

7. Environmental Hazards and Community Health

7.1 NOISE

Noises are undesirable sounds that vary widely in their scope, source, and volume. In Mission Valley, they range from individual occurrences, such as leaf blower or holiday firecrackers, to regular through intermittent disturbance by aircraft flying overhead and the trolley passing, to the fairly constant noise generated by traffic on freeways and roads. Noise is primarily a concern to sensitive land uses, such as residences and schools. This section describes noise regulations and existing conditions in Mission Valley. A more detailed analysis is provided in the preliminary draft noise analysis for the *Mission Valley Community Plan Update*, City of San Diego (Recon Environmental, Inc. for the City Of San Diego, 2015.)

Regulations

Federal noise standards include transportation-related noise sources related to interstate commerce (i.e., aircraft, trains, and trucks) for which there are not more stringent state standards. State noise standards are set for automobiles, light trucks, and motorcycles.

The City’s Noise Element specifies compatibility standards (maximum noise levels) for different categories of land use. The City’s Municipal Code regulates impacts to sensitive receptors generated by activities at a given location. The Noise Ordinance specifies maximum one-hour average sound level limits at the boundary of a property.

Sources

Noise sources are typically categorized as mobile or stationary. The majority of mobile sources are transportation related from vehicles operating on roadways, aircraft and airport operations, and railroad activities. Stationary noise sources typically include machinery; fabrication; construction; heating, ventilation, and air conditioning systems; compressors and generators; and landscape maintenance equipment. Stationary noise sources from light industrial and commercial activities can be a problem when these operations are adjacent to residential land uses (collocation).

Noise Levels

Mobile Sources

The dominant noise source in Mission Valley is vehicle traffic on roadways. The roadways generating the greatest noise level in the area are I-5, I-8, I-15, I-805, and Friars Road. The noise contours shown in Figure 7-1 represent the predicted noise level based on roadway volumes, the percent of trucks, speed and other factors. They do not reflect the attenuating effects of noise barriers, structures, topography, or dense vegetation and should not be considered site-specific.

The figure also represents the predicted levels of railway noise from the Green Line trolley. The trolley’s noise is generated by its trains and emergency signaling devices.

As shown in the figure, existing noise levels often exceed 65 CNEL in Mission Valley. This is considered a threshold for a generally acceptable level of noise when outdoors. (CNEL, the community noise equivalent level, adjusts for the annoyance of noise in the evening and nighttime hours.)

Ambient Noise Levels

Ambient noise levels were measured in Mission Valley to characterize the variability of noise and to assist in determining constraints and opportunities to avoid noise conflicts. Fifteen minute, daytime noise level measurements were conducted throughout Mission Valley, as shown in Table 7-1.

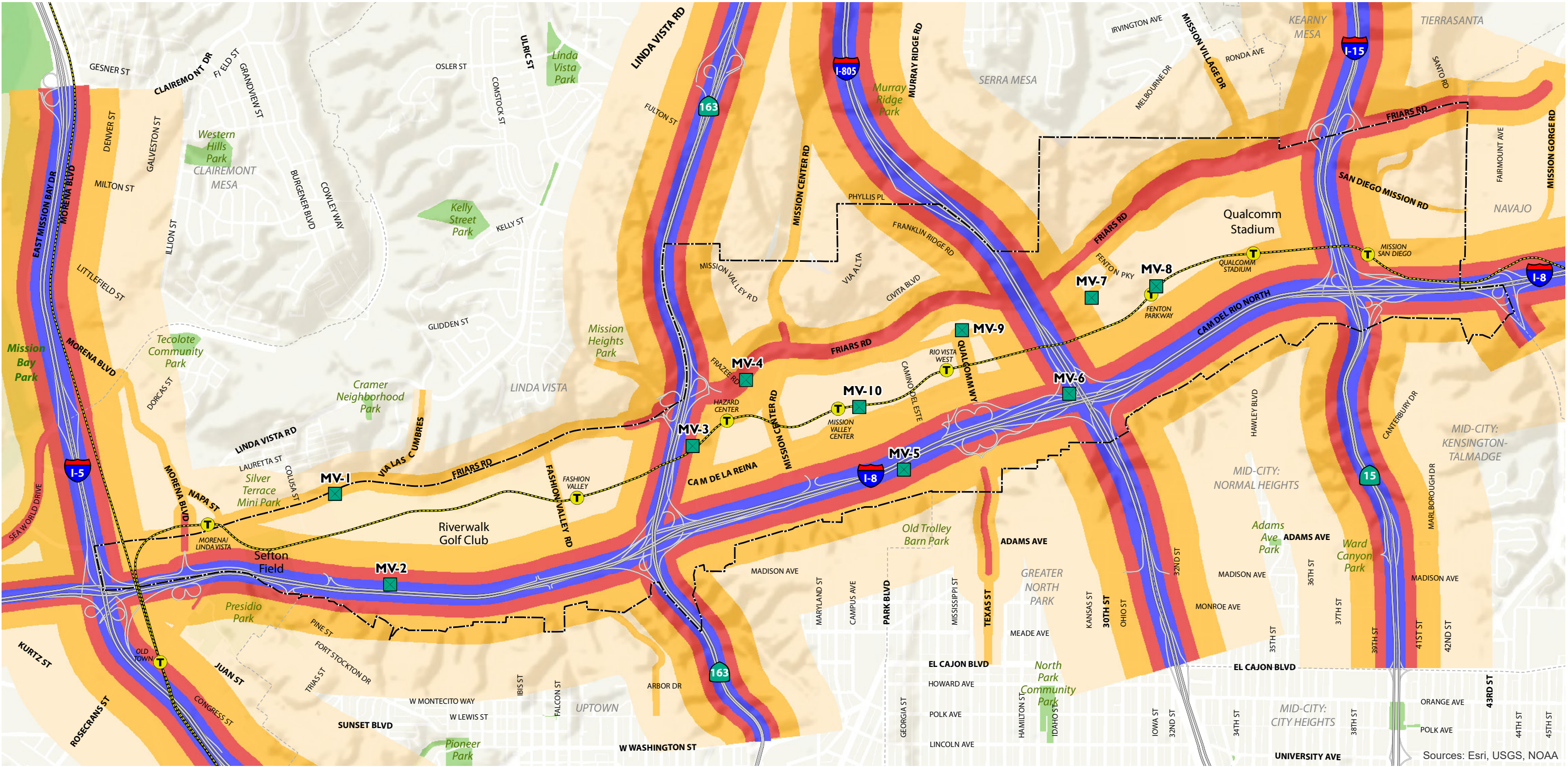
Table 7-1: Ambient Noise Levels

ID	Location	Date	Time	L _{eq} ¹
MV-1	Friars Road at Goshen Street	9/16/2015	1:07 P.M. – 1:22 P.M.	63.4
MV-2	Hotel Circle North east of the Crowne Plaza	9/16/2015	2:00 P.M. – 2:15 P.M.	65.1
MV-3	Hazard Center Drive west end	9/16/2015	2:41 P.M. – 2:56 P.M.	66.1
MV-4	Friars Road east of Frazee	9/16/2015	3:47 P.M. – 4:02 P.M.	65.2
MV-5	Camino Del Rio South at the Scottish Right Event Center	9/16/2015	4:36 P.M. – 4:51 P.M.	73.0
MV-6	I-8 at I-805	9/16/2015	5:28 P.M. – 5:43 P.M.	76.4
MV-7	Rio San Diego Drive east of River Run Drive	9/17/2015	9:22 A.M. – 9:37 A.M.	56.2
MV-8	Fenton Parkway south end	9/17/2015	9:58 A.M. – 10:13 A.M.	59.9
MV-9	Qualcomm Way at Rio San Diego Drive	9/17/2015	11:03 A.M. – 11:18 A.M.	65.4
MV-10	San Diego Trolley east of Mission Valley Center Station	9/17/2015	12:12 P.M. – 12:27 P.M.	60.2

¹ The equivalent noise level (Leq), also referred to as the time-average sound level, is the equivalent stead state sound level over a stated period of time.

Source: Preliminary Draft Noise Analysis for the Mission Valley Community Plan Update City of San Diego

Figure 7-1: Existing Noise Contours



- Trolley Stops

Light Rail

Freeways

Ramps

Streams/Creeks
- Existing Noise Levels

75 dB

70 dB

65 dB

60 dB
- Noise Measurement Locations

Existing Parks

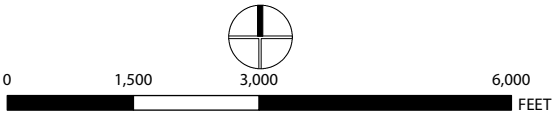
Mission Valley Community Plan Boundary

Community Planning Areas

*Note: The depicted noise contours do not reflect the attenuating effects of noise barriers, structures, topography, or dense vegetation and should not be considered site-specific.

*Note: The Average Daily Trips (ADT) are labeled on the map for the roadway 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



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7.2 AIR QUALITY

Air pollution may adversely affect human or animal health, reduce visibility, and damage the natural environment. Understanding the risks from air pollution will help the City and community consider both impacts on existing residents as well as potential locations of new sensitive receptors (e.g., homes, schools, or daycare centers) in light of air pollution sources. This section summarizes existing air quality in Mission Valley, including regulations, sources of air pollution, current conditions, and adopted improvement strategies. A more detailed analysis is provided in the *Preliminary Draft Air Quality Analysis for the Mission Valley Community Plan Update, City of San Diego* (RECON Environmental, Inc. for the City of San Diego, 2015.)

Sources and Standards

Motor vehicles are San Diego County's leading source of air pollution.¹ Emission standards for mobile sources are established by state and federal agencies, such as the California Air Resources Board (CARB) and the Environmental Protection Agency (EPA). The State of California has developed statewide programs to encourage cleaner cars and cleaner fuels. Since 1996, smog-forming emissions from motor vehicles have been reduced by 15 percent, and the cancer risk from exposure to motor vehicle air toxics has been reduced by 40 percent.²

In addition to mobile sources, stationary sources also contribute to air pollution in the San Diego Air Basin (SDAB). Stationary sources include gasoline stations, power plants, dry cleaners, and other commercial and industrial uses. The local air pollution control or management district, in this case the San Diego County Air Pollution Control District (SDAPCD), regulates stationary sources of air pollution.

Standards are applied at the federal, State and local levels, as illustrated below:

- Federal Ambient Air Quality Standards represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. The federal Clean Air Act (CAA) enabled the EPA to develop primary and secondary national ambient air quality standards.
- The State of California has developed the California Ambient Air Quality Standards and generally has set more stringent limits on the six criteria pollutants. The California CAA also requires that pollution control districts implement regulations to reduce emissions from mobile sources through transportation control measures.
- The SDAPCD currently maintains 10 air quality monitoring stations throughout the San Diego metropolitan area. These stations continuously record air pollutant concentrations and meteorological information. Scientists use the measurements recorded at these stations to help forecast daily air pollution levels.

Conditions

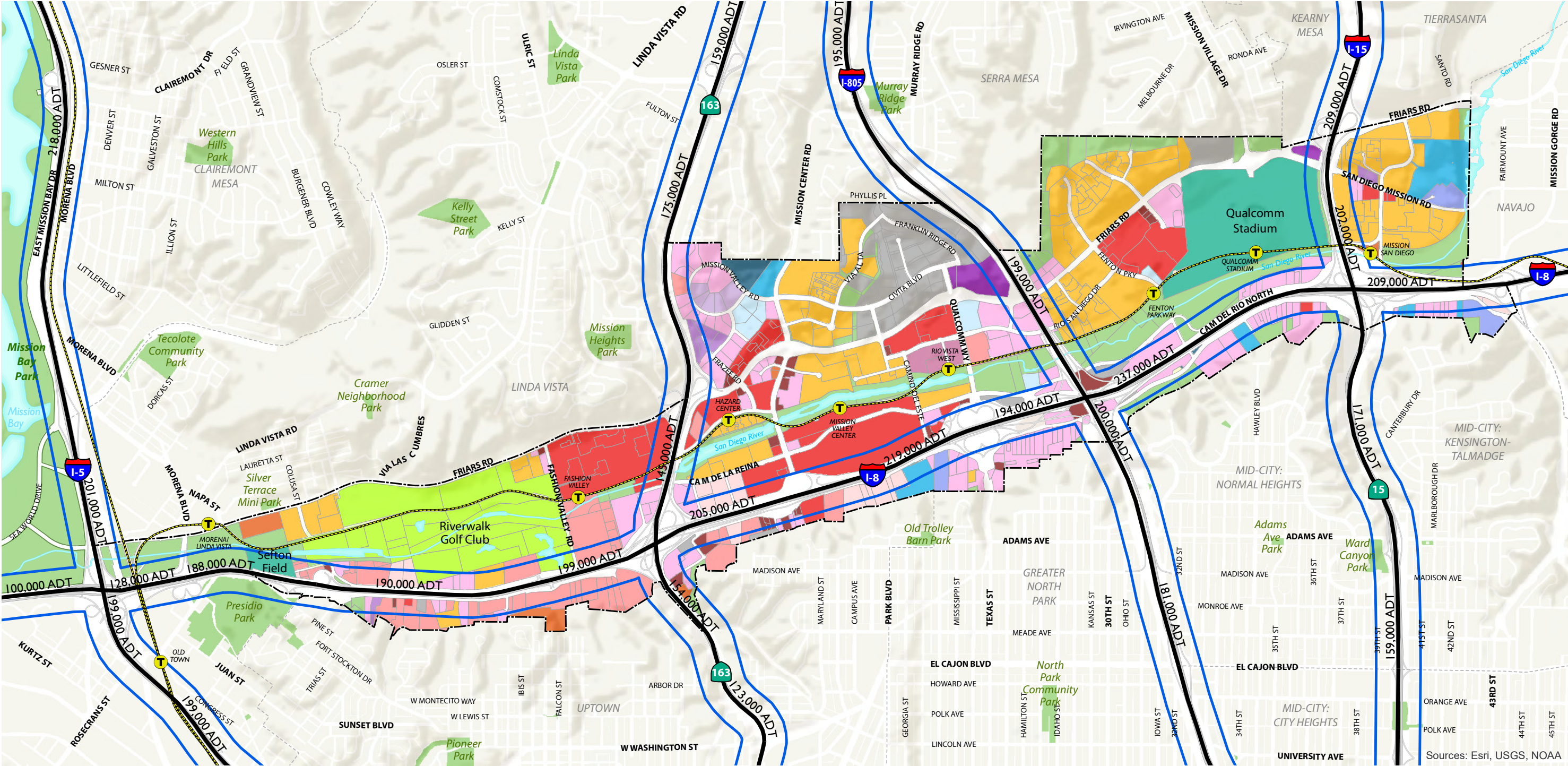
The SDAB is a non-attainment area for the State ozone standards, the State PM₁₀ (inhalable particulate matter) standard, and the State PM_{2.5} (fine particulate matter) standard; in other words, the SDAB exceeds the thresholds set by the State for these three pollutants. The two air quality monitoring stations located closest to Mission Valley (at 6125A Kearny Villa Road and at 1110A Beardsley Street, both approximately four miles away) provide more localized information for the years 2010 through 2014:

- Ozone. At the Kearney Villa Road monitoring station, the national eight-hour standard was exceeded on one day in 2011, 2012, and 2013. The stricter State standard was exceeded: on two days in 2011, three days in 2012, one day in 2013, and four days 2014. At the Beardsley Street monitoring station, the national eight-hour standard was not exceeded. The state eight-hour standard was only exceeded on two days in 2014.
- PM₁₀. At the Kearney Villa Road monitoring station, neither the State nor federal standard was exceeded in the years 2012 through 2014; data is unavailable for the years 2011 and 2012. At the Beardsley Street, the stricter State standard was only exceeded on one day in 2013. The federal standard was not exceeded.
- PM_{2.5}. The federal standard was not was exceeded in the years 2012 through 2014; data is unavailable for the years 2011 and 2012. There is no separate 24-hour State standard.

¹ County of San Diego. "Air Quality in San Diego County." 2007 Annual Report. San Diego Air Pollution Control District. 2008.

²Ibid.

Figure 7-2: Land Use Siting Constraints



- Roadways Currently Carrying More Than 100,000 Vehicles per Day*

500 ft Buffer along Roadways currently carrying more than 100,000 vehicles per day

Light Rail
- Single-Family Residential

Multifamily Residential

Mixed Use Residential

Auto Commercial

Hotel/Motel/Lodging Commercial
- Retail/General Commercial

Service Commercial

Recreation Commercial

Office

Business Park/Light Industrial
- General Industrial/Warehousing

Heavy Industrial

Educational/Institutional

Religious Facilities

Public/Government
- Sports/Recreational Facilities

Golf Course

Open Space/Undevelopable Natural Areas

Utilities

Vacant/Undeveloped Land
- Lakes/Ponds/Bays

Existing Parks

Mission Valley Community Plan Boundary

Community Planning Areas

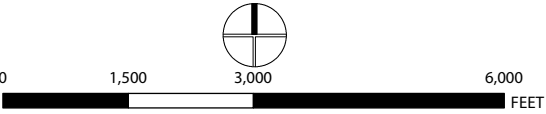
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*Note: The Average Daily Trips (ADT) are labeled on the map for the roadway currently carrying more than 100,000 vehicles per day.

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Dyett & Bhatia, 2015



Attainment And Improvement Strategies

The City already has a range of strategies in place to improve air quality and achieve attainment with federal, state, and local standards. The attainment planning process is embodied in a regional air quality management plan developed jointly by the SDAPCD and SANDAG. Specifically, the San Diego Regional Air Quality Strategy was developed to identify feasible emission control measures and provide expeditious progress toward attaining the State ozone standards.

In addition to the adopted regulations and programs to address air quality and protect public health, CARB and SDAPCD provide guidance on siting land uses to avoid health risks and avoid nuisances. A common component of such guidance is the recommendation to site sensitive land uses outside specified buffers adjacent to or surrounding major emitters or facilities of concern. These strategies help to prevent impacts on sensitive receptors, such as children, seniors, schools and homes.

In Mission Valley, the most significant facilities of concern are I-5, I-8, I-15, I-805, and SR 163, as these are the most probable source of high carbon monoxide and pose the greatest health risk due to air quality in Mission Valley. On this basis, CARB and SDAPCD recommend avoiding the placement of new sensitive land uses within 500 feet of these highways. These setback buffers for these highways are shown in Figure 7-2. It is also recommended that new, sensitive land uses not be placed within 300 feet of dry cleaners, 50 feet of typical gas dispensing facilities, or adjacent to commercial or industrial land uses (collocation). It is important to note that actual air quality conditions are also influenced by local air movement patterns; the buffers should be seen as a generalized tool.

7.3 HAZARDOUS MATERIALS

Past or present industrial, light industrial or commercial sites commonly have hazardous materials released to the subsurface soil and/or groundwater. This section summarizes the findings of the *Hazardous Materials Technical Study, Mission Valley Community Plan Update, San Diego, California* conducted by The Bodhi Group, Inc. for the City of San Diego (2015). The study documents sites that may have been impacted by hazardous materials or wastes; identifies the potential impacts of hazardous materials and wastes; and discusses measures that can be implemented to reduce or mitigate their potential impacts. This study reviews federal, state, local and tribal databases, as well as online regulatory databases (e.g., Geotracker and Envirostor websites). These sources identified 46 sites that met at least one of the following criteria:

- Sites with known unauthorized releases of hazardous chemicals or petroleum under regulatory oversight.
- Sites with subsurface impacts and residual chemicals in Mission Valley.
- Sites outside Mission Valley but where the impacts had the potential to migrate beneath Mission Valley.
- Regulatory status.

These 46 sites are shown in Figure 7-3. Based on the evaluation of the above criteria, the consultant team ranked the sites from 5 (very high hazard) to 1 (very low). A brief description of these rankings is provided in Table 7-2. Seven sites were assigned a Rank of 1; 26 sites were assigned a Rank of 2; ten sites were assigned a Rank of 3; three sites were assigned a Rank of 4; and no sites were assigned a Rank of 5. These results indicate that there are no hazardous sites that would result in severe impacts relative to planned land uses in Mission Valley. In general, the sites in Mission Valley have been subjected to remediation and several have received closure letters; additional remediation and/or notification may be required for some types of new development.

Of the sites with Rank 4, two are associated with bulk petroleum releases at the Mission Valley Terminal and the resulting off-site migration and impacts beneath the Qualcomm Stadium site. Remedial measures at these locations have been successful. The chemicals have not been completely removed and residual levels will result in some impacts, but those can be managed for the future use of the area. There is a risk of mobilizing additional residual chemicals with rising water levels; this risk can be mitigated with continued operation of the remedial system and managed appropriately. The other site with Rank 4 (former Montgomery Ward site) has a remedial measure in place that will need to be re-implemented for future use of the area.

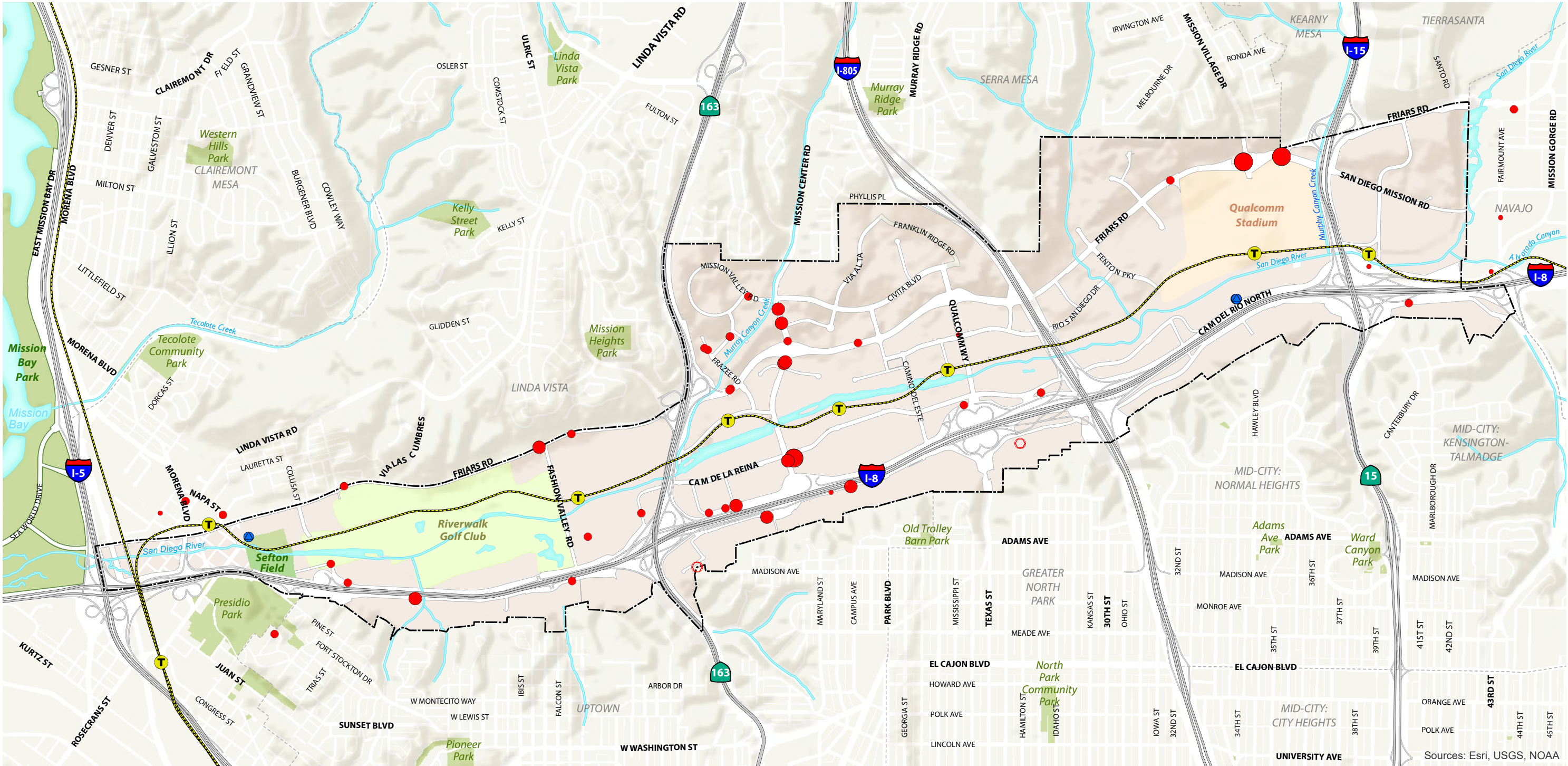
Sites with a Rank of 3 may require additional investigation, and possibly in a few cases, additional remediation if the current standard of practice indicate significant risks to future receptors. Sites with a Rank of 2 will result in impacts if the impacted media (soil, groundwater) is excavated, extracted, or otherwise disturbed for redevelopment. Sites with a Rank of 1 may require no action, other than possible notification to relevant parties.

Table 7-2: Hazardous Site Ranking

Rank	Hazard	Description	Consequences
5	Very High	Potentially acute threat to human health or environment	Immediate action needed to mitigate existing threat. [None in the Planning Area]
4	High	Potentially significant risk to human health or environment	Investigation or remediation needed for existing risk. Or, new development will be subject to remedial measures.
3	Moderate	Potential threat/ risk to human health or environment	Possible investigation needed for existing development. Residual contamination in soil and/or groundwater may necessitate re-opening of case based on human health (Vapor Intrusion pathway) or groundwater impacts and revised closure standards.
2	Low	Less than significant threat/risk to human health or environment	Special management/ notification in case of subsurface work. New development may necessitate verification of closure standards and possible Vapor Intrusion study.
1	Very Low	De minimis condition	No action or special management needed other than possible notification.

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; The Bodhi Group, 2015.

Figure 7-3: Hazardous Materials Sites



Trolley Stops

Light Rail

Freeways

Ramps

River, Creek, Stream

Lakes/Ponds/Bays

Mission Valley Community Plan Boundary

Community Planning Areas

Sites with hazard ranking 1 (very low)

Sites with hazard ranking 2 (low)

Sites with hazard ranking 3 (moderate)

Sites with hazard ranking 4 (high)

Groundwater wells (irrigation)

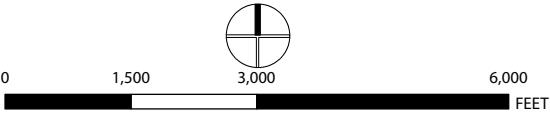
Oil and Gas wells

Sources: Esri, USGS, NOAA

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Dyett & Bhatia, 2015



7.4 COMMUNITY HEALTH

Access to Healthy Lifestyle

Many factors contribute to a community's ability to live healthily. One key factor is whether community members can safely and conveniently access parks and recreational facilities. Close-to-home opportunities to exercise and experience nature contribute to individuals' health and feelings of well-being. Indeed, people who live within walking distance (1/4 mile) of a park are 25 percent more likely to meet their minimum weekly exercise recommendation.³

Convenient access to public transit also helps community members bring healthy living into their daily routines. Almost one-third of Americans who commute to work via public transit meet their daily requirements for physical activity (30 or more minutes a day) by walking as a part of their daily life, including to and from the transit stop.⁴

In turn, regular physical activity has many physical health benefits, including a reduced risk of coronary heart disease, hypertension, strokes, some cancers, and premature mortality.⁵ Regular physical activity also has many attendant emotional health benefits; it reduces depression, anxiety, stress, as well as improves mood and the ability to perform tasks.⁶

As shown in Figure 7-4, the vast majority of Mission Valley is not within walking distance of an existing or proposed park. Although there are indoor gymnasiums and recreational facilities in Mission Valley, which provide additional opportunities for residents to exercise and recreate, many of these are private, and therefore not accessible to all residents. As Figure 7-4 also shows, a large percentage of Mission Valley's residences are also not within walking distance of a transit stop, although many jobs and commercial centers, as well as the San Diego River, are easily accessible via the trolley.

The lack of nearby recreational opportunities and transit facilities is exacerbated by the auto-centric design of much of Mission Valley. As previously discussed in Section 3.2 and illustrated in Figures 3-3 and 3-4, Mission Valley is largely comprised of large blocks and wide, multi-lane roads that cater to cars rather than bicyclists and pedestrians and large extents of streets without shade trees. This type of development is not inviting to bicyclists and pedestrians and disincentivizes these modes of travel for day-to-day activities.⁶

³ L. Frank et al., "Linking Objectively Measured Physical Activity with Objectively Measured Urban Form: Findings from SMARTRAQ", Vol. 28, Issue 2, American Journal of Preventative Medicine, at 117-125 (February 2005).

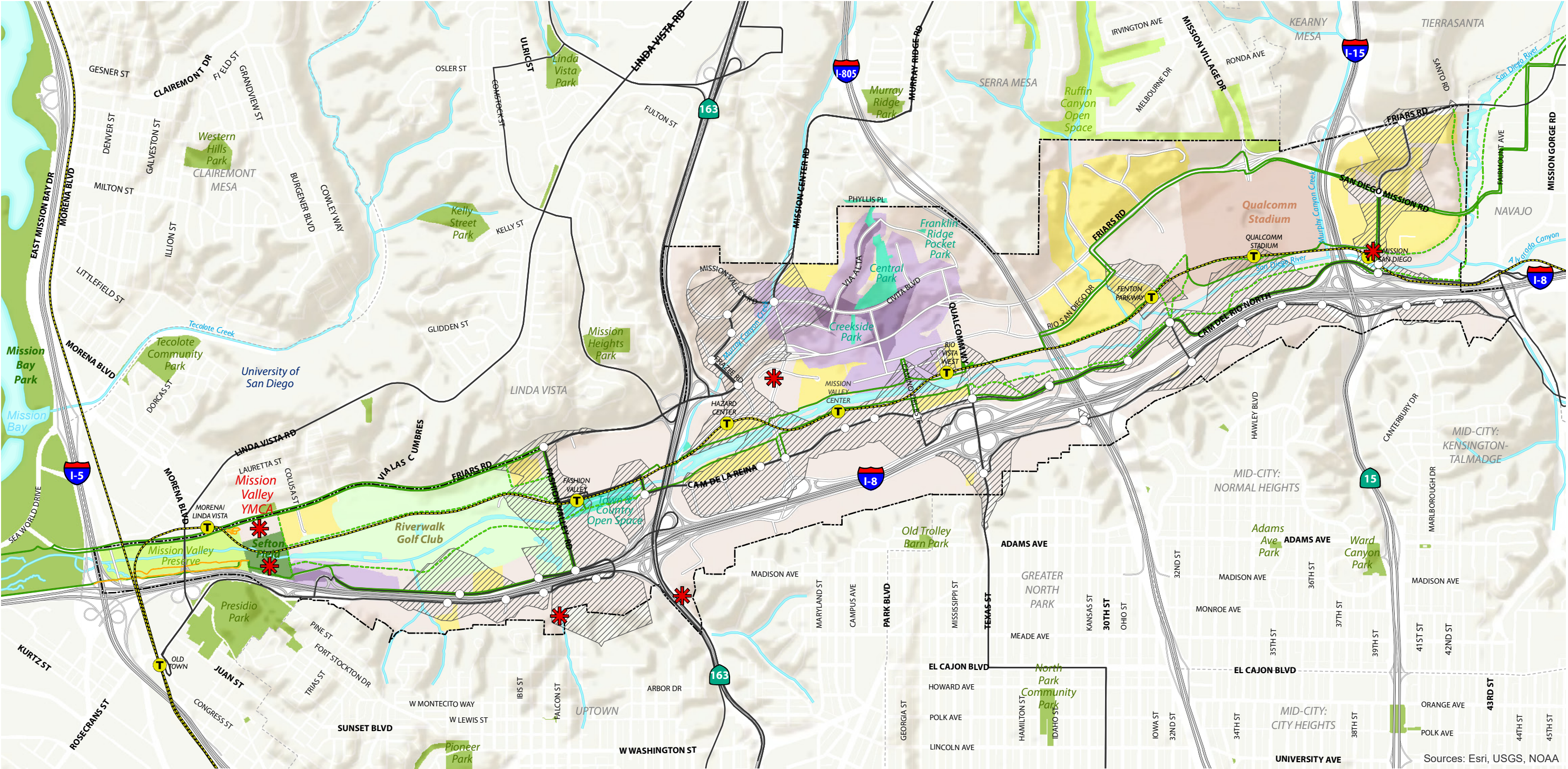
⁴ L. Besser and A. Dannenberg, "Walking to Public Transit: Steps to Help Meet Physical Activity Recommendations". Vol. 32, Issue 4, American Journal of Preventive Medicine, at 273-280 (November 2005).

⁵ U.S. Department of Health and Human Services, Physical Activity and Health: A Report of the Surgeon General (Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 1996), 4-8, <http://www.cdc.gov/nccdphp/sgr/pdf/sgrfull.pdf>.

⁶ Ibid., 8.

⁷ P. Swift, et al., Residential Street Typology and Injury Accident Frequency, originally presented at the Congress for the New Urbanism, Denver CO, (June 1997; updated 2006).

Figure 7-4: Access to Parks, Recreation, and Transit



Trolley Stops

Bus Stops

Fitness Centers/Indoor-Outdoor Sports Facilities

Parks Accessibility (Walkshed)

Residential Areas

Light Rail

Transit Routes*

Existing Parks & Recreation

5 min walking distance (1/4 mile)

Mission Valley Community Plan Boundary

Freeways

Mission Valley Preserve Trails

Golf Course

10 min walking distance (1/2 mile)

Community Planning Areas

Ramps

Existing SD River Trails

Proposed Parks

Transit Accessibility (Walkshed)

Proposed SD River Trails

Lakes/Ponds/Bays

River, Creek, Stream

Proposed SD River Trails

Lakes/Ponds/Bays

Transit Accessibility (Walkshed)

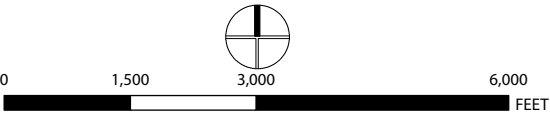
Sources: Esri, USGS, NOAA

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* Mission Valley is served by route 6, 14, 18, 20, 25, 41, 120, 928 & Trolley

Data Source: City of San Diego, 2015; SANGIS Regional GIS Data Warehouse, 2015. (www.sangis.org); San Diego Metropolitan Transit System, 2015; Dyett & Bhatia, 2015



Access to Services

Also important to a community's health is access to community facilities and services that support families and quality of life. A healthy community has convenient access to medical services. When health care facilities are accessible via public transit, medical care is more readily accessible to those who do not drive or own cars. Access to healthy foods is also important to a community's health. The presence of a supermarket in a neighborhood is linked to higher fruit and vegetable consumption, as well as a reduced incidence of obesity.⁸ A healthy community also provides convenient access to schools. Proximity to schools makes it easier for children to walk or bike to school, which, in turn, is associated with higher overall physical activity throughout the day.

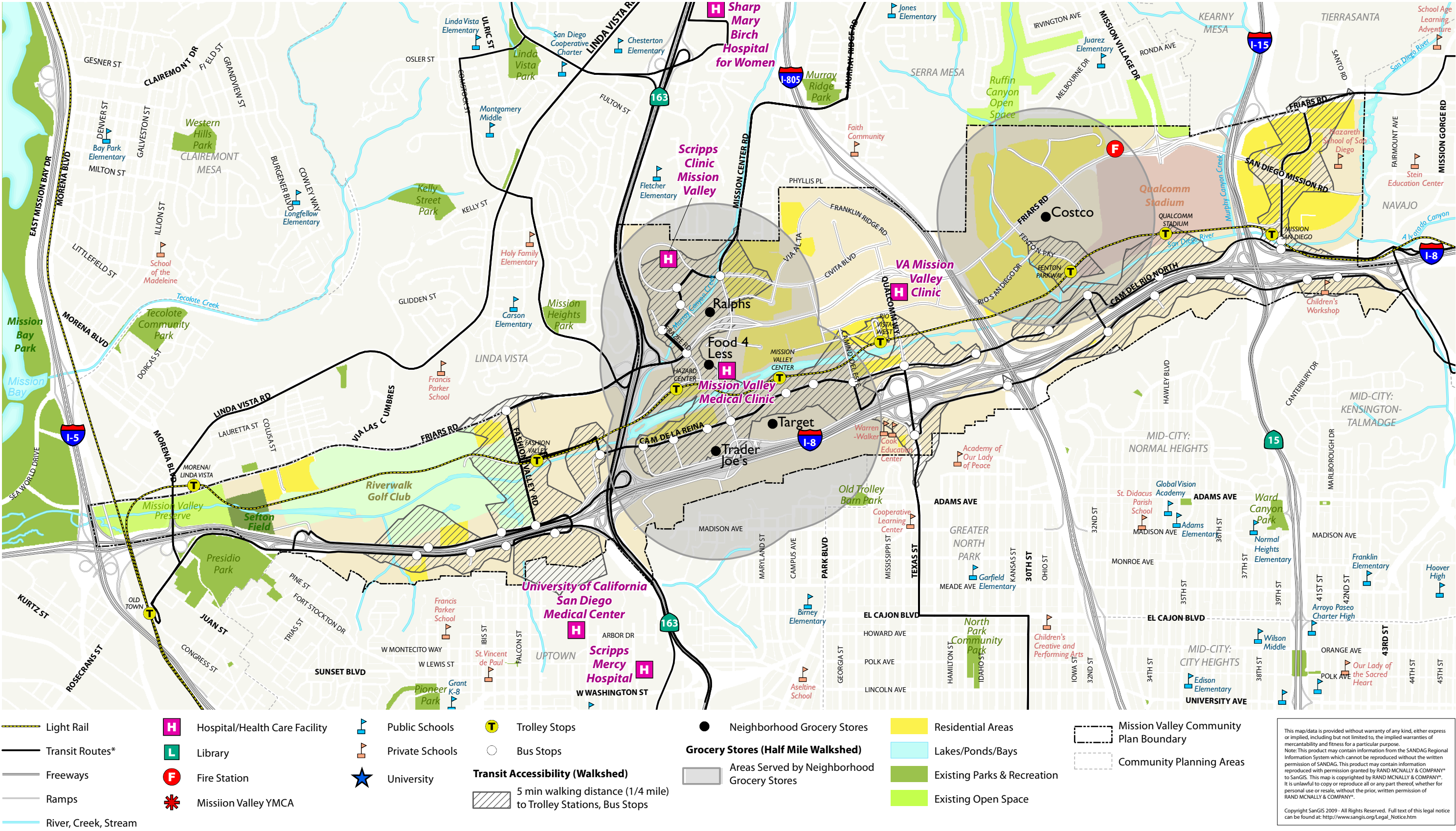
Figure 7-5 depicts community services and facilities that support a healthy community in Mission Valley, although, it should be noted, it is not possible to show all services and facilities that provide a benefit to the community and its members. As Figure 7-5 indicates, there are three health facilities in Mission Valley. Scripps Clinic Mission Valley offers primary care and specialty care that is accessible within a five-minute walk of a bus line. Mission Valley Medical Clinic provides urgent care and is located within walking distance of buses and the trolley. The VA Mission Valley Clinic provides medial care to veterans. Although no hospital is located within Mission Valley, Sharp Mary Birch Hospital for Women and Scripps Mercy Hospital are within close driving distance.

There are several grocery stores located in Mission Valley. Many of Mission Valley's residences are within a half-mile walk of a grocery store or a store that sells fresh fruits and vegetables, particularly west of I-805. Access is less robust in the western portion of Mission Valley, as well as east of I-805, as only Costco, which is a membership-only facility, sells fresh groceries there.

Mission Valley also has one library, which is centrally located near many of Mission Valley's residential neighborhoods, as well as the trolley. Mission Valley has no public schools at the kindergarten through twelfth grade level; there are a few private schools located within Mission Valley.

⁸ Inagami, S., et al., "You Are Where You Shop: Grocery Store Locations, Weight, and Neighborhoods", Vol. 31, Issue 1, American Journal of Preventative Medicine, at 10-17 (2006). See also K. Morland et al., "Supermarkets, Other Food Stores, and Obesity: The Atherosclerosis Risk in Communities Study", Vol. 30, Issue 4, American Journal of Preventative Medicine, at 333-339 (2006).

Figure 7-5: Access to Healthy Food and Services



*Mission Valley is served by route 6, 14, 18, 20, 25, 41, 120, 928 & Trolley
Note: Not all facilities that provide a benefit to the community are depicted.

Data Source: City of San Diego, 2015; SANGIS Regional GIS Data Warehouse, 2015. (www.sangis.org); San Diego Metropolitan Transit System, 2015; Dyett & Bhatia, 2015

