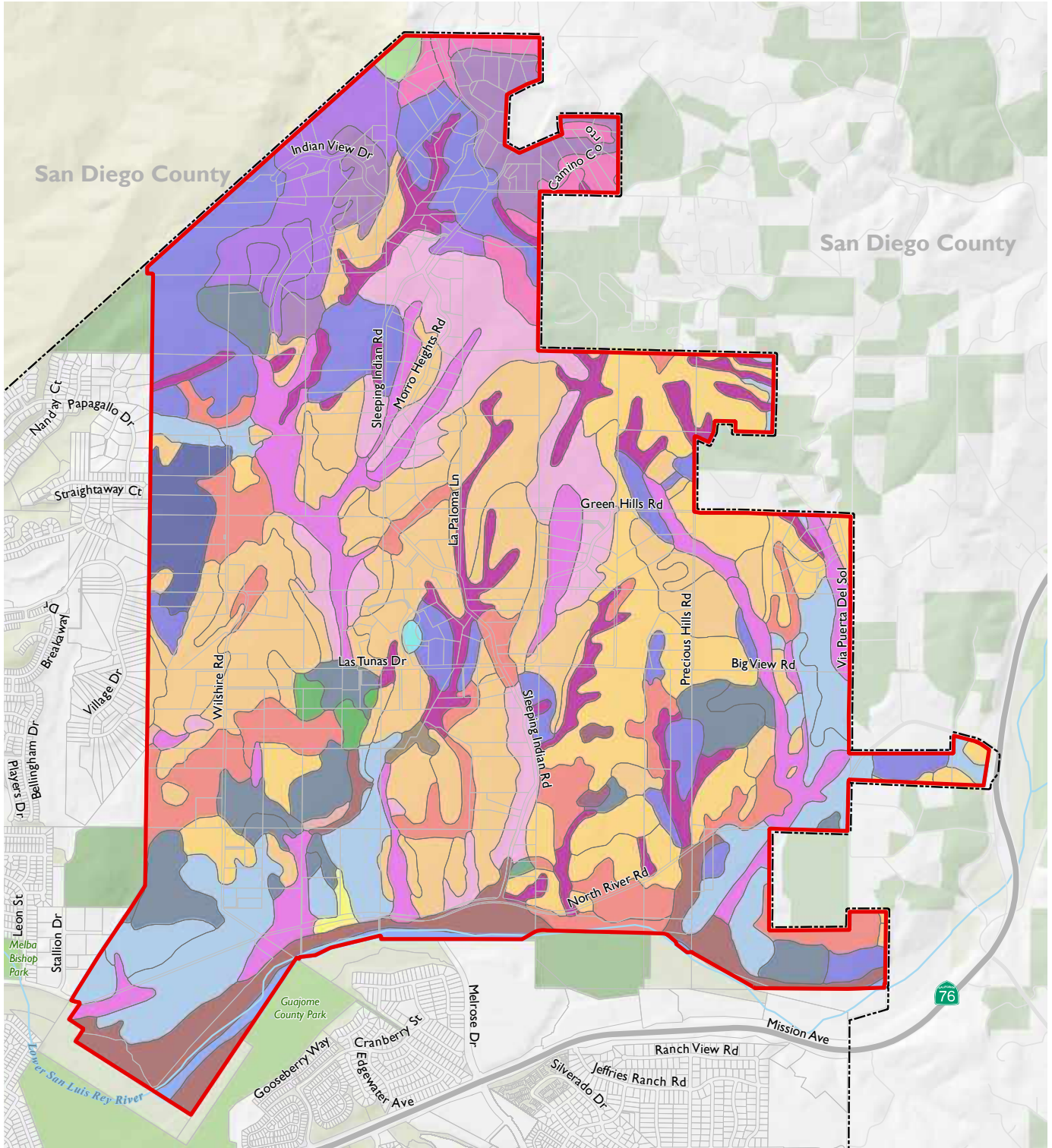
Totals may not add due to rounding.

1. Based on 1973 Soil Survey, \* indicates soil type not listed within Table 21 of the USDA Soil Survey

2. Based on California Department of Conservation soil candidates for Prime Farmland and Farmland of Statewide Importance: [https://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/soils/San\\_Diego\\_gSSURGO.pdf](https://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/soils/San_Diego_gSSURGO.pdf)

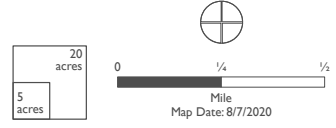
**Source:** SanGIS, 2020; USDA, 1973; Department of Conservation, 2020.

**FIGURE 4-3: Soil Types**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

- |                                       |                                 |                                       |
|---------------------------------------|---------------------------------|---------------------------------------|
| Acid igneous rock land                | Fallbrook sandy loam*           | Salinas clay*                         |
| Altamont clay                         | Fallbrook-Vista sandy loams     | Steep gullied land*                   |
| Bonsall sandy loam*                   | Grangeville fine sandy loam     | Tujunga sand*                         |
| Bosank clay*                          | Gravel pits                     | Visalia sandy loam*                   |
| Cieneba coarse sandy loam*            | Las Flores loamy fine sand      | Vista coarse sandy loam*              |
| Cieneba rocky coarse sandy loam       | Las Posas stony fine sandy loam | South Morro Hills Community Plan Area |
| Cieneba very rocky coarse sandy loam* | Olivenhain cobbly loam          | City of Oceanside                     |
| Cieneba-Fallbrook rocky sandy loams   | Placentia sandy loam*           | River/Creek                           |
| Fallbrook rocky sandy loam            | Riverwash                       |                                       |



\* Indicates Prime Soils

## 4.2 HYDROLOGY AND FLOODING

### WATERSHEDS

The San Luis Rey Hydrologic Unit covers approximately 560 square miles, extending from Palomar and Monserate mountains to the Pacific Coast. As shown in Figure 4-4, the South Morro Hills Planning Area sits entirely within the Lower San Luis Hydrologic Area (903.1) of the San Luis Rey Hydrologic Unit. Water that drains through the basin eventually finds its way to the Pacific Ocean by way of the San Luis Rey River Estuary.

### WATER QUALITY

Under Section 303(d) of the Clean Water Act, the Lower San Luis Rey Watershed was identified as impaired for several pollutants, including, but not limited to: selenium, Enterococcus bacteria, total coliform bacteria, chloride, phosphorus and total dissolved solids. These conditions are expected to be addressed through several best management practices and regular monitoring. Major sources of pollutants in the San Luis Rey Watershed Management Area include agriculture, orchards, livestock, domestic animals, urban runoff, and septic systems. The river shows high levels of chloride and total dissolved solids and the mouth of the river has had historical bacterial exceedances.

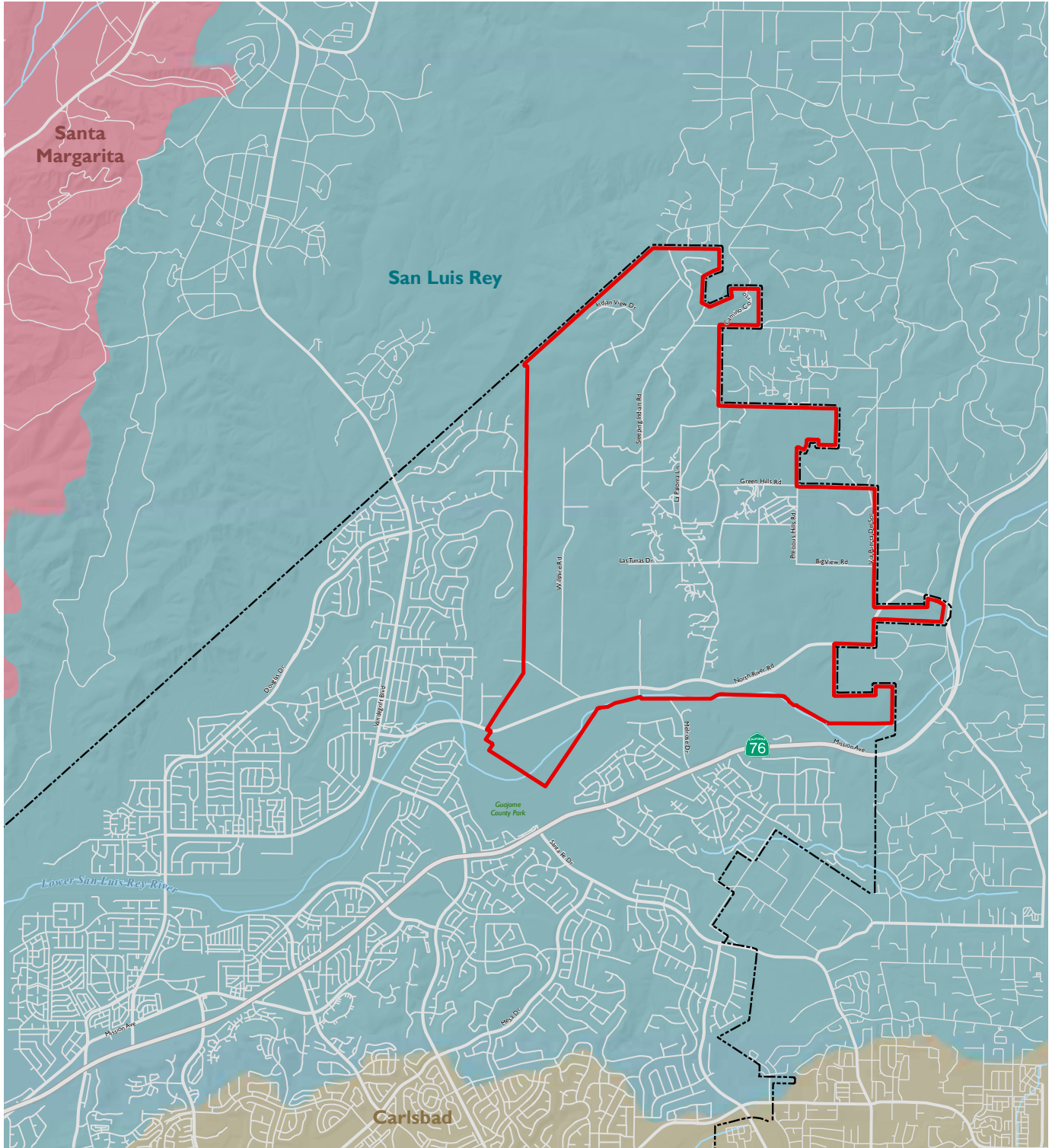
The Final Water Quality Improvement Plan for the San Luis Rey Watershed Management Area was submitted to the Regional Water Quality Control Board and was accepted in February 2016. Co-permittees have chosen to focus their treatment and cleanup efforts on bacteria in the Lower San Luis Rey River, a condition which has been classified as highest priority water quality condition. Land uses within the South Morro Hills Planning Area could contribute to improvements in water quality within the San Luis Rey River Watershed through implementation of agricultural practices that minimize pesticide and nutrient runoff into downstream water bodies. Additionally, as development occurs, implementation of project specific storm water best management practices and landscaping requirements in compliance with current storm water management requirements would ensure pollutants and runoff associated with development are treated to protect water quality.

### FLOODING

Due to the location of the San Luis Rey River, the southern portion of the Planning Area is subject to riverine flooding. Such flood events can occur after heavy or prolonged rainfall. Federal Emergency Management Agency's Flood Insurance Rate maps delineate special flood hazard areas including floodways and 100-year floodplain areas. As illustrated in Figure 4-5, flood hazard areas are focused around the San Luis Rey River in the southern portion of the Planning Area.



**FIGURE 4-4: Watersheds**

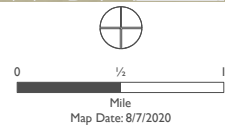


Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

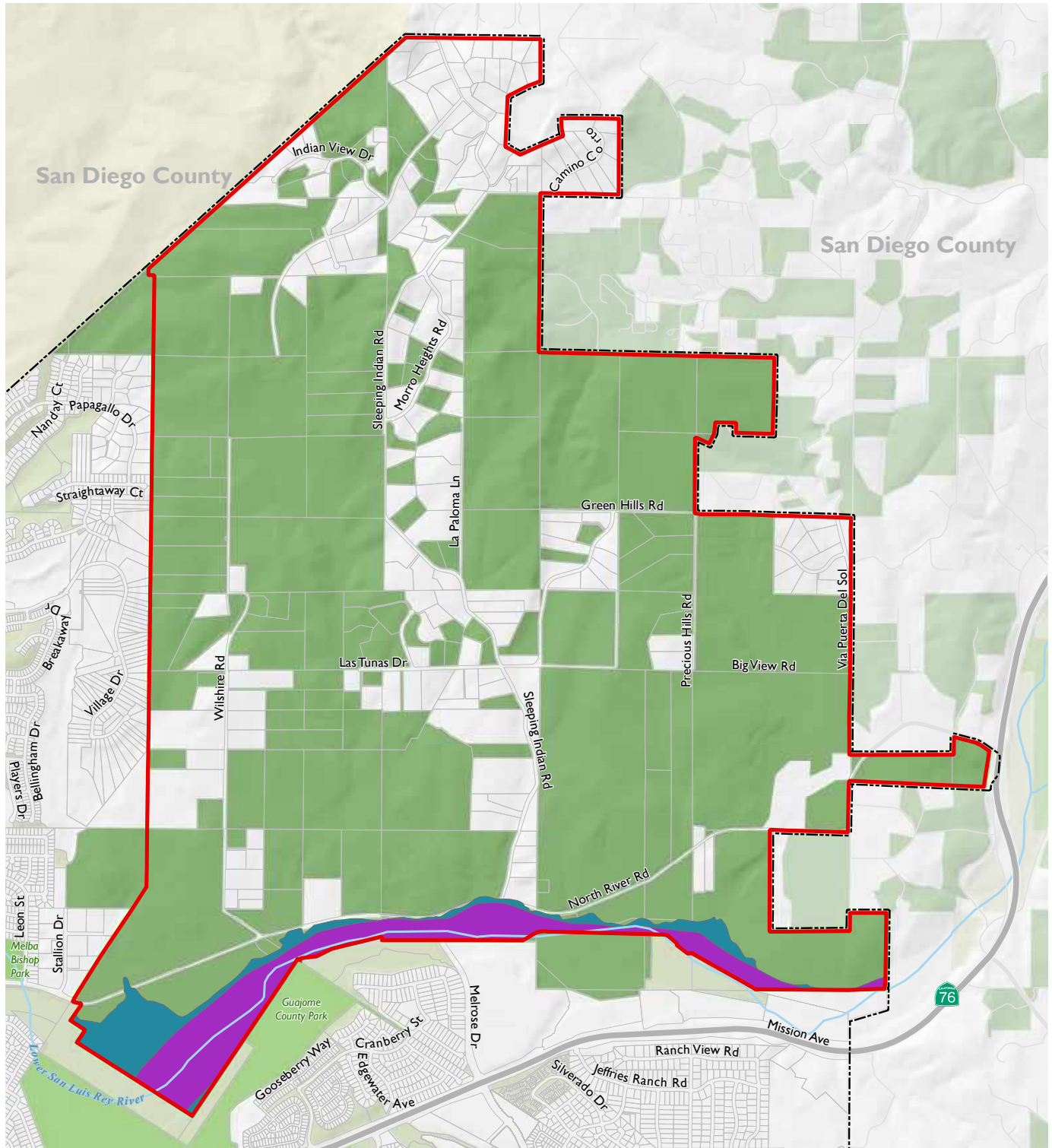
**Watersheds**

- Carlsbad
- San Luis Rey
- Santa Margarita

- South Morro Hills Community Plan Area
- City of Oceanside
- River/Creek



**FIGURE 4-5: FEMA Floodzones**

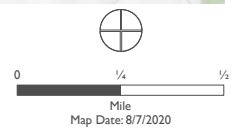


Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatta, 2020; FEMA

**FEMA Flood Zones**

- 1% Annual Change Flood Hazard
- Floodway

- South Morro Hills Community Plan Area
- City of Oceanside
- Park
- Agriculture
- Open Space
- Military Training
- River/Creek



## 4.3 BIOLOGICAL RESOURCES

### VEGETATION AND HABITAT

The vegetation communities that are supported within the South Morro Hills Planning Area are shown in Figure 4-6 and further delineated in Table 4-2. As shown, the Planning Area is predominantly agriculture, with habitat focused along the San Luis Rey River and tributary water bodies.

While most of the Planning Area is dominated by agricultural operations, sensitive habitats and species continue to be supported throughout, particularly in proximity to wetland and riparian areas along the San Luis Rey River and its tributaries. Wetland areas as mapped by the National Wetlands Inventory are shown in Figure 4-7.

The City of Oceanside 2005 Draft Subarea Plan (Subarea Plan) identifies the Planning Area as an “agricultural exclusion zone.” Within this area specific guidelines were identified to provide for protection for sensitive habitats and species while recognizing agricultural practices would continue. The Draft Subarea Plan identified that discretionary actions and conversions to non-agricultural use would be subject to specific conservation guidelines.

### 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 (CNDDDB), there are records of 10 special status species and presence of several critical habitats in South Morro Hills, shown in Figure 4-8. Figure 4-9 illustrates the potential occurrence area for the species located within the South Morro Hills Planning Area, and Table 4-3 provides details regarding their listing status, presence, and occurrence type. The agricultural exclusion zone identified in the draft Subarea Plan includes language requiring a reconnaissance survey for Stephens’ kangaroo rat and arroyo toad to identify their potential for occurrence. The need for future development projects to complete these surveys prior to development would need to be considered as part of the Community Plan.

**TABLE 4-2: Vegetation Communities**

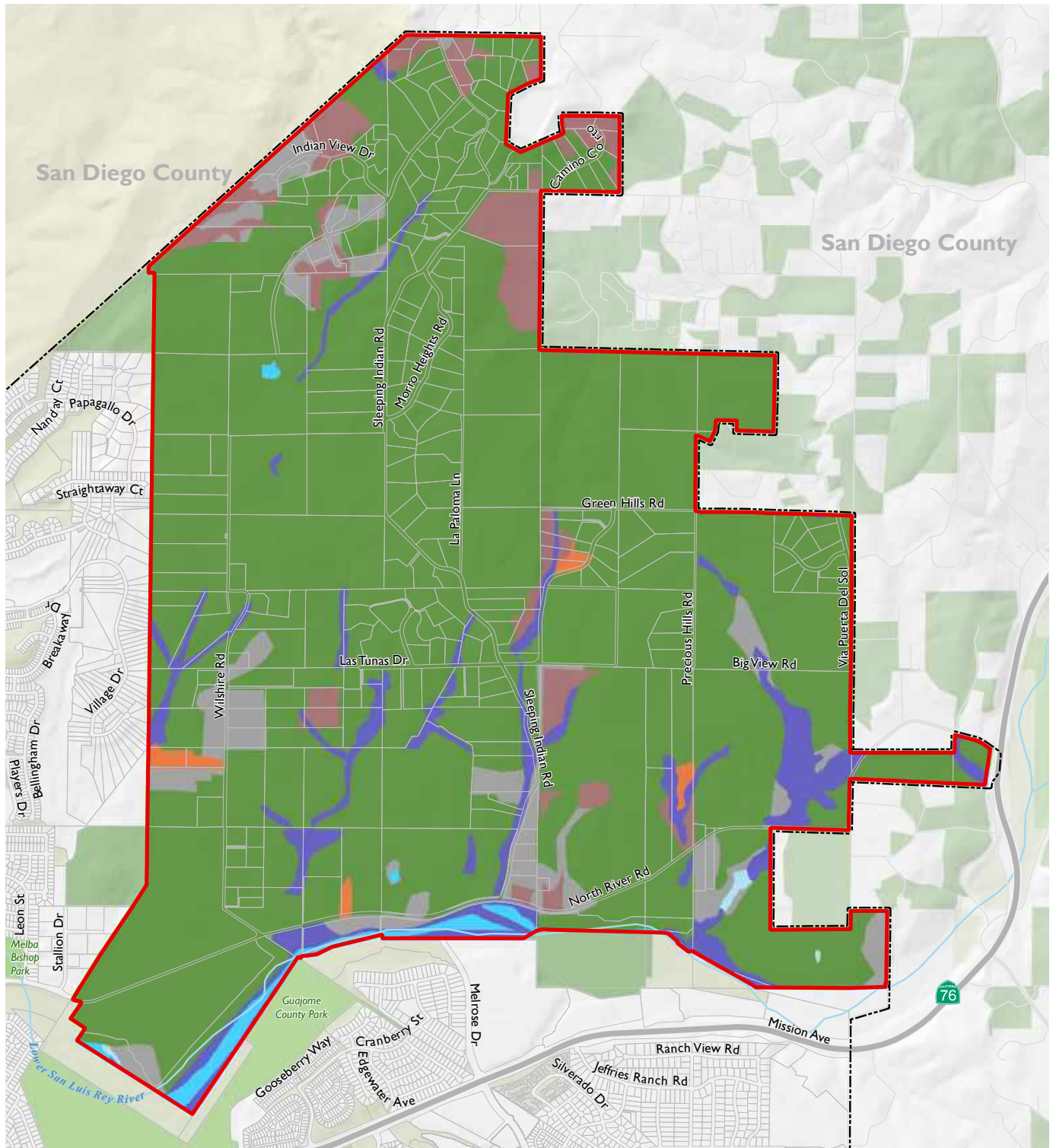
<i>Category of Vegetation</i>	<i>Area (Acres)</i>	<i>Percentage of Planning Area</i>
Freshwater Marsh	4	0%
Diegan Coastal Sage Scrub	176	5%
Valley and Foothill Grassland	17	1%
Urban/Developed and Disturbed Habitat	204	6%
Waters (Non-vegetated channel, Floodway, Lakeshore Fringe, Open Water)	38	1%
Agriculture (Extensive agriculture (Field/Pasture/Row Crops), Field / Pasture, Intensive Agriculture (Dairies, Nurseries, Chicken Ranches), Orchards and Vineyards, Row Crops)	2,774	81%
Riparian Habitats (Southern Arroyo Willow Riparian Forest, Southern Cotton wood-willow Riparian Forest, Southern Riparian Scrub, Southern Sycamore-alder riparian woodland, southern willow scrub)	225	7%
<b>Total</b>	<b>3,439</b>	<b>100%</b>

Totals may not add due to rounding.

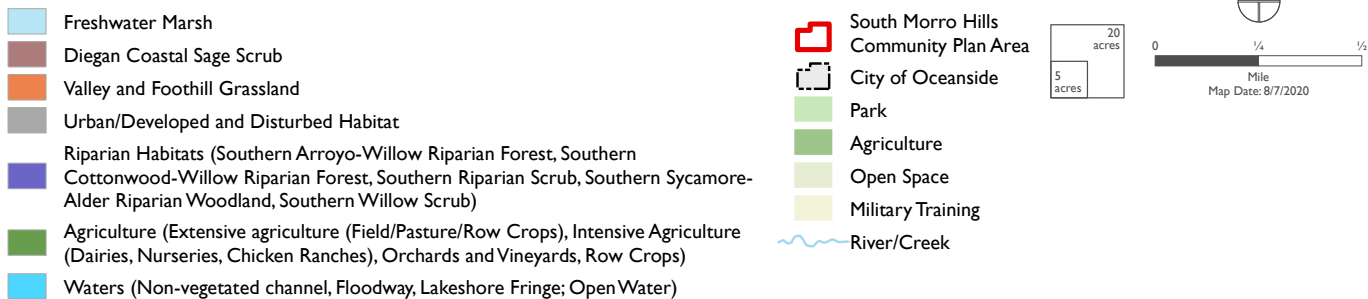
Source: SanGIS, 2020.



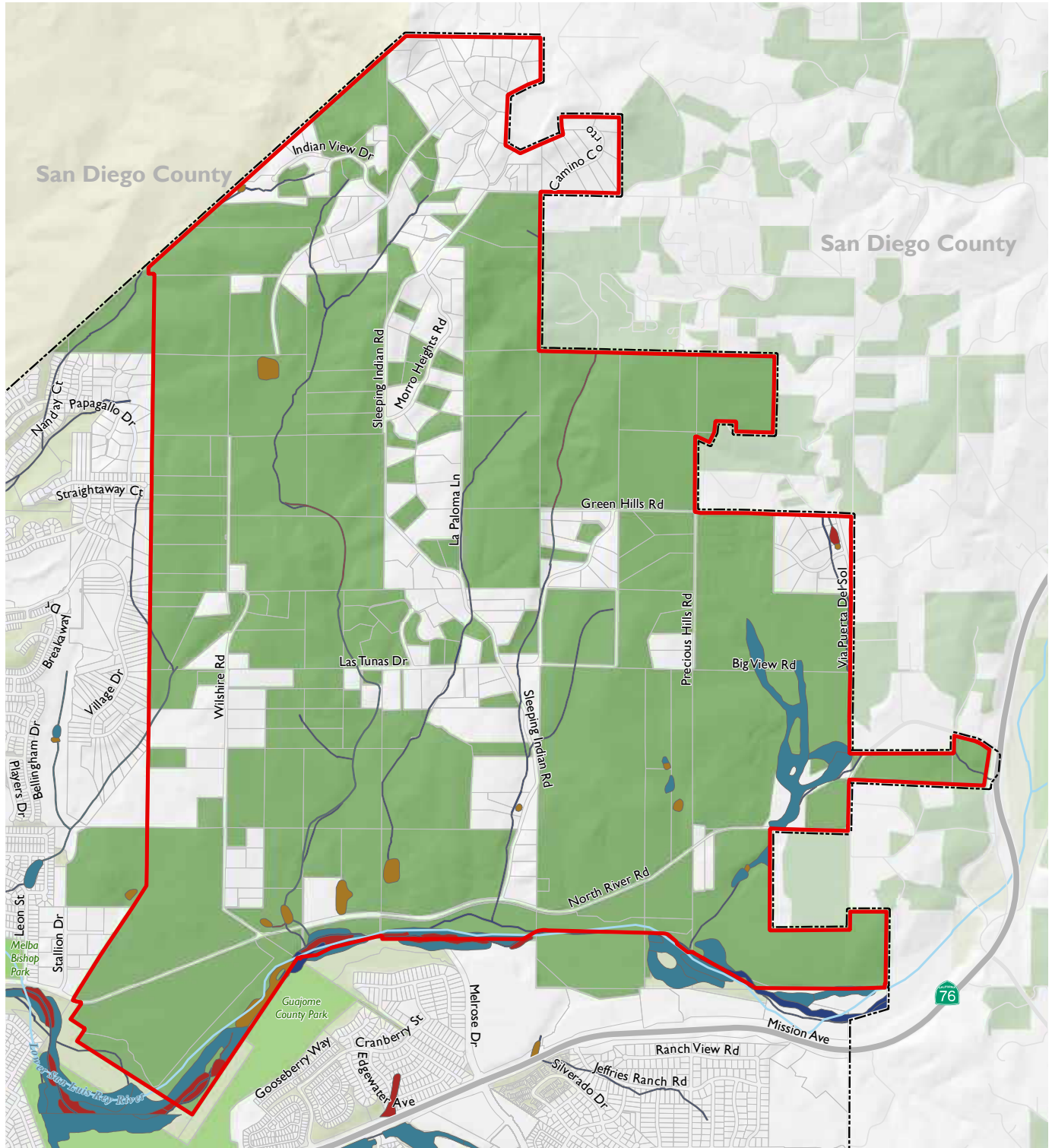
**FIGURE 4-6: Vegetation Communities**



Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020



**FIGURE 4-7: Wetlands**

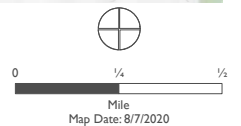


Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020; FEMA

**Wetlands**

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

- South Morro Hills Community Plan Area
- City of Oceanside
- Park
- Agriculture
- Open Space
- Military Training
- River/Creek



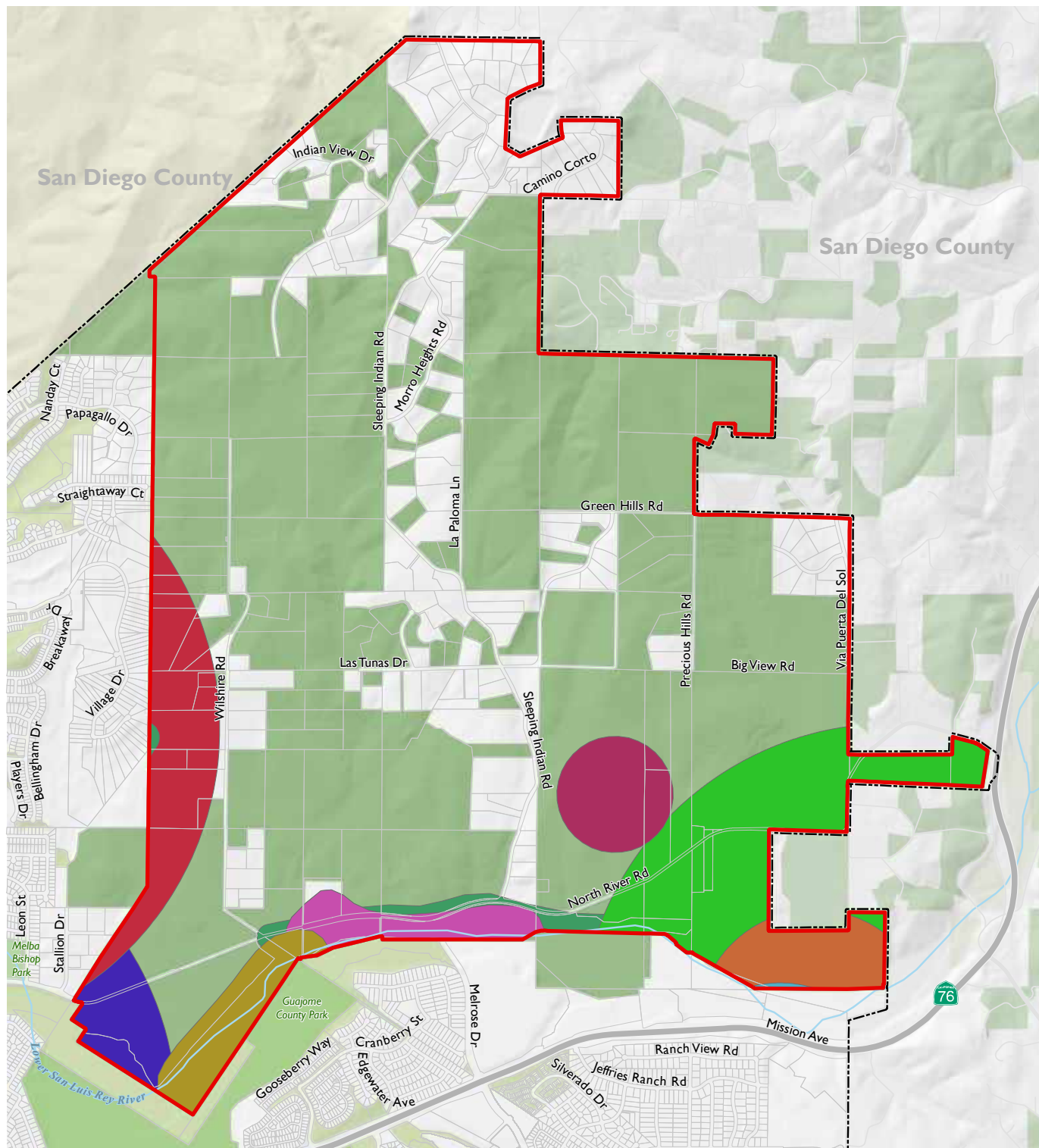
**TABLE 4-3: Potential Areas of Occurrence of Special Status Species**

<i>Common Name</i>	<i>Presence</i>	<i>Occurrence Type</i>	<i>Federal Listing</i>	<i>State Listing</i>
Cooper's hawk	Likely to Occur	Natural/Native occurrence	None	None
Least Bell's vireo	Likely to Occur Critical Habitat Present	Natural/Native occurrence	Endangered	Endangered
Orange-throated whiptail	Likely to Occur	Natural/Native occurrence	None	None
Parry's tetracoccus	Likely to Occur	Natural/Native occurrence	None	None
Southwestern willow flycatcher	Likely to Occur Critical Habitat Present	Natural/Native occurrence	Endangered	Endangered
Stephens' kangaroo rat	Not Expected to Occur	Natural/Native occurrence	Endangered	Threatened
Tricolored blackbird	Low to Moderate Potential to Occur	Natural/Native occurrence	None	Endangered
Western spadefoot	Likely to Occur	Natural/Native occurrence	None	None
Yellow warbler	Likely to Occur	Natural/Native occurrence	None	None
Yellow-breasted chat	Likely to Occur	Natural/Native occurrence	None	None
Arroyo toad	None Reported Critical Habitat Present	-	Endangered	None
Coastal California gnatcatcher	None Reported Critical Habitat Present	-	Threatened	None

Source: CDFW, 2019.













**FIGURE 4-8: Special Status Species**

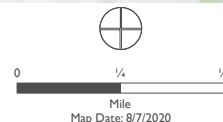


Source: SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

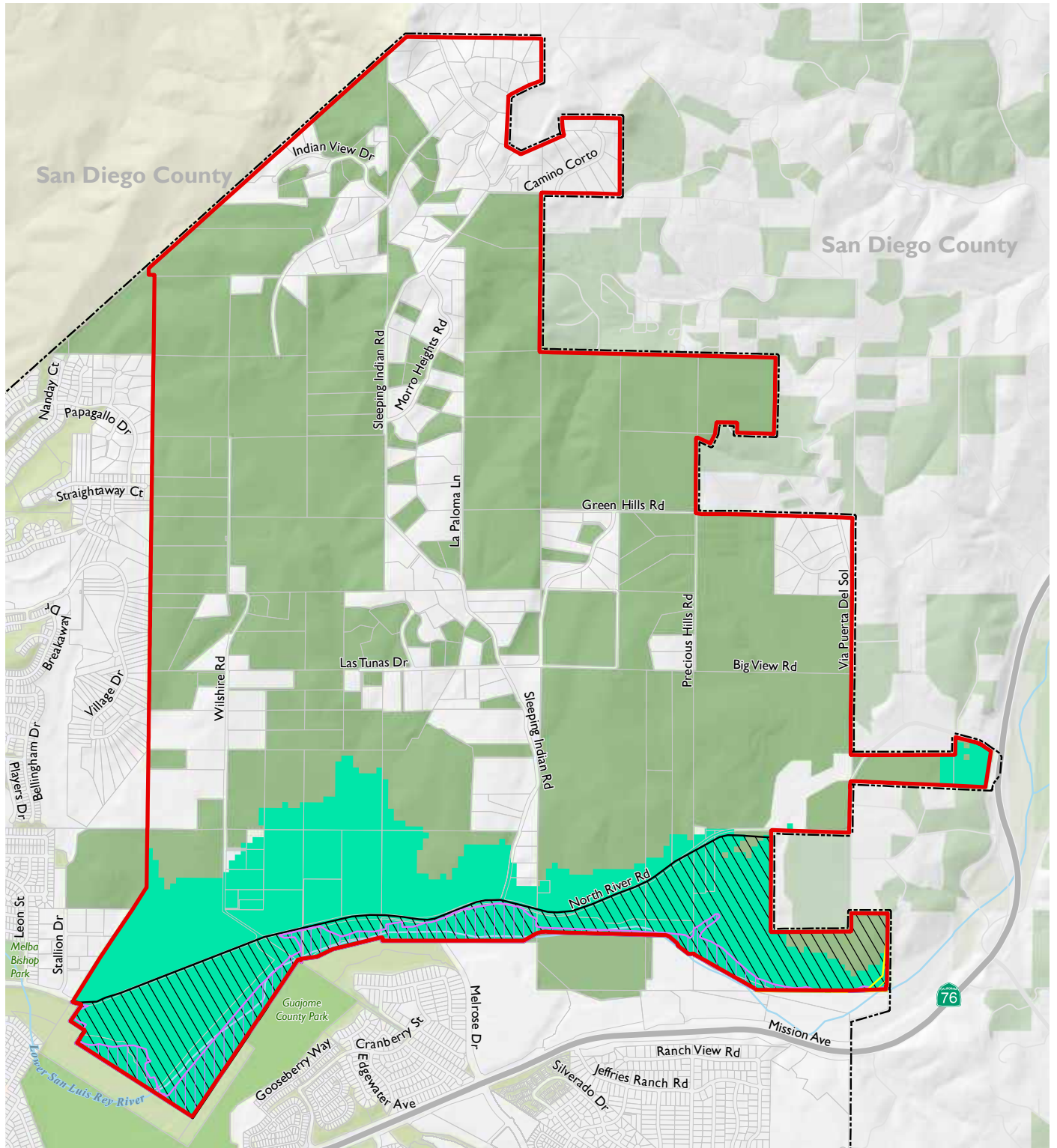
**Potential Areas of Occurrence of Special Status Species**

- |  |  |
|--|--|
|  Cooper's hawk            |  Southwestern willow flycatcher |
|  Parry's tetracoccus      |  Tricolored blackbird           |
|  Stephens' kangaroo rat   |  Western spadefoot              |
|  Least Bell's vireo       |  Yellow warbler                 |
|  Orange-throated whiptail |  Yellow-breasted chat           |

-  South Morro Hills Community Plan Area
-  City of Oceanside
-  Park
-  Agriculture
-  Open Space
-  Park or Preserve
-  Military Training
-  River/Creek



**FIGURE 4-9: Critical Habitats**

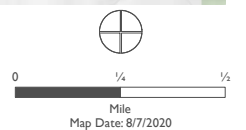


Source: Recon, 2020; SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

- Arroyo Toad
- Coastal California Gnatcatcher
- Least Bell's Vireo
- Southwestern Willow Flycatcher

- South Morro Hills Community Plan Area
- City of Oceanside

- Park
- Agriculture
- Open Space
- Park or Preserve
- Military Training
- River/Creek



## 4.4 AGRICULTURAL RESOURCES

Agriculture in this South Morro Hills area is both a natural resource and supports a portion of the city’s economic base. While the area has a rich history of agricultural production, the Planning Area is subject to development pressures associated with the demand for housing and the high economic returns associated with development. Large available swaths of land and reducing returns on family farming operations can create additional demands to convert agricultural land to housing.

### FARMLAND

Through its Farming Mapping and Monitoring Program (FMMP), the California Department of Conservation produces agricultural resource inventories and maps based on soil quality and land use within California. These inventories and maps are updated every two years. Figure 4-10: Farmland depicts the location of the different farmland categories within the Planning Area as identified by the FMMP. Table 4-4 delineates the acreage for each category. As shown, the FMMP identifies a majority of the Planning Area (86%) as being a type of farmland. It should be noted that the FMMP maps reflect a 10-acre minimum mapping unit which explains the small amount land attributed to urban and built up land. Scattered developed areas are not captured in this mapping.

**TABLE 4-4: Farmland Categories**

FMMP Category	Area (Acres)	Percentage of Planning Area
Farmland of Local Importance	3,409	10%
Farmland of Statewide Importance	370	11%
Other Land	495	14%
Prime Farmland	130	4%
Unique Farmland	2,103	61%
Urban and Built Up Land	1	0%
<b>Total</b>	<b>3,439</b>	<b>100%</b>

Totals may not add due to rounding.

Source: California Department of Conservation, 2016.

The Williamson Act is a statewide mechanism for the preservation of agricultural land and open space land. The act provides a comprehensive method for local governments to protect farmland and open space by allowing lands in agricultural use to be placed under contract (agricultural preserve) between a local governmental and landowner. Under this act, agricultural lands are taxed at their agricultural value rather than their value for higher valued uses. In exchange, the landowner enters into a contract to retain their land in agricultural use for at least 10 years. Within areas under contract, lands are less likely to be subject to development within the near future. Figure 4-11 depicts the location of current Williamson Act lands within the Planning Area.

While the City does not currently have an adopted agricultural mitigation program that provides a mechanism to allow conservation of agricultural resources through mitigation, it may be a consideration as the vision for the community is further developed.



### CROPS

The South Morro Hills farming region supports a diversity of crops. Based on agricultural commodity data maintained by the Pesticide Regulatory Program, San Diego County Department of Agriculture/Weights and Measures, the following types of crops were reported as being produced within the Planning Area:

- arugula
- avocado
- beans
- blueberries
- bok choy
- cherimoya
- grapes
- grapefruit
- kumquat
- lemon
- lime
- orange
- strawberry
- tangelo
- tangerine
- pomegranate
- palm
- raspberry
- sweet basil
- tomato
- tree crops
- tropical/subtropical fruits
- nursery/greenhouse flowers and plants

Generalized agricultural categories as identified by SanGIS are shown in Figure 4-12. Table 4-5 delineates the acreage of each agricultural category reported in the Planning Area. The climate, soils, availability of water, and proximity to markets and infrastructure make South Morro Hills a successful agricultural community. Policy support and actions to support diversification of economic opportunities for agricultural landowners within the Planning Area will be critical to support and strengthen long term viability of agriculture in the region.

**TABLE 4-5: Agricultural Land Use**

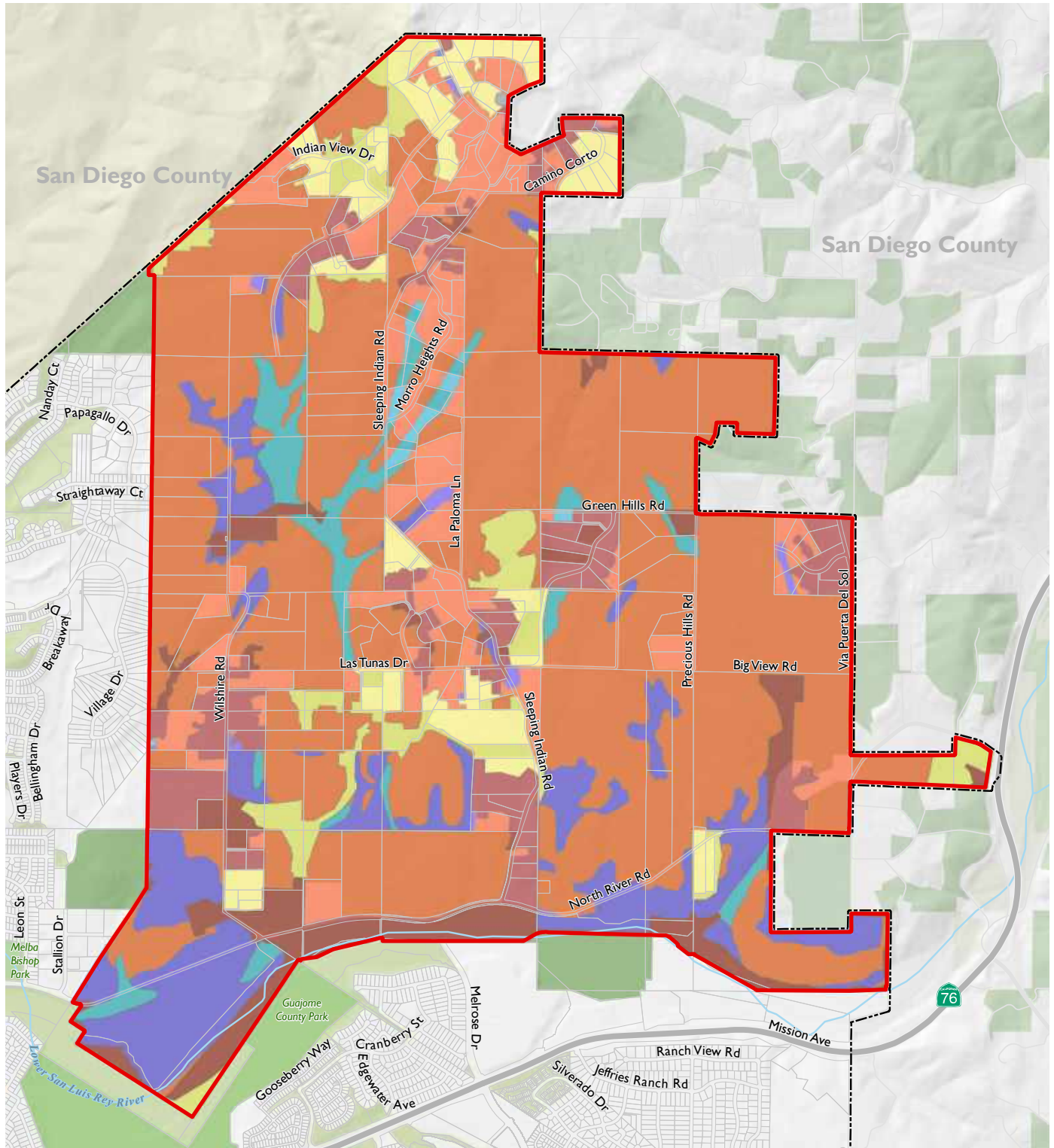
<i>Agricultural Land Use Category</i>	<i>Acreage</i>	<i>Percentage of Planning Area</i>
Extensive Agriculture	1,296	38%
Field/Pasture	85	2%
Intensive Agriculture – Dairies, Nurseries, Chicken Ranches	26	1%
Non-Vegetated Channel, Floodway, Lakeshore Fringe	36	1%
Orchards and Vineyards	1,188	35%
Row Crops	180	5%
Non Agriculture	629	18%
<b>Total</b>	<b>3,439</b>	<b>100%</b>

Totals may not add due to rounding.

Source: SanGIS, 2020.



**FIGURE 4-10: Farmland**



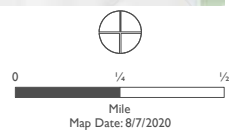
Source: Recon, 2020; SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

**FMMP**

- Farmland of Local Importance
- Farmland of Statewide Importance
- Other Land
- Prime Farmland
- Unique Farmland
- Urban and Built Up Land

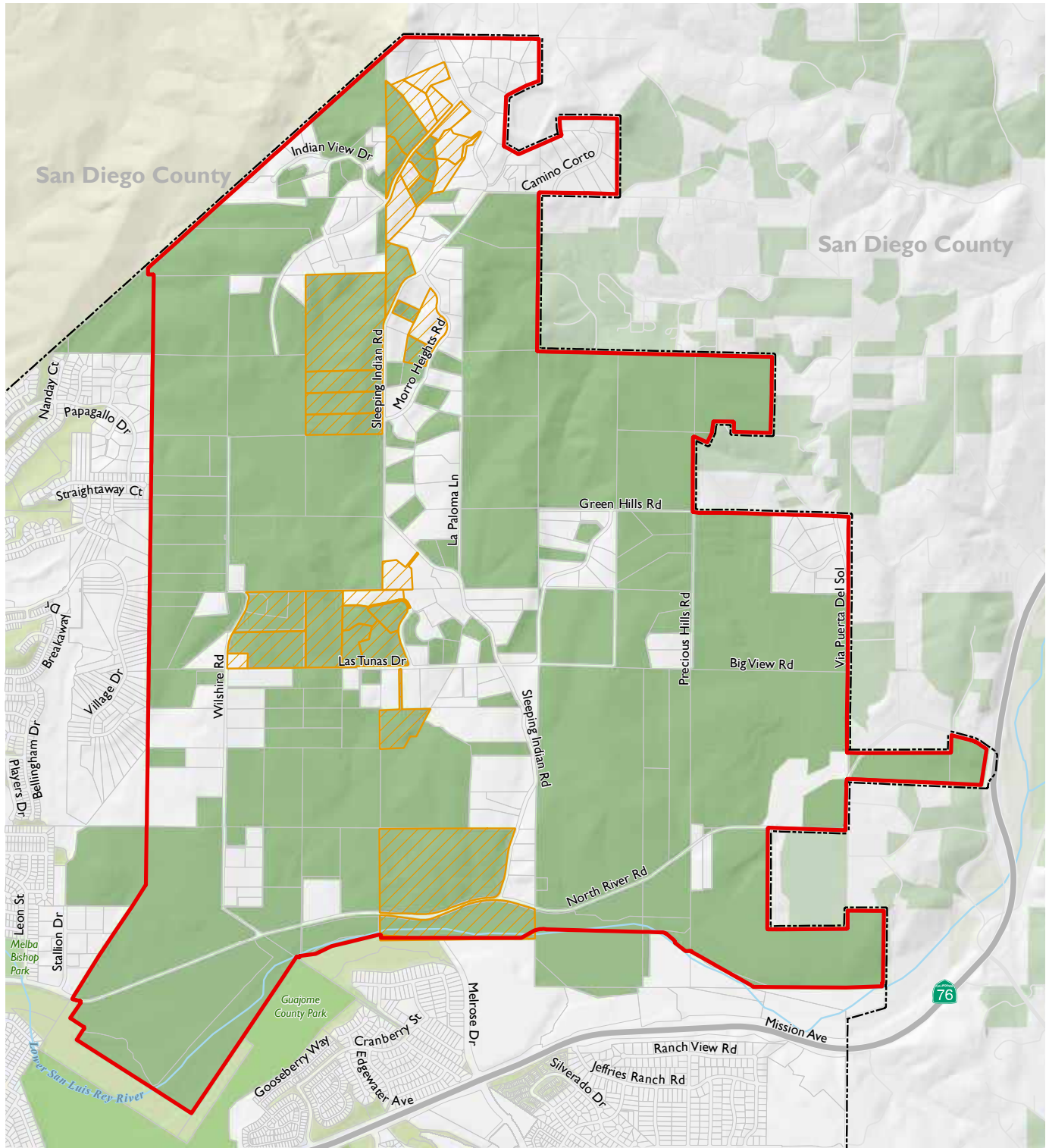
- South Morro Hills Community Plan Area
- City of Oceanside

- Park
- Agriculture
- Open Space
- Park or Preserve
- Military Training
- River/Creek



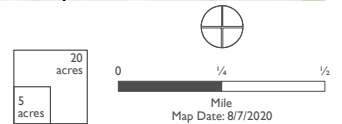


**FIGURE 4-11: Williamson Act Contracts**

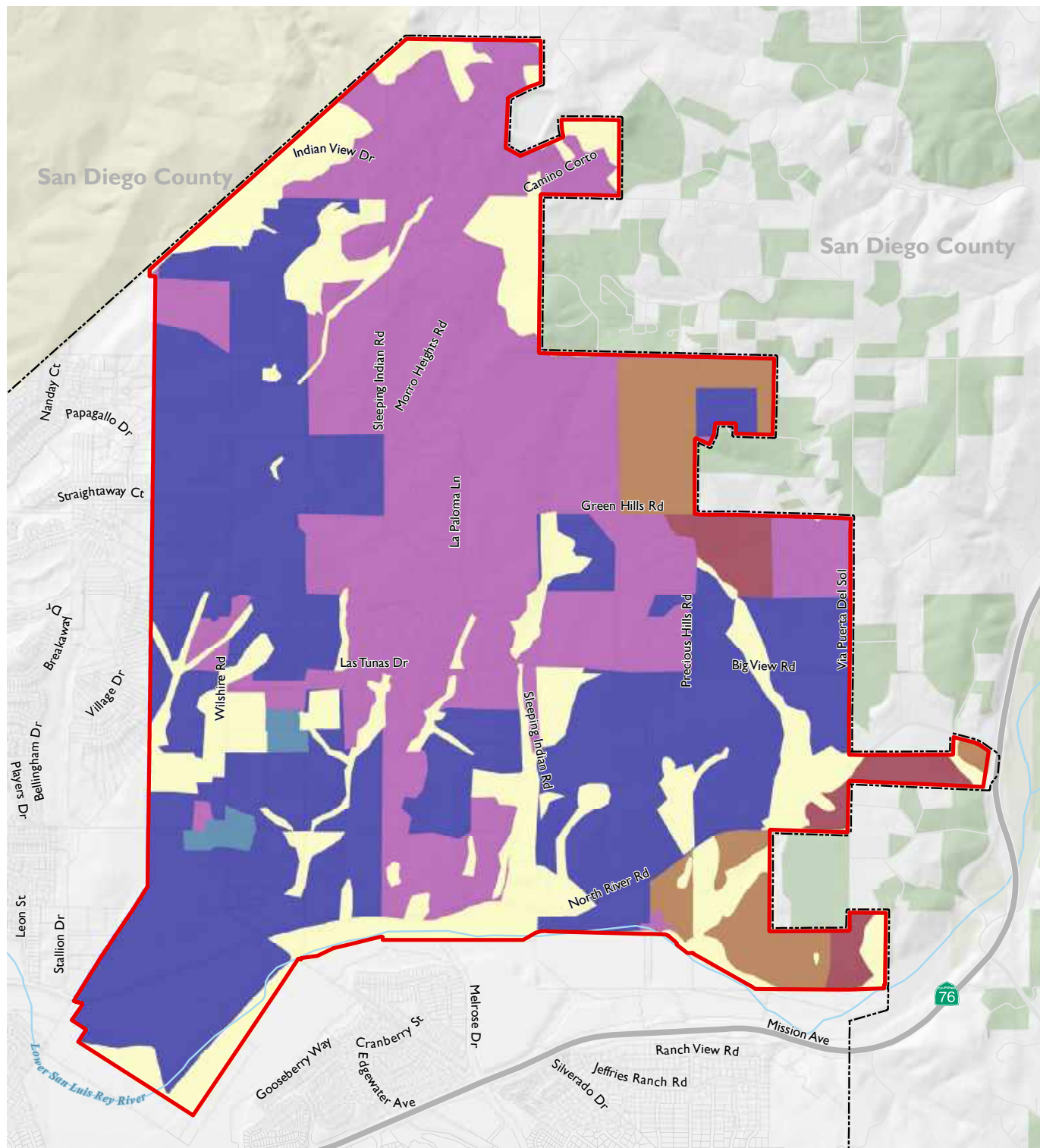


Source: Recon, 2020; SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatta, 2020

-  Williamson Act Contracts
-  South Morro Hills Community Plan Area
-  City of Oceanside
-  Park
-  Agriculture
-  Open Space
-  Park or Preserve
-  Military Training
-  River/Creek



**FIGURE 4-12: Agricultural Categories**

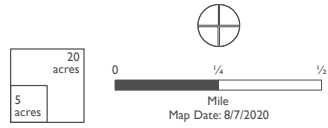


Source: Recon, 2020; SanGIS, 2020; City of Oceanside, 2020; Dyett & Bhatia, 2020

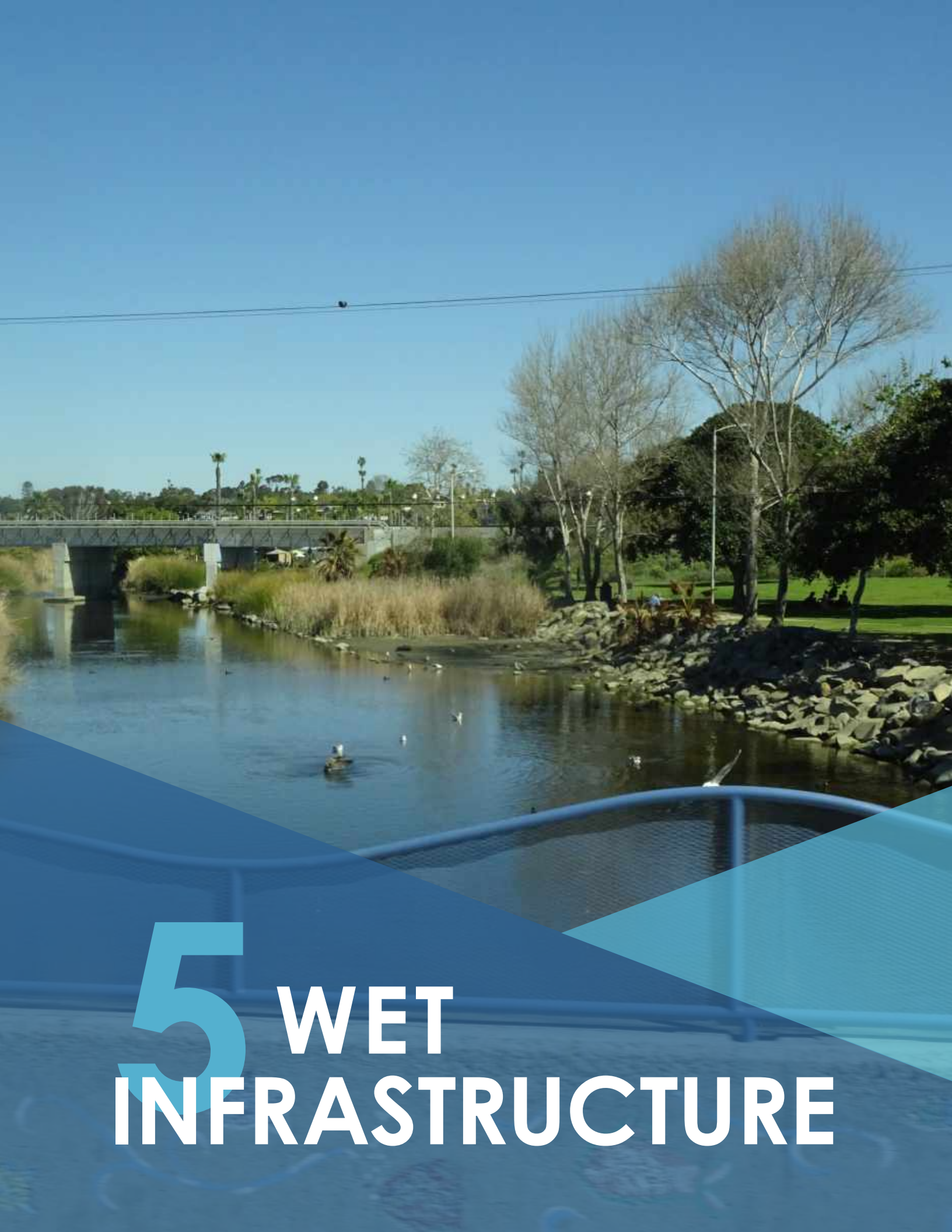
**Agricultural Categories**

- Non Agricultural
- Extensive Agriculture - Field/Pasture, Row Crops
- Field/Pasture
- Intensive Agriculture - Dairies, Nurseries, Chicken Ranches
- Orchards and Vineyards
- Row Crops

- South Morro Hills Community Plan Area
- City of Oceanside
- Park
- Agriculture
- Open Space
- Park or Preserve
- Military Training
- River/Creek



Map Date: 8/7/2020



# 5 WET INFRASTRUCTURE



The following section provides a brief description of the existing wet utility infrastructure within the Planning Area and preliminary assessment of evaluations that will be necessary to project future improvement needs.

## 5.1 WATER SUPPLY

### EXISTING WATER SYSTEM INFRASTRUCTURE

The City of Oceanside receives its water supply from the San Diego County Water Authority and services both agricultural and residential users in the Planning Area. As shown in Figure 5-1, the potable water system underlies North River Road, Sleeping Indian Road, Wilshire Road and Las Tunas Drive. The infrastructure extends to the north, serving several higher elevation pressure zones, ultimately supplying two existing potable water storage reservoirs (Morro Hills 1 and 2) that provide static pressure, operational storage, emergency storage and fire storage.

Pressure zones in the area include the North River (HGL 420-ft), the Wilshire (HGL 480-ft), the Morro Hills (HGL 738-ft) and the Morro Hills Pump Station (HGL 1,000-ft). The two 5-MG Morro Hills Reservoirs provide storage for the Morro Hills Zone. The Sleeping Indian and Morro Reservoir Pump Stations boost water from the Morro Hills zone to the Morro Hills Pump Station Zone. Pipeline diameters in the area range from 6- to 24-inches, with some smaller 2-inch service lines. The 2015 Water Master Plan provides a summary of the existing (2015) and future (2050) maximum day demands of each of the above pressure zones within the Planning Area, shown in Table 5-1. Future projections were based on the SANDAG 2050 Regional Growth Forecast, combined with per capita water use estimations. There are two points of connection to the rest of the City potable water distribution system, including a 14-inch pipeline on River Road and a 14-inch cross-country pipeline west of Wilshire to the north, providing two sources of connection.



**TABLE 5-1: Existing and Future Maximum Day Demands by Zone**

Pressure Zone	Existing (2015) MDD (mgd)	Future (2050) MDD (mgd)
North River Road	0.88	0.89
Wilshire	0.76	1.23
Morro Hills	0.26	0.49
Morro Hills PS	0.64	0.60

Note: Table does not show the impacts of conversion of agricultural land.

Source: City of Oceanside, 2015; Dudek, 2020.

## FUTURE DEVELOPMENT

The City's 2015 Water Master Plan used land use and growth assumptions from the 2002 General Plan and identified the potential for replacement of 3,000 acres of agricultural land with 600 to 1,000 homes within the South Morro Hills Planning Area. While impacts of this conversion was not included as part of the forecasted water demand and capacity, it was recommended to be incorporated in a separate study.

It is anticipated that most future development will occur in the vicinity of Sleeping Indian Road in the Wilshire Zone, and existing infrastructure in this area (10- and 12-inch diameter pipelines) could support development. Assuming land use changes only consist of converting agricultural to residential uses, fire flow demand within the area should not change. Depending on existing regional water demands for agricultural irrigation, conversion of some parcels to residential could reduce water demand, though regional impacts of converting agricultural land use to low density residential use will need to be evaluated. The City is undertaking the installation of a recycled water system within the Planning Area, with the goal of selling recycled water to existing agricultural irrigation customers. This conversion may also result in a reduction in water demand to the area.

Both an estimate of conversion from existing agricultural demands from potable to recycled water, and conversion from existing agricultural to low density residential will be evaluated based on proposed land use changes. If the new projected demand is greater than that projected in the 2015 Water Master Plan, the capacity to accommodate this demand within prior recommended improvements will be evaluated. However, given that agricultural use is water intensive, and in addition, recycled water infrastructure is being extended, future freshwater demand could be lower. Future water demand will be evaluated as part of the South Morro Hills Community Plan development in the coming months.

## 5.2 WASTEWATER

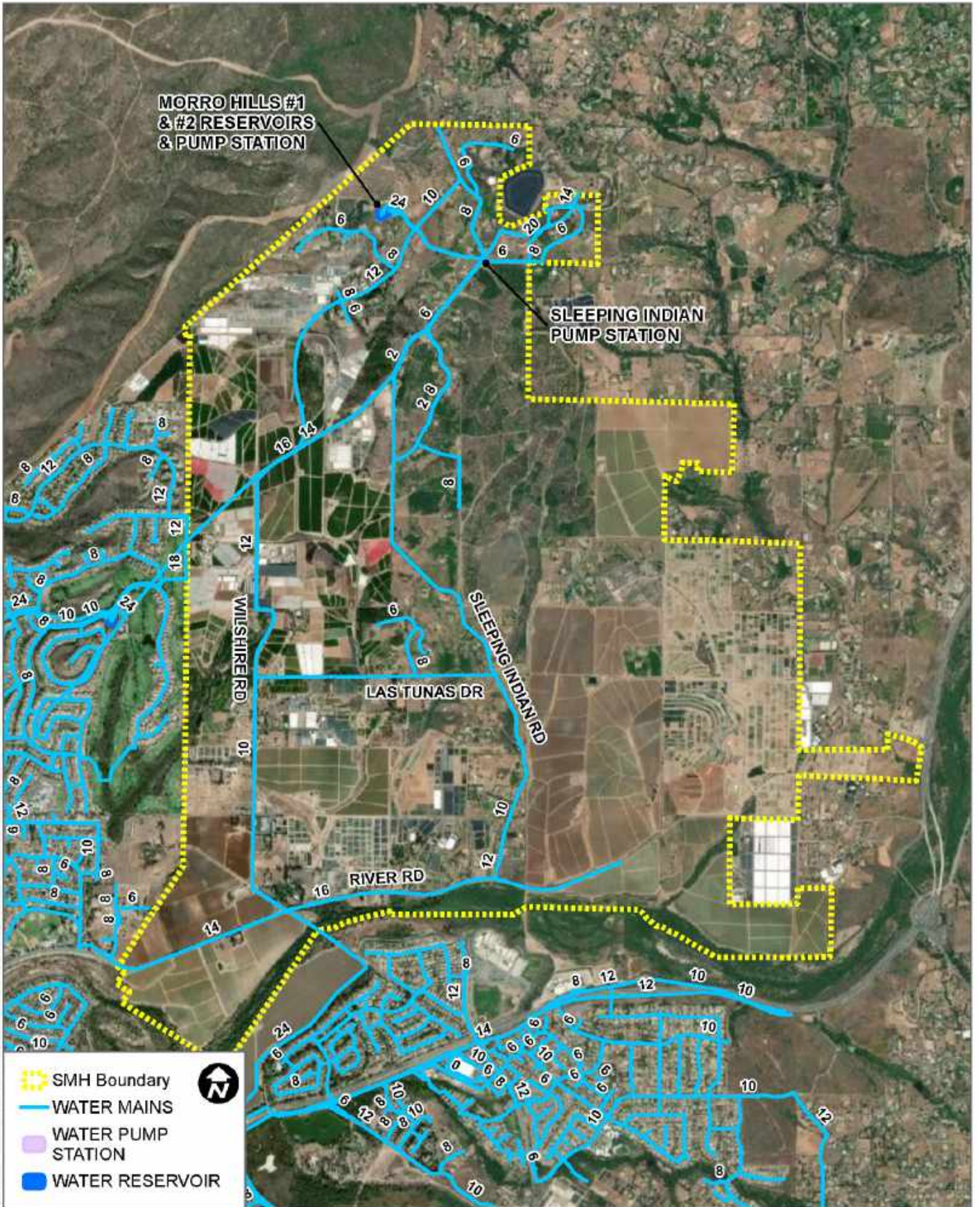
### EXISTING WASTEWATER INFRASTRUCTURE

The Planning Area is outside of the City's current sewer service area boundary, and all existing homes in the Planning Area utilize individual private septic systems. As shown in Figure 5-2, there is a 15-inch diameter trunk sewer in North River Road that conveys wastewater from Rainbow Municipal Water District to the San Luis Rey Water Reclamation Facility (SLRWRF). No other sewer infrastructure exists within the Planning Area. Because the Planning Area was outside the City's existing sewer collection system, it was excluded from demand and capacity evaluation in the 2015 Sewer Master Plan.

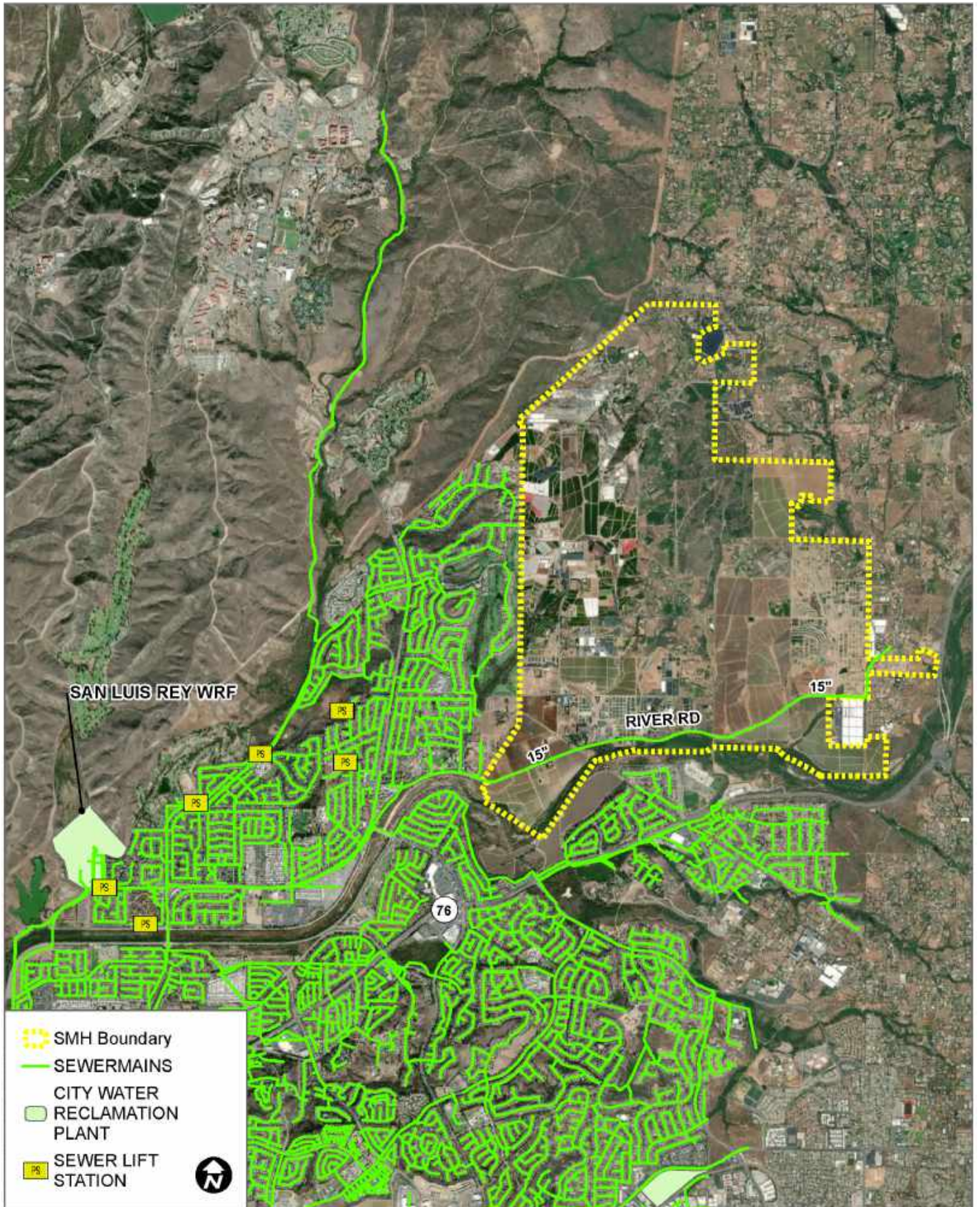
### FUTURE DEVELOPMENT

In future, the City would require new construction of parcels within 100 feet from Sleeping Indian Road to connect to a new City sewer collection system. The new system would convey flow in a southerly direction to River Road and connecting to the existing interceptor system within North River Road. The total projected ultimate sewer flow from South Morro Hills must be conveyed to the San Luis Rey Treatment Plant. More intensive development of South Morro Hills would require the area to be connected to the city's sewer system. The projected sewer flows of both the septic conversions of existing parcels and the development of new parcels along Sleeping Indian Road and elsewhere will be calculated based on similar methods used in the 2015 sewer master plan. These flows, including the consideration of peak wet weather defect flows, will be conveyed into the sewer pipeline within North River Road. The existing sewer pipelines downstream of South Morro Hills must be evaluated to confirm available capacity with the City's design standards. If it is determined that existing infrastructure downstream of South Morro Hills requires upsizing, the cost of these improvements should be included as part of the overall cost for Planning Area development.

**FIGURE 5-1: Existing Potable Water Infrastructure**



**FIGURE 5-2: Existing Sewer Infrastructure**



## 5.3 STORMWATER

### EXISTING STORMWATER INFRASTRUCTURE

The majority of the stormwater conveyance system in the South Morro Hills Planning Area includes a series of ditches, channels and culverts that convey surface runoff to Pilgrim Creek and San Luis Rey River and ultimately to the Pacific Ocean. A significant portion of the culverts are located along River Road, with isolated culverts existing at other roadway crossings along Wilshire, Sleeping Indian and Las Tunas.)

The City's Clean Water Program is tasked with improving water quality in local river, creeks, lagoons and ocean in accordance with the San Diego Regional Water Quality Control Board. To reduce pollutants in the storm drain, the City implements and requires Best Management Practices (BMPs) for residential, industrial, commercial, construction and municipal sites, such as biofiltration or stormwater retention mechanisms. The San Luis Rey Watershed Management Area Water Quality Improvement Plan identifies specific water quality priority conditions and implementation strategies to achieve the established water quality goals and objectives. Additionally, the City's jurisdictional programs are implemented to address the highest priority water quality conditions within the Water Quality Improvement Plans.

### FUTURE DEVELOPMENT

The Master Plan of Drainage identifies several facilities recommended for upgrades of the 100-year storm event in the Planning Area. As development increases in this area, the increase of impervious surfaces will require improved stormwater conveyance in accordance with the City's Storm Water Management requirements. Additionally, the City's storm water management requirements will need to be implemented based on the guidance of the latest BMP Design Manual. Additionally, the City's storm water management requirements will need to be implemented based on the guidance of the latest BMP Design Manual, including site design/low impact development practices; detention and retention of runoff near points where it occurs, with information gathered to determine appropriate receiving areas; harvest and use techniques; and other best management practices.





**FIGURE 5-3: Existing Stormwater Infrastructure**

