3.3 NOISE AND VIBRATION

The following discussion evaluates noise and vibration conditions and the environmental effects of implementation of the *Envision San José 2040 General Plan*. The analysis in this section is based in part on the following technical report:

- *Environmental Noise Assessment for the Envision San José 2040 General Plan Update*, Illingworth & Rodkin, Inc., December 7, 2010.
- *Rancho del Pueblo and iStar Sites – Noise Analysis Memo,* Illingworth & Rodkin, Inc., May 18, 2011.

Copies of the Environmental Noise Assessment and the Rancho del Pueblo and iStar Sites Noise Analysis Memo are included in the Technical Appendices to this Draft PEIR (Appendix C). Other documents referenced in the Draft PEIR are on file at the City of San José.

3.3.1 Introduction

3.3.1.1 *Noise Concepts and Measurements*

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of a particular sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1 of Appendix C.

There are several methods of characterizing sound. The most common in California is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 3.3-1. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration. For single-event noise sources, an L_{max} measurement is used which describes the maximum A-weighted noise level during the measurement period.

Table 3.3-1
Typical Sound Levels Measured in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	110 dBA	Rock concert
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower at 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area daytime		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Urban area nighttime	40 dBA	
Suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Quiet bedroom at night
	20 dBA	
	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

Source: Technical Noise Supplement (TeNS), Caltrans, November 2009.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within approximately plus or minus one (1) dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within approximately plus or minus one (1) to two (2) dBA.

Since the sensitivity to noise increases during the evening and at night, because excessive noise interferes with the ability to sleep, 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level, CNEL, is a measure of the cumulative noise exposure in a community, with a five (5) dB penalty added to evening (7:00 pm to 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm to 7:00 am) noise levels. The Day/Night Average Sound Level, DNL, is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during that three-hour period are grouped into the daytime period.

3.3.1.2 *Effects of Noise*

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to

chronic exposure to excessive noise, but may be due to a single event. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard which is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Sleep and Speech Interference

As stated in Appendix C, the thresholds for speech interference indoors are approximately 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are approximately 15 dBA higher. Steady noise of sufficient intensity (above 35 dBA) and fluctuating noise levels above approximately 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA DNL. Typically, the highest steady traffic noise level during the daytime is approximately equal to the DNL and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12 to 17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer structure. Sleep and speech interference is therefore possible when exterior noise levels are approximately 57 to 62 dBA DNL with open windows and 65 to 70 dBA DNL if the windows are closed. Levels of 55 to 60 dBA are common along streets, while 65 to 70 dBA is a typical value for a major roadway. Levels of 75 to 80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, which means the dwelling must have forced-air mechanical ventilation; those facing major roadways and freeways typically need special glass windows with Sound Transmission Class[34] ratings greater than 30 STC.

3.3.1.3 *Ground-borne Vibration*

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several methods are typically used to quantify the amplitude of vibration including Peak Particle Velocity (PPV) and Root Mean Square (RMS) velocity. PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. RMS velocity is defined as the average of the squared amplitude of the signal. PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where ground-borne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

In urban environments, such as San José, sources of ground-borne vibration are usually construction activities, light and heavy rail transit, and heavy trucks and buses.

[34] Sound Transmission Class is a single number rating of the effectiveness of a material or construction assembly to retard the transmission of airborne sound.

Construction Vibration

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the peak particle velocity descriptor (PPV) has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential for vibration to induce structural damage and the degree of annoyance it may cause humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.2 to 0.3 mm/sec (0.008 to 0.012 inches/sec), PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels such as people in an urban environment may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to a building is very rare and has only been observed in instances where the structure is in a high state of disrepair and the construction activity (e.g., impact pile driving) occurs immediately adjacent to the structure.

Table 3.3-2 displays continuous vibration impacts on human annoyance and on buildings. Annoyance is a subjective measure and vibrations may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying.

Table 3.3-2
Human Reaction and Effect on Buildings for Continuous Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006 to 0.019	Threshold of perception: Possibility of intrusion	Vibration unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage[1] to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk of "architectural" damage to normal dwellings such as plastered walls or ceilings.
0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations	Vibration at this level would cause "architectural" damage and possibly minor structural damage.

[1] "Architectural" damage is cosmetic in nature, involving minor cracking of building elements, and would not affect the structural integrity of the building.
Source: Transportation Related Earthborne Vibrations. Caltrans. *Technical Advisory, TAV-02-01-R9601.* February 2002.

Light-Rail/Heavy-Rail Vibration

Rail operations are potential sources of substantial ground-borne vibration depending on distance, the type and the speed of trains, and the type of railroad track. People's response to ground-borne vibration has been correlated best with the velocity of the ground. The velocity of the ground is expressed on the decibel scale. The reference velocity is 1×10^{-6} in./sec. RMS, which equals 0 VdB, and 1 in./sec. equals 120 VdB. Although not a universally accepted notation, the abbreviation "VdB" is used in this PEIR for vibration decibels to reduce the potential for confusion with sound decibels.

One of the problems with developing suitable criteria for ground-borne vibration is the limited research into human response to vibration and more importantly human annoyance inside buildings. The U.S. Department of Transportation, Federal Transit Administration has developed rational vibration limits that can be used to evaluate human annoyance due to ground-borne vibration. These criteria are primarily based on experience with passenger train operations, such as rapid transit and commuter rail systems. The main difference between passenger and freight operations is the time duration of individual events; a passenger train lasts a few seconds whereas a long freight train may last several minutes, depending on speed and length.

Heavy Trucks and Buses

Ground-borne vibration levels from heavy trucks and buses are not normally perceptible, especially if roadway surfaces are smooth. Buses and trucks typically generate ground-borne vibration levels of approximately 63 VdB at a distance of 25 feet when traveling at a speed of 30 mph. Higher vibration levels can occur when buses or trucks travel at higher rates of speed or when the pavement is in poor condition. Vibration levels below 65 VdB are below the threshold for human perception.

3.3.2 Existing Setting

3.3.2.1 *Noise*

Existing noise conditions within the City of San José were documented through a noise monitoring survey for the General Plan completed in February and March 2009. The noise monitoring survey supplemented noise data collected by Illingworth & Rodkin, Inc. since 2005[35] in areas where additional development would be allowed under the General Plan and no recent noise data was available. The locations and results of the noise measurements by Planning Area are shown in Appendix C. The sources of noise throughout the city are described below.

Transportation-Related Noise

The ambient noise environment in San José is predominantly the result of transportation-related noise sources. US 101, Interstates 280, 680, and 880, and State Routes 17, 82, 85, 87, and 237 are the most significant sources of traffic noise throughout the community. In areas that are more distant from highways, local streets and collector roadways are the primary noise sources at nearby land uses. Existing noise contours for major roadways in San José are shown in Figure 3.3-1.

Noise barriers exist along most highways, expressways, and major roadways that traverse the City. These barriers have been built as part of roadway improvement projects for noise abatement purposes

[35] Traffic levels have not substantially increased since this time and therefore, noise measurements taken since 2005 are representative of existing noise levels.

or by developers of sensitive land uses when locating noise sensitive projects adjacent to roadways. The existing noise barriers provide acoustical shielding at outdoor use areas and at ground-level facades of buildings. Large noise barriers adjoining highways typically provide eight to 12 dBA of noise reduction, and smaller noise barriers along major roadways can provide five to 10 dBA of noise reduction.

Aircraft operations associated with Norman Y. Mineta San José International Airport and Reid-Hillview Airport generate noise that varies throughout the community. Near primary flight paths and the airports, these operations are substantial contributors to ambient day-night average noise levels. In portions of the City away from the airports and flight paths, aircraft generate noise levels that are audible at times.

Helicopter operations associated with hospital heliports intermittently generate fairly high noise levels over short periods of time. Although audible over a large area, hospital helipads do not normally make a substantial contribution to ambient day-night average noise levels at neighboring residences.

Rail operations along the Valley Transportation Authority (VTA) rights-of-way and along Union Pacific Railroad (UPRR) rights-of-way also are substantial sources of noise in some areas of the City. There are three light-rail lines that are located primarily along major transportation corridors including Capitol Avenue, Tasman Drive, North First Street, SR 85, and SR 87. Heavy-rail tracks generally traverse the City from north to south from the Peninsula and East Bay. In addition to UPRR freight trains, rail operators also include the Altamont Commuter Express (ACE), Caltrain, and Amtrak. The number of train passbys varies on a daily basis (refer to Section 3.2.1.3). Passenger and commuter train schedules are fairly consistent on weekdays with fewer passby events occurring on weekends. The number of freight trains passing through San José varies on a daily basis depending on the specific rail line and local demand. Day-night average noise levels vary throughout the community depending on the number of trains operating along a given line per day, the timing and duration of train passby events, and whether or not trains must sound their warning whistles. Day-night average noise levels commonly range from 65 to 75 dBA DNL at land uses adjoining a railroad right-of-way. When railroad trains approach a passenger station or "at-grade" crossing, they are required to use their warning horn by sounding a short signal with the horn. When giving a warning to people and/or animals, they are required to produce a succession of sounds with the horn. Trains are required to sound a long signal followed by a short signal when approaching stations, curves, or other points where view may be obscured, and when approaching passenger or freight trains. When passing a standing train, the moving train is required to sound two long signals followed by a short signal followed by a long signal, the same requirement when signaling for at-grade crossings. Train warning whistles can generate maximum noise levels of approximately 105 dBA at 100 feet.

Stationary Noise Sources

Industrial operations are the primary stationary noise sources that make a significant local contribution to community noise levels. In general, these stationary noise sources (e.g. fabrication, large mechanical equipment and loading areas) are often located in primarily commercial and industrial areas and are isolated from noise sensitive land uses. However, sensitive development has encroached on some of these stationary noise sources resulting in the potential for land use conflicts. Noise sources that affect sensitive receptors within the community would also include commercial land uses or those sources normally associated with and/or secondary to residential development,

such as nightclubs, outdoor dining areas, gas stations, car washes, fire stations, drive-throughs, auto repair, air conditioning units, swimming pool pumps, school playgrounds, athletic and music venues/events, and public parks.

Temporary Noise Sources

Construction is a temporary source of noise for residences and businesses located near construction sites. Construction noise can be significant for short periods of time at any particular location as a result of public improvement projects, private development projects, remodeling, etc. The highest construction noise levels are normally generated during grading and excavation, with lower noise levels occurring during building construction. Large pieces of earth-moving equipment, such as graders, scrapers, and bulldozers, generate maximum noise levels of 85 to 90 dBA at a distance of 50 feet. Typical hourly average construction-generated noise levels are approximately 80 to 85 dBA measured at a distance of 50 feet from the site during busy construction periods. Some construction techniques, such as impact pile driving, can generate very high levels of noise (105 dBA L_{max} at 50 feet) that are difficult to control. Construction activities can elevate noise levels at adjacent businesses and residences by 15 to 20 dBA or more during construction hours.

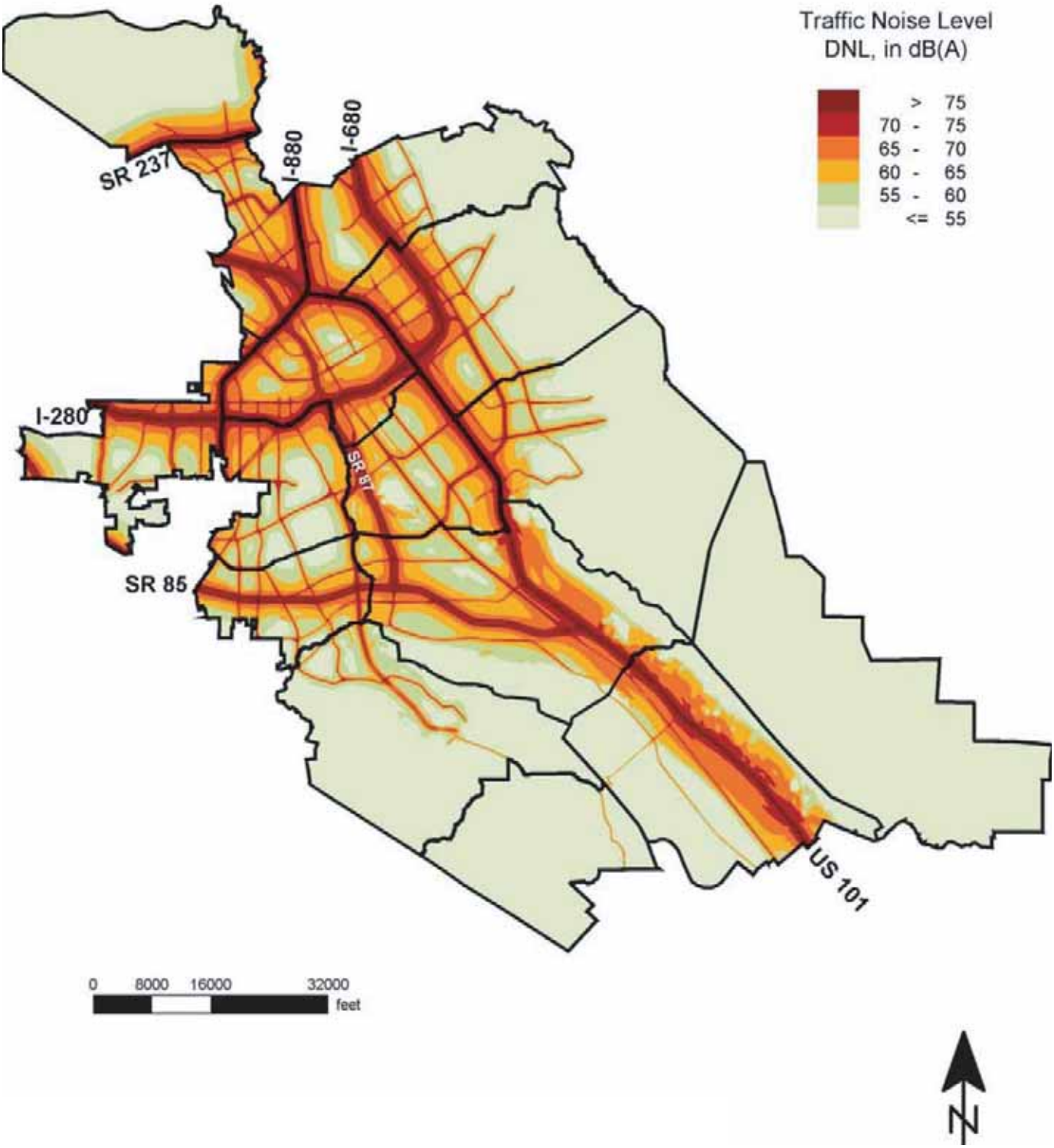
3.3.2.2 *Vibration*

Transportation-Related Vibration Sources

Ground-borne vibration occurs in areas adjacent to fixed rail lines when railroad trains pass through San José. Ground vibration levels along the railroad corridors are proportional to the speed and weight of the trains as well as the condition of the tracks and train engine and car wheels. Vibration levels resulting from railroad trains vary by site, but are generally perceptible within 100 feet of the tracks. Light-rail operations generate less vibration than heavy-rail trains, and oftentimes, vibration levels generated by light-rail trains are barely perceptible just outside the light-rail/roadway right-of-way. Heavy and light-rail transportation sources are shown in Figure 3.2-3 on page 219.

Temporary Vibration Sources

Construction activities such as demolition, site preparation work, excavation, and foundation work can generate ground-borne vibration at land uses adjoining construction sites. Impact pile driving has the potential of generating the highest ground vibration levels and is of primary concern to structural damage. Other project construction activities, such as caisson drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may also generate substantial vibration levels in the immediate vicinity.



Note: Calculations assume an acoustically hard ground surface and do not take take into account shielding from intervening barriers or structures.

Source: Illingworth & Rodkin, 2010.

EXISTING CITYWIDE TRAFFIC NOISE CONTOURS FIGURE 3.3-1

3.3.2.3 *Ambient Noise Environment*

The City of San José's Urban Growth Boundary covers approximately 143 square miles and there are a range of noise sources and levels throughout the City. The ambient noise environment throughout the City is described below. Figures showing approximate noise measurement locations made in each of the Planning Areas and summary tables of these noise measurement data are provided in Appendix C.[36] Existing citywide traffic noise contours are shown in Figure 3.3-1.

Almaden Planning Area

The Almaden Planning Area is located in the southern portion of the City of San José. The major source of noise is traffic along roadways. Major roadways, including Almaden Expressway, Coleman Road, Redmond Avenue, Camden Avenue, Meridian Avenue, Harry Road, and McKean Road are the most significant noise sources at land uses immediately adjacent to these roadways. The Planning Area is primarily developed with residential land uses in the northeast portion, and with non-urban hillside and public park land uses along its southwest and southeastern borders. A noise measurement along Almaden Expressway indicates an ambient noise level of 56 dBA DNL.

Alum Rock Planning Area

The Alum Rock Planning Area is located in the midsection of the City of San José adjacent to the eastern foothills. The Planning Area is primarily affected by noise from traffic and aircraft. The Planning Area is mainly developed with residential land uses, with commercial land uses concentrated along Alum Rock Avenue and industrial land uses in the northwest quadrant. I-280 and I-680, US 101 and SR 130 (Alum Rock Avenue) generate the highest noise levels. Major roadways, including Capitol Expressway, White Road, King Road, McLaughlin Avenue, Senter Road, Santa Clara Street, Story Road, McKee Road, East Julian Street, Jackson Avenue, Toyon Avenue, Kirk Avenue, Clayton Road, Mount Pleasant Road, and Fleming Avenue are the most significant noise sources at land uses immediately joining these roadways. Seven long-term noise measurements were taken between 2006 and 2011 to document ambient noise levels within the Planning Area. Noise measurements taken adjacent to US 101 indicate an ambient noise level of 70 dBA DNL. Noise levels in areas adjacent to King Road, Alum Rock Avenue, McKee Road, and Story Road range from 68 to 74 dBA DNL. Noise levels in areas adjacent to Capitol Expressway range from 73 to 75 dBA DNL. Noise levels in residential areas away from the major roadways were approximately 55 dBA DNL.

Reid-Hillview Airport, located at 2500 Cunningham Avenue west of East Capitol Expressway and north of Tully Road, is also a significant source of environmental noise. This general aviation airport averages 630 aircraft operations per day.[37] Approximately 60 percent of aircraft operations are general aviation, and 40 percent are transient general aviation. The airport operates from 7:00 A.M. to 9:00 P.M.[38] Maximum instantaneous noise levels typically range from 64 to 72 dBA L_{max} when departing aircraft are overhead of land uses near the airport. Other sources that contribute to community noise levels include VTA light rail and freight trains that run from the south to the north

[36] As described in Section 3.3.2.1, noise measurements taken between 2005 to 2009 are used to characterize the ambient noise environment.
[37] AirNav, LLC. "FAA Information for Reid-Hillview Airport". Accessed January 15, 2009. <www.airnav.com/airport/KRHV>
[38] The Santa Clara County Airports. "Reid-Hillview Airport: Noise Standards". Accessed September 22, 2010. <http://www.reidhillviewairport.com/new_website/rhv-noise.html>

of the Planning Area as well as intermittent helicopter operations associated with Regional Medical Center.

Although industrial sites are all clustered in one area, new residential developments have been approved and/or built within what was previously a non-residential area (including the San José Flea Market property).

Alviso Planning Area

The Alviso Planning Area is the northernmost Planning Area in San José and is comprised mostly of wetlands, industrial land uses, the Water Pollution Control Plant, and a relatively well-defined residential neighborhood (one older mobile home park is separated from the rest of the neighborhood by the Guadalupe River). The main sources of noise in the Alviso Planning Area include SR 237 and I-880, railroad train operations along the UPRR, and commercial aircraft from Norman Y. Mineta San José International Airport. A noise measurement made near SR 237 indicates an ambient noise level of 74 dBA DNL. Other major noise-generating roadways include North First Street, Gold Street, Los Esteros Road, and Zanker Road. Noise-sensitive land uses are generally located in areas well away from stationary noise sources (e.g., Zanker Road Landfill) where noise from these sources is insignificant.

Berryessa Planning Area

The Berryessa Planning Area is located in the northeast quadrant of the City of San José north of the Alum Rock and Central/Downtown Planning Areas and east of the North San José Planning Area. Medium-low and low density residential land uses are predominant in the western half of the Berryessa Planning Area. Other land uses include public parks, commercial, and high density residential along I-680. The eastern half of the Planning Area includes land uses such as low density and rural residential, urban and non-urban hillside, and open space. The western portion of the Planning Area includes industrial land uses including heavy and light industrial areas served by the railroad tracks and both I-880 and US 101. Noise sources primarily include highways, major roadways, and three rail lines. I-680 transects the western half of the Planning Area roughly two miles east of I-880, which serves as the westernmost boundary. A small portion of US 101 serves as the southernmost border of the Planning Area. Major roadways include Oakland Road, Murphy Avenue, Berryessa Road, North Capitol Avenue, Cropley Avenue, Morrill Avenue, Piedmont Road, and Sierra Road. Noise measurements indicate ambient noise levels of 74 dBA DNL along I-680, 65 dBA DNL along I-880, and 59 dBA DNL along Berryessa Road. Two Union Pacific freight-train railroads run almost parallel between the two interstates and the Alum Rock to Santa Teresa portion of the VTA Light Rail cuts across and runs along North Capitol Avenue.

Graniterock (San José Concrete and Building Materials) is located at 11711 Berryessa Road. The major noise sources at this facility include truck loading and unloading activities, rail car shaking, slack action, movement of freight cars and engines on the spur line leading to the facility, and truck movements. Measurements made at existing and planned (Flea Market site) residential land uses in the vicinity of this facility range from 58 to 62 dBA DNL.

Cambrian/Pioneer Planning Area

The Cambrian/Pioneer Planning Area is located in southwest San José. SR 85 is the most significant source of traffic noise that affects the Planning Area. Major roadways, including Almaden

Expressway, Capitol Expressway, Coleman Road, Blossom Hill Road, Branham Lane, Hillsdale Avenue, South Bascom Avenue, Union Avenue, Leigh Avenue, Meridian Avenue, Cherry Avenue, Camden Avenue, Kooser Road, and Pearl Avenue are the most significant noise sources at land uses immediately adjacent to these roadways. Operations associated with the Good Samaritan Hospital heliport also generate noise that is intermittently audible within the community. The Cambrian/ Pioneer Planning Area is mainly developed with residential land uses. The Planning Area is also developed with commercial land uses primarily found at the intersections of major streets (Bascom/Camden, Union/Camden, Almaden/Blossom Hill, etc.).

Noise levels along Almaden Expressway were measured at 70 dBA DNL. SR 85 generates existing day-night average noise levels ranging from 77 to 78 dBA DNL at 75 feet. Vehicle traffic on Blossom Hill Road generates a day-night average noise level of approximately 71 dBA DNL at 75 feet.

Central/Downtown Planning Area

The Central/Downtown Planning Area encompasses Downtown San José and shares borders with the North San José, Berryessa, Alum Rock, South San José, Willow Glen, and West Valley Planning Areas. The Central/Downtown Planning Area is roughly triangular, with its three sides being US 101, I-880, and I-280. SR 87 runs north to south through the Planning Area. Major roadways include Bascom Avenue, Hedding Street, Naglee Avenue, West Taylor Street, West San Carlos Street/Stevens Creek Boulevard, Coleman Avenue, State Route 82/West Santa Clara Street, East Santa Clara Street, St. James Street, Julian Street, First Street, Third Street, Tenth Street, Eleventh Street, 24th Street/McLaughlin Avenue, Keyes Street/Story Road, Alma Avenue, and Almaden Road.

There are multiple railroads that contribute to the noise environment in the Central/Downtown Planning Area. Two VTA Light Rail train lines, Alum Rock to Santa Teresa and Mountain View to Winchester, converge and split north of the Guadalupe Parkway (SR 87) and I-280 interchange. Also converging at the Diridon train station just east of SR 87 are separate train lines that run northwest/southeast and are utilized by Caltrain, Altamont Commuter Express (ACE), Amtrak Capitol Corridor, and Union Pacific freight trains. The Norman Y. Mineta San José International Airport is adjacent to the northwest border of the Planning Area, but the 65 dBA CNEL noise contour generated by the airport extends into the Planning Area. Public parks, open space, and industrial/commercial land uses are within the Central/Downtown Planning Area nearest the airport runways. General commercial land uses are located along Stevens Creek/West San Carlos Street, East Santa Clara Street, North First and Second streets, Monterey Street/South First Street, and Story Road. High-density residential land uses are located primarily within the Downtown Core and Frame Areas, and south of San José State University. Medium and low-density residences are also located in the Planning Area apart from the downtown and airport spheres of influence. Medium-high density residential, small parks, and light industrial land uses make up a smaller portion of the Planning Area comparatively. Sixteen long-term noise measurements taken from 2006 to 2009, documented ambient noise levels within the Planning Area. Measured noise levels typically ranged from 62 to 75 dBA DNL.

Coyote Planning Area

Traffic is the major source of noise in the Coyote Planning Area located in the southern portion of the City of San José, with the non-urban Planning Areas Calero to the west and San Felipe to the

east. US 101 is the most significant source of traffic noise in the area. Major roadways, including Santa Teresa Boulevard, Monterey Highway, and Hale Avenue are the most significant noise sources at land uses immediately adjacent to these roadways. The UPPR, Amtrak, and Caltrain run from the north to the south along SR 82 (Monterey Road). The Planning Area is mainly developed with residential and agricultural land uses. The IBM Campus is located north of Bailey Avenue between Monterey Highway and McKean Road. Coyote also is developed with public parks, open spaces, and private open spaces. Noise measurements made by Illingworth & Rodkin, Inc. since 2005 documented ambient noise levels ranging from 66 to 73 dBA DNL along US 101 and major roadways.

Edenvale Planning Area

The Edenvale Planning Area is located in south central San José. The major source of noise in the Planning Area is traffic along highways, state routes, and roadways with US 101 and State Routes 82, 85, and 87 as the most significant sources of traffic noise. Major roadways include Snell Avenue, Pearl Avenue, Capitol Expressway, Branham Lane, Chynoweth Avenue, Blossom Hill Road, Santa Teresa Boulevard, Coleman Road, and Winfield Boulevard. The Planning Area is mainly developed by residential land uses. Other sources that contribute to community noise levels include airplanes, VTA light rail trains that run from the north to the south of the Planning Area along SR 87, and from the northwest to the southeast along SR 85. The UPPR, Amtrak, and Caltrain run from the north to the south along SR 82 (Monterey Road). Noise measurements made by Illingworth & Rodkin, Inc. since 2005 documented ambient noise levels ranging from 66 to 72 dBA DNL along SRs 85 and 87, and major roadways.

Evergreen Planning Area

The Evergreen Planning Area is located in the central southeast portion of the City of San José. The prevailing land use is single-family residential use. US 101 is the most significant source of traffic noise affecting the Planning Area. Major roadways, including Capitol Expressway, San Felipe Road, White Road, Story Road, Yerba Buena Road, Aborn Road, Quimby Road, Ruby Avenue, Mount Pleasant Road, Clayton Road, Silver Creek Boulevard, Nieman Boulevard, Marten Avenue, and Murillo Avenue are also significant sources of noise at land uses immediately adjacent to these roadways. Reid-Hillview Airport is located just north of the Planning Area. Noise measurements made by Illingworth & Rodkin, Inc. since 2005 documented ambient noise levels along major roadways ranging from 62 to 77 dBA.

North San José Planning Area

The North San José Planning Area is predominately comprised of commercial and industrial land uses with scattered clusters of higher density residential and one single-family neighborhood (Rosemary Gardens). The predominant noise source in the area is the Norman Y. Mineta San José International Airport. The 65 dBA CNEL noise contour generated by San José International Airport extends from north of Tasman Drive to about Keyes Street in the south (Central/Downtown San José Planning Area). The airport averages approximately 533 aircraft operations per day.[39] Approximately 60 percent of aircraft operations are commercial, 19 percent are transient general aviation, 13 percent are jet air taxi operations, eight percent are local general aviation, and less than one percent are military operations. The airport sets noise-based curfew hours from 11:30 P.M. to

[39] AirNav, LLC. "FAA Information for Norman Y. Mineta San José International Airport". Accessed March 12, 2009. <http://www.airnav.com/airport/KSJC>

6:30 A.M. The noise-based curfew prohibits takeoffs or landings within curfew hours exceeding an average of 89 decibels.[40] Exceptions to the curfew are allowed for "grandfathered" aircraft, events beyond the operator's control (e.g., weather, mechanical problems), emergency operations, and government-operated aircraft.[41] Other major sources of noise include SR 237 along the northern border, I-880 along the eastern border, US 101 in the southern third of the Planning Area, and SR 87. Major roadways include West Tasman Drive, Montague Expressway, North First Street, Zanker Road, West Trimble Road, and East Brokaw Road. Two VTA Light Rail lines, Alum Rock to Santa Teresa and Mountain View to Winchester, run along West Tasman Drive and North First Street. Eight noise measurements completed in the North San José Planning Area determined ambient noise levels range from 60 to 71 dBA DNL.

South San José Planning Area

The South San José Planning Area is located south of the Central/Downtown San José Planning Area and is developed with a wide range of residential types, commercial, and older mixed industrial land uses. Traffic and aircraft are the predominant sources of noise affecting the ambient noise environment in the South San José Planning Area. US 101, and SRs 82 (Monterey Road) and 87 are the most significant sources of traffic noise. Major roadways include Capitol Expressway, Hillsdale Avenue, Snell Avenue, Curtner Avenue, Tully Road, Story Road, Senter Road, McLaughlin Avenue, and King Road. Aircraft on approach or departure routes from the Norman Y. Mineta San José International Airport also contribute to measured noise levels. Noise levels measured in the vicinity of major thoroughfares such as Tully Road and Capitol Expressway range from 73 to 74 dBA DNL.

The Raisch Products Asphalt and Concrete Plant is located near Monterey Road and Pullman Way. The major noise sources on the Raisch site include the asphalt batch plant, truck circulation, and railroad off-loading. Noise measurements conducted by Illingworth & Rodkin, Inc. in 2005 showed that the typical noise level generated by the plant is 63 to 64 dBA at a distance of 200 feet from the asphalt batch plant. In 2006, a proposed conditional use permit for an aggregate depot and railroad spur were approved for this site that were anticipated to result in noise levels up to 72 dBA DNL.

West Valley Planning Area

The major source of noise in the West Valley Planning Area located in the central west portion of the City of San José is vehicular traffic. Interstates 280 and 880, and SRs 17, 82 and 85 are the most significant sources of traffic noise. Major roadways, including Saratoga Avenue, San Tomas Expressway, Bollinger Road, Stevens Creek Boulevard, Moorpark Avenue, Williams Road, Lawrence Expressway, Hamilton Avenue, De Anza Boulevard, Prospect Road, Winchester Boulevard, Bascom Avenue, Pruneridge Avenue and Homestead Road are the most significant noise sources at land uses immediately joining these roadways. The West Valley Planning Area is mainly developed with residential and commercial land uses. Noise measurements made by Illingworth & Rodkin, Inc. since 2005 documented ambient noise levels along Interstates 280 and 880, State Routes 17, 82, and 85, and major roadways. Noise measurements indicate ambient noise levels ranging from 54 to 68 dBA DNL.

[40] Mineta San José International Airport (SJC). "Airport Facts and Figures". 2010. Accessed September 22, 2010. <www.sjc.org/about/newsroom/AirportStats.pdf>

[41] Mineta San José International Airport (SJC). "SJC Curfew Information". Accessed December 2, 2010. Accessed at: http://www.sjc.org/community/curfew.html.

Willow Glen Planning Area

The Willow Glen Planning Area is located in the southwest portion of the City of San José, and is mainly developed with residential land uses. Interstates 280 and 880, and SRs 17 and 87 are the most significant sources of traffic noise. Streets that are sources of substantial roadway noise include Southwest Expressway, Camden Avenue, Hillsdale Avenue, Foxworthy Avenue, Bascom Avenue, Curtner Avenue, Pine Avenue, Hamilton Avenue, Moorpark Avenue, Winchester Boulevard, Leigh Avenue, Meridian Avenue, Lincoln Avenue, Bird Avenue, Union Avenue, Minnesota Avenue, Willow Street, Alma Avenue, Auzerais Avenue, Stevens Creek Boulevard, Almaden Expressway, West Virginia Street, and Race Street. VTA light-rail trains along the Mountain View to Winchester line pass through the Planning Area. The Valley Medical Center heliport also generates noise that intermittently increases ambient noise levels within the community. Nine noise measurements made by Illingworth & Rodkin, Inc. since 2005 documented ambient noise levels along Interstates 280 and 880, State Routes 17 and 87, and major roadways. Measured noise levels within the Planning Area range from 65 to 74 dBA DNL.

3.3.2.4 *Regulatory Framework*

Federal

Department of Housing and Urban Development (HUD)

HUD environmental criteria and standards are presented in Title 24 of the Code of Federal Regulations, Part 51 (24 CFR Part 51). New residential construction qualifying for HUD financing proposed in high noise areas (exceeding 65 dBA DNL) must incorporate noise attenuation features to maintain acceptable interior noise levels. A goal of 45 dBA DNL is set forth for interior noise levels and attenuation requirements are geared toward achieving that goal. It is assumed that with standard construction any building will provide sufficient attenuation to achieve an interior level of 45 dBA DNL or less if the exterior level is 65 dBA DNL or less. Approvals in a "normally unacceptable noise zone" (exceeding 65 decibels but not exceeding 75 decibels) require a minimum of five (5) decibels additional noise attenuation for buildings if the day-night average is greater than 65 decibels but does not exceed 70 decibels, or a minimum of 10 decibels of additional noise attenuation if the day-night average is greater than 70 decibels but does not exceed 75 decibels.

Federal Highway Administration

Proposed federal or federal-aid highway construction projects at a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment, or increases the number of through-travel lanes requires an assessment of noise and consideration of noise abatement per Title 23 of the Code of Federal Regulations, Part 772 (23 CFR Part 772), "Procedures for Abatement of Highway Traffic Noise and Construction Noise." FHWA has adopted noise abatement criteria (NAC) for sensitive receivers such as picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals when "worst-hour" noise levels approach or exceed 67 dBA L_{eq}. Caltrans has further defined approaching the NAC to be one (1) dBA below the NAC for noise sensitive receivers identified as Category B activity areas (e.g., 66 dBA L_{eq} is considered approaching the NAC).

Federal Transit Administration

The Federal Transit Administration (FTA)[42] has identified vibration impact criteria for sensitive buildings, residences, and institutional land uses near rail transit and railroads. The thresholds for residences and buildings where people normally sleep (e.g., nearby residences) are 72 VdB for frequent events (more than 70 events of the same source per day), 75 VdB for occasional events (30 to 70 vibration events of the same source per day), and 80 VdB for infrequent events (less than 30 vibration events of the same source per day).

State of California

California Administrative Code Section 65302(f)

California Government Code Section 65302(f) requires that all General Plans include a Noise Element to address noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

- Highways and freeways.
- Primary arterials and major local streets.
- Passenger and freight on-line railroad operations and ground rapid transit systems.
- Commercial, general aviation, heliport, and military airport operations, aircraft flyovers, jet engine tests stands and all other ground facilities and maintenance functions related to airport operation.
- Local industrial plants, including, but not limited to, railroad classification yards.
- Other stationary ground noise sources identified by local agencies as contributing to the community noise environment.

Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (DNL or L_{dn}). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified above.

The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise. The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards.

California Noise Insulation Standards

The State of California establishes minimum noise insulation performance standards for hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings as set forth in the 2007 California Building Code (Chapter 12, Appendix Section 1207.11.2). The noise

[42] The FTA may be a co-lead agency with the FHWA where highway construction projects include an expansion in transit capacity. Otherwise impact assessment for highway traffic noise and construction is subject to FHWA procedures.

limit is a maximum interior noise level of 45 dBA DNL. Where exterior noise levels exceed 60 dBA DNL, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the noise limit. The General Plan policies also require the implementation of the Building Code noise insulation standards.

Division of Aeronautic Noise Standards

Title 21 of the California Code of Regulations sets forth the State's airport noise standards. In the findings described in Section 5006, the standard states the following: "A level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a community noise equivalent level (CNEL) value of 65 dB for purposes of these regulations. This criterion level has been chosen for reasonable persons residing in urban residential areas where houses are of typical California construction and may have windows partially open. It has been selected with reference to speech, sleep, and community reaction." Based on this finding, the airport noise standard as defined in Section 5012 is set at a CNEL of 65 dB.

California Department of Transportation – Construction Noise and Vibration

There are no applicable state plans, policies, regulations or laws related to highway construction noise, however, the California Department of Transportation (Caltrans) Traffic Noise Analysis Protocol specifies that construction contractors comply with all applicable local sound control and noise level rules, regulations, and ordinances. Under the protocol, abatement measures which would minimize or eliminate adverse construction noise impacts to the community should be identified in project plans and specifications. If noise barriers are planned as part of the project, Caltrans will consider constructing the barriers before beginning project construction, so that the barriers can reduce construction noise transmission to adjacent land uses.

There are no applicable state plans, policies, regulations or laws related to ground-borne vibration from construction activities, however, guidance developed by Caltrans has been used in past construction vibration impact assessments of projects developed in San José. Caltrans uses a vibration limit of 12.7 mm/sec (0.5 inches/sec), PPV for buildings structurally sound and designed to modern engineering standards. A conservative vibration limit of five (5) mm/sec (0.2 inches/sec), PPV has been used for buildings that are found to be structurally sound but structural damage is a major concern. For historic buildings or buildings that are documented to be structurally weakened, a conservative limit of two (2) mm/sec (0.08 inches/sec), PPV is often used to provide the highest level of protection. All of these limits have been used successfully and compliance to these limits has not been known to result in appreciable structural damage. All vibration limits referred to herein apply on the ground level and take into account the response of structural elements (i.e. walls and floors) to ground-borne vibration.

City of San José

San José 2020 General Plan

Existing policies in the City of San José 2020 General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. The land use compatibility guidelines from the General Plan are shown in Table 3.3-3.

Relevant General Plan Policies that directly address reducing and avoiding noise and vibration impacts include the following:

- Noise Policies #1-12

Table 3.3-3
Land Use Compatibility Guidelines from the Existing General Plan

Land Use	DNL Value in Decibels								
	40	45(a)	50	55(b)	60(c)	65	70	75	80
Public & Quasi-Public Schools(d), Hospitals, Libraries, Auditoriums									
Public, Quasi-Public, & Residential Parks, Playgrounds, Public Buildings, Single-Family, Multi-Family, Mobile Home Park									
Commercial Shopping Center, Self-Generative Business, Office, Banks, Clinics, Hotels, Motels									
Industrial Non-Manufacturing Industry, Transportation, Communications, Utilities Manufacturing									
Agriculture & Vacant Urban Extractive, Open Land, Orchards, Crops, Water Supply, Brush Lands, Vacant									

Compatibility Levels

Satisfactory

When new development requires a full EIR, an acoustical analysis should be made indicating amount of attenuation necessary to maintain an indoor level of DNL<=45. Onsite outdoor activity limited to acoustically protected areas. Existing uses should receive remedial sound attenuation treatment.

New development permitted only if uses are entirely indoors and building design limits interior levels to <=45 DNL. Outside activity areas should be permitted if site planning and noise barriers can achieve levels of 60 DNL or less. Existing uses have top priority for remedial treatment.

DNL> = 76 levels considered hazardous to health as determined by EPA.

Notes:

(a) Interior Noise Quality Level
(b) Long – Range Exterior Noise Quality Level
(c) Short – Range Exterior Noise Quality Level
(d) L_{eq} value of L_{eq} (30) = is used for the evaluation of school impact by the airport

Source: City of San José. *Focus on the Future San José 2020 General Plan*. Figure 16. December 21, 2009.

Municipal Code

Operation Standards

The City's Municipal Code contains a Zoning Ordinance that limits noise levels at any property line of residential, commercial, or industrial properties as shown in Table 3.3-4.

Table 3.3-4
City of San José Zoning Ordinance Noise Standards

Land Use Types	Maximum Noise Level in Decibels at Property Line
Residential, open space, industrial or commercial uses adjacent to a property used or zoned for residential purposes	55
Open space, commercial, or industrial use adjacent to a property used or zoned for commercial purposes or other non-residential uses	60
Industrial use adjacent to a property used or zoned for industrial or use other than commercial or residential purposes	70

The Zoning Ordinance also limits noise levels generated by stand-by/backup and emergency generators. The noise level emitted by these generators shall not exceed 55 decibels at the property line of residential properties. The standards and criteria for stand-by/backup generators are set as follows:

1. Maximum noise levels, based upon a noise analysis by an acoustical engineer, will not exceed the applicable noise standards set forth in Title 20.80.2030.
2. Testing of generators is limited to 7 a.m. to 7 p.m., Monday through Friday.

Construction Standards

According to San José Municipal Code, construction hours within 500 feet of a residential unit are limited to the hours of 7:00 a.m. to 7:00 p.m. on Monday through Friday, unless otherwise expressly allowed in a Development Permit or other planning approval. The Municipal Code does not establish quantitative noise limits for demolition or construction activities occurring in the City.

3.3.3 Thresholds of Significance

For the purposes of this PEIR, a noise and vibration impact is significant if implementation of the proposed *Envision San José 2040 General Plan* would:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose persons to or generation of excessive groundborne vibration or groundborne noise levels;
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
- For a project located within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The City of San José has adopted land use compatibility guidelines for community noise levels as part of the General Plan and has adopted a noise ordinance. The guidelines contained in the General Plan and proposed General Plan policies that clarify the City's exterior noise guidelines are the basis of the established standards for San José used in the evaluation of impacts in this PEIR. These guidelines are described below.

3.3.3.1 *City of San José Standards*

The City of San José relies on the following guidelines for new development to avoid impacts above the CEQA thresholds of significance outlined above.

Noise

Noise and Land Use Compatibility

The City's acceptable noise level objectives are 55 dBA DNL as the long-range exterior noise quality level, 60 dBA DNL as the short-range exterior noise quality level, and 76 DNL as the maximum exterior noise level necessary to avoid significant adverse health effects. The interior noise standard for residences, hotels, motels, residential care facilities, and hospitals is 45 dBA DNL. For commercial, industrial, and institutional uses interior noise level requirements will vary based on the function of the space. These noise level objectives were established by the City, recognizing that the attainment of exterior noise levels in the environs of the San José International Airport, the Downtown Core Area, and along major roadways may not be achieved in the timeframe of the General Plan. To achieve the noise objectives, the City requires appropriate site and building design, building construction and noise attenuation techniques in new residential development. Outdoor uses on sites where the DNL is above 60 dBA should be limited to acoustically protected areas.

As shown in Table 3.3-5, a significant noise impact would be identified where noise sensitive land uses are proposed in areas where existing or future noise levels from implementation of the General Plan would exceed the noise and land use compatibility guidelines established by the City of San

José unless mitigation is included in the proposed development project to achieve the levels of noise reduction as prescribed in General Plan Policies EC-1.1 and EC-1.9 for both interior and exterior areas. Policy EC-1.1 clarifies the exterior noise guidelines for multi-family and single-family residential uses by identifying a standard of 60 dBA DNL for outdoor activity areas, with some exclusions (*e.g.,* balconies and stoops facing existing roadways). The City's acceptable exterior noise level objective is 60 dBA DNL or less for residential and most institutional land uses (see Table 3.3-5). Under proposed Policy EC-1.1, the acceptable exterior noise level objective is established for the City, except in the environs of the San José International Airport, the Downtown Core Area, and along major roadways. For the remaining areas of the City, the following standards would apply for new development. For new multi-family residential projects and for the residential component of mixed-use development, the standard is 60 dBA DNL in usable outdoor activity areas. There will be outdoor common use areas available to all residents that meet the 60 dBA exterior standard through the use of noise attenuation techniques such as shielding by buildings and structures. For single-family residential uses, the standard is 60 dBA DNL for exterior noise in private usable outdoor activity areas, such as back yards. This proposed policy clarifies that exterior noise levels on residential sites may be higher on some sites (e.g., Downtown) or portions of sites within San José where outdoor human activity would be limited.

Table 3.3-5 summarizes the revised compatibility guidelines which includes very little substantive difference from the guidelines in the current San José 2020 General Plan. Land uses are grouped more logically and the practical attenuation of current construction is reflected in the assumed mitigation value of "conventional" construction. Unnecessary procedural notes have also been removed.

Table 3.3-5
Proposed General Plan Land Use Compatibility Guidelines (GP Table EC-1)

Land Use Category	Exterior DNL Value in Decibels					
	55	60	65	70	75	80
1. Residential, Hotels and Motels, Hospitals and Residential Care[1]						
2. Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds						
3. Schools, Libraries, Museums, Meeting Halls, and Churches						
4. Office Buildings, Business Commercial, and Professional Offices						
5. Sports Arena, Outdoor Spectator Sports						
6. Public and Quasi-Public Auditoriums, Concert Halls, and Amphitheaters						

[1]Noise mitigation to reduce interior noise levels pursuant to Policy EC-1.1 is required.

Normally Acceptable:
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable:
Specified land use may be permitted only after detailed analysis of the noise reduction requirements and noise mitigation features included in the design.

Unacceptable:
New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies. Development will only be considered when technically feasible mitigation is identified that is also compatible with relevant design guidelines.

Traffic-Generated Noise

Development allowed by the *Envision San José 2040 General Plan* would result in increased traffic volumes along roadways throughout San José. The City of San José considers a significant noise impact to occur where existing noise sensitive land uses would be subject to permanent noise level increases of three (3) dBA DNL or more where noise levels would equal or exceed the "Normally Acceptable" level, or five (5) dBA DNL or more where noise levels would remain "Normally Acceptable".

Airport Noise

A significant noise impact would occur when noise sensitive land uses are proposed in areas where existing or future noise levels would exceed the noise and land use compatibility standards established by the Santa Clara County Airport Land Use Commission (ALUC).

Construction Noise

For temporary construction-related noise to be considered significant, construction noise levels would have to exceed ambient noise levels by five (5) dBA L_{eq}[43] or more and exceed the normally acceptable levels of 60 dBA L_{eq} at the nearest noise-sensitive land uses or 70 dBA L_{eq} at office or commercial land uses for a period of more than 12 months.

Vibration

Rail Transit

The City of San José uses the FTA's vibration impact criteria for sensitive buildings, residences, and institutional land uses near rail transit and railroads. The thresholds for residences and buildings where people normally sleep (e.g., hotels) are 72 VdB for frequent events (more than 70 events of the same source per day), 75 VdB for occasional events (30 to 70 vibration events of the same source per day), and 80 VdB for infrequent events (less than 30 vibration events of the same source per day).

Construction Vibration

The City of San José relies on guidance developed by Caltrans to address vibration impacts from development projects in San José. A vibration limit of 12.7 mm/sec (0.5 inches/sec), PPV for buildings structurally sound and designed to modern engineering standards. A conservative vibration limit of five (5) mm/sec (0.2 inches/sec), PPV has been used for buildings that are found to be structurally sound but structural damage is a major concern. For historic buildings or buildings that are documented to be structurally weakened, a conservative limit of two (2) mm/sec (0.08 inches/sec), PPV is used to provide the highest level of protection.

[43] L_{eq} is the average noise level over any specified period of time and for construction noise would be applied to the noisiest one hour period.

3.3.4 Noise and Vibration Impacts

3.3.4.1 *Traffic Noise and Land Use Compatibility*

Development allowed by the *Envision San José 2040 General Plan* project includes noise sensitive land uses that could be located in varying noise environments. New noise-sensitive development is planned along major transportation corridors, railroad and light-rail corridors, in the vicinity of Norman Y. Mineta San José International Airport, in the vicinity of Reid-Hillview Airport, and in the vicinity of stationary noise sources. A significant noise impact would be identified where noise sensitive land uses are proposed in areas where existing or future noise levels would exceed the noise and land use compatibility guidelines established by the City of San José.

Single-family residential development, schools, libraries, hospitals, convalescent homes, and places of worship are considered the most noise-sensitive land uses. Residential development is sensitive to community noise both outdoors and indoors during the daytime and nighttime. High-density/mixed-use residential, commercial, and industrial development is less noise sensitive because uses are primarily indoors, and noise impacts can be more easily mitigated with building design and construction. However, noise exposures along many roadways, rail transit corridors, and in the environs of Norman Y. Mineta San José International Airport will exceed the exterior noise levels that can be mitigated by conventional construction to maintain the 45 dBA DNL interior compatibility level.

Where exterior noise levels exceed 60 dBA DNL in new residential development areas, interior levels may exceed 45 dBA DNL. For development with sensitive receptors, the City's normally acceptable exterior noise threshold is 60 dBA DNL. Interior noise levels are a function of the use of the space but should generally be limited to 45 dBA DNL or less. Interior noise levels are approximately 15 dBA lower than exterior levels within residential units with the windows partially open and approximately 20 to 25 decibels lower than exterior noise levels with the windows closed, assuming typical construction methods. Where exterior day-night average noise levels are 60 to 70 dBA DNL, interior noise levels can typically be maintained below 45 dBA DNL with the incorporation of an adequate forced air mechanical ventilation system in the residential units to allow residents the option of controlling noise by keeping the windows closed. Standard office and commercial construction methods typically provide approximately 25 to 30 decibels of noise reduction in interior spaces. The need for noise attenuation measures in building construction and project design for non-sensitive land uses (e.g., commercial, industrial, and institutional) will be determined on a project by project basis at the time development is proposed. In all areas exceeding 70 dBA DNL, the inclusion of windows and doors with high Sound Transmission Class (STC) ratings, and the incorporation of forced-air mechanical ventilation systems, may be necessary to meet 45 dBA DNL.

Based on the modeled roadway traffic volumes for the proposed General Plan, future traffic noise levels throughout San José were modeled to determine the noise level contours along a range of roadways from local residential streets to major roadways to highways. Contours are depicted for each Planning Area in Appendix C and shown citywide in Figure 3.3-2. Traffic noise represents the primary noise source in San José. For the purposes of this assessment, noise levels along the railroad and light rails are estimated to remain similar to existing conditions. Sources such as local industrial plants and stationary ground sources only affect limited areas of the City and are addressed through project specific CEQA documents and by the implementation of the Municipal Code and proposed General Plan policies identified in the following discussion. The overall noise environment at any

specific location would be comprised primarily of noise from local and distant traffic, and where applicable, from intermittent railroad, light-rail, and aircraft passbys, as well as contributions from local stationary noise sources. The noise contours do not take into account the presence of buildings or soundwalls and fences that may reduce the exterior noise levels in protected areas at sensitive receptors along roadways throughout San José.

The San Felipe and Calero Planning Areas both are outside the Urban Growth Boundary. No villages, corridors, or other substantial land use changes allowing for urban development are proposed under the *Envision San José 2040 General Plan* for these two Planning Areas and therefore noise levels are not anticipated to substantially affect new sensitive land uses. A discussion of likely land use compatibility impacts from new development in Planned Growth Areas for each Planning Area is below.

This is a Program EIR and impacts are addressed in general terms, at a "program" level. All future development proposals will be required under CEQA to prepare a project specific environmental analysis. Development that is generally consistent with the *Envision San José 2040 General Plan* may tier from the Program EIR once it is certified and approved with the General Plan. The project specific review will, however, need to identify the then-current conditions at the proposed development site, consistent with CEQA requirements.

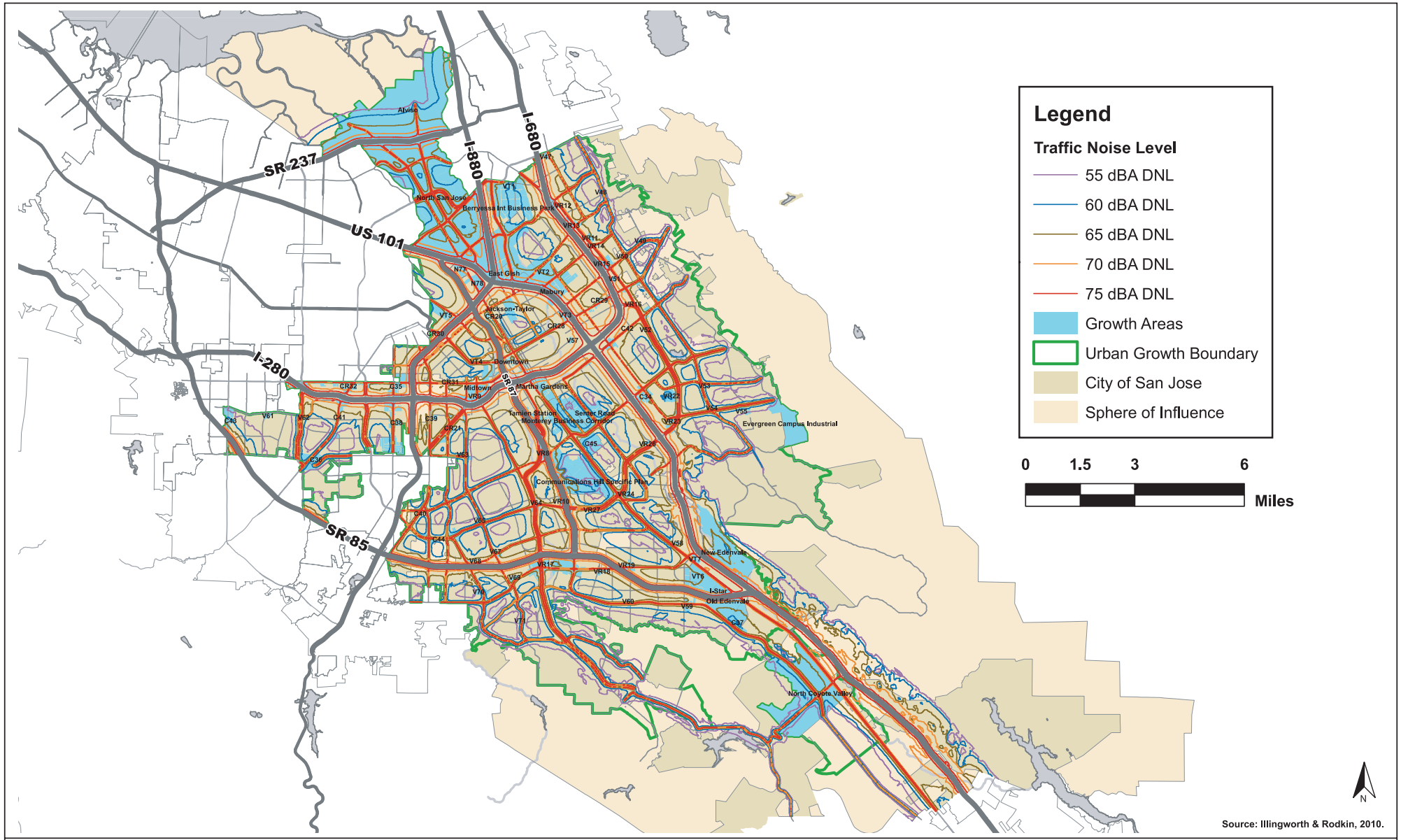
Almaden Planning Area

The Almaden Planning Area includes one proposed Neighborhood Village, V71, which is located northwest of the Redmond Avenue and Meridian Avenue intersection. Traffic noise levels within and adjacent to V71 would range from less than 55 dBA DNL to 65 dBA DNL. Noise levels on portions of the site closest to Meridian Avenue would exceed the City's noise threshold of acceptability.

Alum Rock Planning Area

The Alum Rock Planning Area includes the Mabury Employment Land Area and a proposed BART station within the BART/Caltrain Village growth area VT2, which is bisected by Berryessa Road in the north and borders Mabury Road to the south. Traffic noise levels are expected to range from 60 to 65 dBA DNL throughout most of this growth area, except the westerly area nearest US 101 where noise levels could be up to 70 dBA DNL.

The light rail corridors and villages VR11, VR14, and VR15 are planned along Capitol Avenue and an existing light rail line. In areas west of the light rail line, traffic noise levels would range from 70 to greater than 75 dBA DNL due to the proximity to US 101. In areas east of the light rail line and Capitol Expressway, traffic noise levels would range from 60 to 70 dBA DNL. Planned Neighborhood Village V51 is located south of VR15, on the west side of the light rail line, within the 70 to 75 dBA DNL traffic noise contour which exceeds the City's noise threshold of acceptability. Traffic noise levels would be less than 70 dBA DNL in some southeastern portions of V51 further away from US 101. The remaining Neighborhood Villages within the Planning Area are V49, V50, and V52. Traffic noise levels in the northern areas of V49 would range from 55 to 60 and reach up to 70 dBA DNL near McKee Road to the south. Traffic noise levels at V50 and V52 are expected to range from 60 to 70 dBA DNL, except for locations nearest roadways where traffic noise levels reach or exceed 70 dBA DNL. CR29 is a planned Light Rail Corridor following a stretch of Alum Rock Avenue that intersects major roadways including King Road, Jackson Avenue, I-680, Capitol



Source: Illingworth & Rodkin, 2010.

CITYWIDE 2035 TRAFFIC NOISE CONTOURS

FIGURE 3.3-2

Expressway and White Road. Development within CR29 would be exposed to noise that exceeds the City's noise acceptability thresholds.

Alviso Planning Area

The Alviso Planning Area includes the Don Edwards San Francisco Bay National Wildlife Refuge and the Alviso Master Plan Area. Commercial development would occur primarily on the Water Pollution Control Plant buffer lands within the Alviso Master Plan Area as part of the *Envision San José 2040 General Plan*. Commercial development in the immediate vicinity of North First Street, Zanker Road, and SR 237 would be exposed to noise levels exceeding the City's noise acceptability thresholds. Planned residential development nearest to North First Street would also be exposed to noise levels exceeding the City's noise acceptability thresholds due to traffic noise.

Berryessa Planning Area

Development proposed in the Berryessa Planning Area includes proposed Neighborhood Villages V47 and V48, a portion of BART/Caltrain Village VT2, and Light Rail Corridors VR12 and VR13. Employment Land Areas include VT1, the Berryessa International Business Park, and East Gish. The Berryessa Planned Residential Community is also included in the Berryessa Planning Area and will be phased out upon adoption of the General Plan. The location of VT2 would be exposed to noise levels ranging from 55 to 65 dBA DNL throughout most of this Growth Area, except the areas near US 101 and Berryessa Road where noise levels could be up to 70 dBA DNL. The location of V47 would be exposed to traffic noise levels from 65 to 70 dBA DNL. The location of V48 is primarily within the 55 to 65 DNL noise contours. VR12 and VR13 are located along Capitol Avenue and a light rail line, and reside within noise contours with traffic noise levels ranging from 65 to greater than 75 dBA DNL. Noise levels for new residential development within Growth Areas in the Berryessa Planning Area would exceed the City's noise thresholds of acceptability due to existing and increased automobile and transit traffic on major roadways.

Cambrian/Pioneer Planning Area

The Cambrian/Pioneer Planning Area includes five planned Neighborhood Villages, a Light Rail Village, and two Commercial Center Villages. Neighborhood Village V67 is located east of Meridian Avenue and Branham Lane transects the area. Traffic noise levels throughout V67 would range from 60 to 70 dBA DNL. Neighborhood Village V68 would be located northeast of the Camden Avenue and Branham Lane intersection, near SR 85. Traffic noise levels throughout V68 would range from 65 to 75 dBA DNL. Neighborhood Village V69 would be located where Kooser Road, Meridian Avenue, and Blossom Hill Road converge. Traffic noise levels in most areas of V69 could range from 60 to 70 dBA DNL and those areas closest to Blossom Hill Road and Meridian Avenue would reach 70 dBA DNL. Neighborhood Village V70 is adjacent to the Camden Avenue and Kooser Road intersection and extends down to Blossom Hill Road. Traffic noise levels throughout much of V70 would be less than 60 dBA DNL except near roadways where traffic noise levels would range from 65 to 75 dBA DNL. Bound to the north by SR 85 and with Almaden Expressway and Blossom Hill Road intersecting, Light Rail Village VR17 would be exposed to a wide range of traffic noise levels from 60 dBA DNL to greater than 75 dBA DNL. Commercial Center Village C44 is located along Camden Avenue near Union Avenue and Leigh Avenue and extends to the east adjacent to Hillsdale Avenue. At this location, traffic noise levels are generally within the 60 to 65 dBA DNL range but could be as high as 75 dBA DNL adjacent to Camden Avenue. Portions of Commercial Center Village C40 are located in this Planning Area and would be

exposed to traffic noise levels up to 65 dBA DNL. Neighborhood Village V64 is partially located within the Cambrian/Pioneer Planning Area and would be exposed to traffic-generated noise levels up to 75 dBA DNL. New residential development planned in the Cambrian/Pioneer area would be exposed to noise levels above the City's noise thresholds of acceptability due to existing and increased traffic levels.

Central/Downtown Planning Area

The Central/Downtown Planning Area includes three proposed BART stations; two along Santa Clara Street within the Downtown land use area, and one located north of Santa Clara Street near US 101 that is within a BART/Caltrain Village (VT3). A Light Rail Corridor (CR28) is proposed along the BRT route on Santa Clara Street. Planned Community/Specific Plan Areas within the Central/ Downtown Planning Area include: Jackson-Taylor, Midtown, Martha Gardens, and Tamien Station. Traffic noise levels within the Jackson/Taylor Planned Residential Community range from 55 to 70 dBA DNL. The Midtown Planned Community would experience traffic noise levels of 60 dBA DNL to 75 dBA DNL. Traffic noise levels in the Martha Gardens Planned Community range from close to 65 dBA DNL to greater than 75 dBA DNL. The Tamien Station Planned Community would experience noise levels ranging from 65 to greater than 75 dBA DNL. Neighborhood Village V57 is proposed at William Street and 24th Street and would be exposed to a noise environment where traffic noise contributes less than 70 dBA DNL except in the easternmost portions of the site where US 101 traffic noise would be 70 dBA DNL. Light Rail Village VR9[44] is located south of the Midtown Specific Plan area and adjacent to I-280. Southwest Expressway borders VR9 to the south and VR9 would be exposed to traffic noise levels ranging from 65 dBA DNL in some northern sections to greater than 75 dBA DNL at locations near I-280.

Proposed Light Rail Corridors and Villages along West San Carlos Street (CR31) would also be exposed to a wide range of traffic noise levels from 55 dBA DNL north of and away from San Carlos Street to 70 dBA DNL near the roadway. Proposed BART/Caltrain Village VT4 follows The Alameda (SR 82) east of the intersection with Julian Street, and would be exposed to traffic noise levels ranging from 55 to 70 dBA DNL. Growth area CR20 consists of planned light rail villages and corridors, and is bounded by SR 87 to the west and the light rail line/North First Street to the east. West Taylor Street transects the area and traffic noise levels would range from 60 dBA DNL along First Street to 75 dBA DNL along SR 87. The City's noise thresholds of acceptability would be exceeded at proposed sensitive land uses due to existing and increased automobile and transit traffic.

Coyote Planning Area

The Coyote Planning Area includes the North Coyote Valley Employment Land Area and the adjacent Coyote Valley Urban Reserve. Traffic noise levels in North Coyote Valley would range from less than 55 dBA DNL to 75 dBA DNL adjacent to Monterey Highway and would be up to 67 dBA DNL on Bailey Avenue. Noise levels would not exceed the City's noise threshold of acceptability for office and commercial uses but would exceed the threshold for planned educational uses on Bailey Avenue due to increased automobile traffic.

[44] Jobs and developable area from Former Village C46 - Meridian/Parkmoor were consolidated into Village VR9 - Race Street Light Rail.

Edenvale Planning Area

Neighborhood Villages, BART/Caltrain Villages, Light Rail Villages, and Commercial Center Villages are proposed in the Edenvale Planning Area. Neighborhood Village V58 would be located on the east side of SR 82/Monterey Highway at its intersection with Roeder Road/Chynoweth Avenue. Neighborhood Village V59 would be located east of Cottle Road where Santa Teresa Boulevard intersects and Neighborhood Village V60 would be located west of the Snell Avenue and Santa Teresa intersection. Most areas of V58, V59, and V60 would be exposed to traffic noise levels ranging from 60 to 70 dBA DNL; however, nearest Monterey Highway and Santa Teresa Boulevard traffic noise levels would reach 75 dBA DNL. Light Rail Villages VR18 and VR19 would both be located along Blossom Hill Road, on opposite sides of SR 85 from each other and would be exposed to similar, wide-ranging, traffic noise levels of 60 to greater than 75 dBA DNL. SR 85 and the Old Edenvale Employment Land Area bound the BART/Caltrain Village VT6 to the south. Cottle Road to the west, Blossom Hill Road to the north, and Monterey Road (SR 82) bound VT6 to the northeast. Most of the VT6 would be exposed to traffic noise levels ranging from 60 to 70 dBA DNL; however, areas of VT6 closest to SR 85 would be exposed to traffic noise levels up to 75 dBA DNL. Commercial Center Village C37 is located adjacent to Bernal Road and Santa Teresa Boulevard and would predominantly be exposed to traffic noise levels from 55 to 65 dBA DNL. Noise levels in proposed growth areas would exceed the City's noise threshold of acceptability due to existing and increased automobile and transit traffic.

Evergreen Planning Area

The Evergreen Planning Area includes one proposed light rail station, three planned Neighborhood Villages, two proposed Light Rail Villages, one Commercial Center Village and Corridor, one Specific Plan area, and one employment land area. Neighborhood Village V53 is located at the intersection of White Road and Quimby Road, mostly south of White Road. Neighborhood Village V54 encompasses the intersection of White Road/San Felipe Road and Aborn Road, while V55 is planned just south of Aborn Road, adjacent to Ruby Avenue. Traffic noise levels are expected to range from 55 to 65 dBA DNL throughout the majority of each area and 65 to 75 dBA DNL nearing the roadways and intersections. Light Rail Villages VR22 and VR23 are predominately west of Capitol Expressway and adjacent to corresponding planned light rail stations. Neighborhood Village VR22 would have most areas with traffic noise levels under 65 dBA DNL; however, traffic noise levels closer to Capitol Expressway and Quimby Road would range from 65 to 75 dBA DNL. Traffic noise levels throughout most of VR23 would range from 60 to 70 dBA DNL. Commercial Center C34 is planned in the westernmost portion of the Planning Area, and would be exposed to traffic noise levels of 60 to 75 dBA DNL. The Evergreen Campus Industrial Employment Land Area and Evergreen Specific Plan are also located in the Planning Area. Traffic noise levels throughout most of the Specific Plan area would be less than 55 dBA DNL, exceptions being at close proximities to roadways (e.g., Aborn Road, Quimby Road) where noise levels are expected to be 60 to 75 dBA DNL.

North San José Planning Area

A majority of the North San José Planning Area is made up of employment-generating land uses shown on the Planned and Identified Growth Areas map as an Employment Land Area. This Employment Land Area is included in the North San José Area Development Policy. Development allowed under the proposed General Plan is anticipated to result in approximately 97,000 new jobs and 25,300 dwelling units by 2035. The Rincon South Specific Plan Area and a BART/Caltrain

Village (VT5) are also included in the southernmost portion of the Planning Area. The Rincon South Specific Plan Area includes residential land uses within the 65 to 75 dBA DNL noise contours and would exceed the City's noise thresholds of acceptability. VT5 is planned for additional employment-generating land uses. Residential development in the North San José Planning Area would exceed the City's noise compatibility thresholds due to existing and increased automobile and transit traffic.

South San José Planning Area

The Communications Hill Specific Plan Area, two Light Rail Villages and seven Employment Land Areas are planned throughout the area. Light Rail Village VR10 is planned adjacent to an existing light rail line and a station at SR 87 and Capitol Expressway. Traffic noise levels in this location are expected to range from 65 to greater than 75 dBA DNL. Light Rail Village VR8 is planned between Almaden Expressway and SR 87, adjacent to the existing light rail station at SR 87 south of Curtner Avenue. Exposure to traffic noise levels in this area are likely to range from 65 to greater than 75 dBA DNL with development allowed through 2035. Noise levels in proposed Growth Areas would exceed the City's noise threshold of acceptability for sensitive uses due to existing and increased automobile and transit traffic.

West Valley Planning Area

Neighborhood Villages V61 and V62 are proposed along Bollinger Road and Lawrence Expressway, respectively. While V61 would be located in an area exposed to traffic noise levels less than 60 dBA DNL, noise levels at portions of V62 would be 60 to 70 dBA DNL. Commercial Center Villages and Corridors are proposed along De Anza Boulevard (C43), Saratoga Avenue (C36 and C41), Stevens Creek Boulevard/I-280 (C35), and Winchester Boulevard (C38). These land uses would be located in zones exposed to traffic noise levels that range from 60 to greater than 75 dBA DNL. Since C35 is located between Stevens Creek Boulevard and I-280, traffic noise levels would exceed 60 dBA DNL throughout the growth area and exceed 70 dBA DNL in areas closest to the roadways. Planned Light Rail Corridor CR32 is located along Stevens Creek Boulevard and Saratoga Avenue, and would be exposed to traffic noise levels similar to C35. Growth area CR30 is located near I-880 and consists of planned light rail villages and corridors. Traffic noise levels at CR30 would range from 65 to greater than 75 dBA DNL. Noise levels at proposed development areas would exceed the City's noise thresholds of acceptability due to existing and increased automobile and transit traffic.

Willow Glen Planning Area

Commercial and residential growth areas are proposed within the Willow Glen Planning Area. Following Bascom Avenue from I-280 to Southwest Expressway and continuing in the southern portion of Willow Glen, land uses in the C39 (north portion) and C40 (south portion) commercial centers would be exposed to traffic noise levels ranging from 60 to 75 dBA DNL. Neighborhood Village V63 is roughly centered about the intersection of Meridian Avenue and Hamilton Avenue, and would be exposed to traffic noise levels ranging from 55 to 75 dBA DNL. Planned neighborhood village V64 is located near the intersection of Almaden Expressway and Hillsdale Avenue and would be exposed to traffic noise levels ranging from 60 to 75 dBA DNL. Planned Neighborhood Village V65 is located west of Meridian Avenue near Foxworthy Avenue and bounded by Hillsdale Avenue to the south. Traffic noise levels would be in the range of 55 to 70 dBA DNL except along areas closest to Meridian Avenue, where noise levels would exceed 70 dBA DNL due to existing and increased automobile and transit traffic.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Proposed Land Uses

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce impacts resulting from placement of sensitive uses near sources of elevated noise levels. Proposed General Plan Policies and Actions that provide program-level mitigation to reduce noise impacts to sensitive uses within the City are identified below.

Community Noise Levels and Land Use Compatibility Policies and Actions	
Policy EC-1.1[45]	Locate new development in areas where noise levels are appropriate for the proposed uses. Consider federal, state and City noise standards and guidelines as a part of new development review. Applicable standards and guidelines for land uses in San José include: <u>Interior Noise Levels</u> • The City's standard for interior noise levels in residences, hotels, motels, residential care facilities, and hospitals is 45 dBA DNL. Include appropriate site and building design, building construction and noise attenuation techniques in new development to meet this standard. For sites with exterior noise levels of 60 dBA DNL or more, an acoustical analysis following protocols in the City-adopted California Building Code is required to demonstrate that development projects can meet this standard. The acoustical analysis shall base required noise attenuation techniques on expected General Plan traffic volumes to ensure land use compatibility and General Plan consistency over the life of this plan. <u>Exterior Noise Levels</u> • The City's acceptable exterior noise level objective is 60 dBA DNL or less for residential and most institutional land uses (Table EC-1). The acceptable exterior noise level objective is established for the City, except in the environs of the San José International Airport, the Downtown Core Area, and along major roadways. For the remaining areas of the City, the following standards apply: o For new multi-family residential projects and for the residential component of mixed-use development, use a standard of 60 dBA DNL in usable outdoor activity areas, excluding balconies and residential stoops and porches facing existing roadways. There will be common use areas available to all residents that meet the 60 dBA exterior standard. Use noise attenuation techniques such as shielding by buildings and structures for outdoor common use areas. o For single-family residential uses, use a standard of 60 dBA DNL for exterior noise in private usable outdoor activity areas, such as back yards.
Policy EC-1.8	Commercial drive-through uses will be allowed only when consistency with the City's exterior noise level guidelines and compatibility with adjacent land uses can be demonstrated.
Policy EC-1.9	Noise studies are required for land use proposals where known or suspected loud intermittent noise sources occur which may impact adjacent existing or planned land uses. For new residential development affected by noise from heavy rail, light

[45] Policy EC-1.1 as shown is modified in this list to omit Table EC-1 which is shown as Table 3.3-5 in this EIR.

	rail, BART or other single-event noise sources, mitigation will be implemented so that recurring maximum instantaneous noise levels do not exceed 50 dBA L_{max} in bedrooms and 55 dBA L_{max} in other rooms.
Action EC-1.13	Update noise limits and acoustical descriptors in the Zoning Code to clarify noise standards that apply to land uses throughout the City.
Action EC-1.14	Require acoustical analyses for proposed sensitive land uses in areas with exterior noise levels exceeding the City's noise and land use compatibility standards to base noise attenuation techniques on expected General Plan traffic volumes to ensure land use compatibility and General Plan consistency.

Existing Regulations and Adopted Plans and Policies

Existing federal, state, and local regulations that would reduce or avoid possible impacts due to land use incompatibility from the development of sensitive land uses include:

- Title 24, Code of Federal Regulations, Part 51
- 2007 California Building Code
- San José Municipal Code Zoning Ordinance Standards

Impact NV-1: Implementation of the proposed *Envision San José 2040 General Plan* will place substantial residential development and sensitive uses such as parks, day care centers, and other land uses developed in Villages and Corridors at locations having existing and future noise levels identified as Conditionally Acceptable or Unacceptable in the Land Use Compatibility Guidelines. Consistency with General Plan policies and actions and with state, federal, and local laws and regulations will ensure that siting, design, and construction standards avoid or mitigate noise impacts to less than significant. **(Less Than Significant Impact)**

3.3.4.2 *New Noise Generating Land Uses and Compatibility*

Mixed-use development projects often include residential uses located above or near commercial uses, and are located in areas served by rail and bus transit along major roadways and the railroad corridor. Under the *Envision San José 2040 General Plan*, the Urban Village land use designation includes proposed mixed-use residential development throughout San José. Many of the proposed Village locations are along major roadways, the existing light rail corridor, proposed light rail stations, and proposed BART stations. Office, commercial, retail, or other noise-generating uses developed under the *Envision San José 2040 General Plan* could substantially increase noise levels at noise-sensitive land uses or could expose receivers to noise levels that exceed the City's Municipal Code noise limits (which are keyed to property lines).

Future operations at existing and proposed noise-producing land uses are dependent on many variables. Noise conflicts may be caused by noise sources such as outdoor dining areas or bars, mechanical equipment, outdoor maintenance areas, truck loading docks and delivery activities, public address systems, and parking lots (e.g., opening and closing of vehicle doors, people talking, car alarms).

As discussed in Section 3.3.2.1, day-night average noise levels vary throughout the community depending on the number of trains operating along a given railroad line per day, the timing and duration of train passby events, and whether or not trains must sound their warning whistles. Another important factor to consider in determining noise levels in areas near railroad stations and corridors and the VTA light rail is shielding provided by buildings or other barriers. Day-night average noise levels commonly range from 65 to 75 dBA DNL at land uses adjoining a railroad right-of-way. Railroad train noise levels would generally exceed 60 dBA DNL within approximately 350 feet of active railroad corridors (10 to 15 trains per day). Where residential development is located adjacent to at-grade rail crossings, these sensitive uses would be subject to maximum instantaneous noise levels (L_{max}) from train warning whistles that range from approximately 90 to 110 dBA L_{max}. At stations such as Tamien, where trains may sit for two hours or more with engines and air conditioning units running, noise levels may exceed 75 dBA DNL within 80 feet.

Development under the proposed *Envision San José 2040 General Plan* would introduce new noise-generating sources adjacent to existing noise-sensitive areas and new noise-sensitive uses adjacent to existing noise sources.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts from Noise Generating Land Uses

The proposed *Envision San José 2040 General Plan* includes updated policies that would reduce or avoid exposure of sensitive uses to new noise generating land uses. Proposed General Plan Policies and Actions that provide program-level mitigation for development of and near noise generating land uses in the City are identified below.

Community Noise Levels and Land Use Compatibility Policies	
Policy EC-1.2	Minimize the noise impacts of new development on land uses sensitive to increased noise levels (Categories 1, 2, 3 and 6) by limiting noise generation and by requiring use of noise attenuation measures such as acoustical enclosures and sound barriers, where feasible. The City considers significant noise impacts to occur if a project would: • Cause the DNL at noise sensitive receptors to increase by five dBA DNL or more where the noise levels would remain "Normally Acceptable"; or • Cause the DNL at noise sensitive receptors to increase by three dBA DNL or more where noise levels would equal or exceed the "Normally Acceptable" level.
Policy EC-1.3	New nonresidential land uses will mitigate noise generation to 55 dBA DNL at the property line when located adjacent to existing or planned noise sensitive residential and public/quasi-public land uses.
Policy EC-1.9	Noise studies are required for land use proposals where known or suspected loud intermittent noise sources occur which may impact adjacent existing or planned land uses. For new residential development affected by noise from heavy rail, light rail, BART or other single-event noise sources, mitigation will be implemented so that recurring maximum instantaneous noise levels do not exceed 50 dBA L_{max} in bedrooms and 55 dBA L_{max} in other rooms.

Existing Regulations and Adopted Plans and Policies

Existing local regulations that would reduce or avoid possible impacts due to land use incompatibility from noise-generating land uses include:

- San José Municipal Code Zoning Ordinance Standards

Discussion of New Noise Generating Land Uses and Compatibility Impacts

Implementation of the *Envision San José 2040 General Plan* may result in the placement of sensitive land uses near existing noise-generating land uses and vice versa. The proposed *Envision San José 2040 General Plan* policies in combination with the requirements of the Municipal Code will ensure new noise generating land uses and the placement of sensitive land uses adjacent to noise generating land uses will not result in adverse impacts. The proposed General Plan policies require the use of noise attenuation measures, as applicable, to minimize impacts to noise sensitive uses and the reduction of noise in habitable spaces from intermittent sources to acceptable levels. The City's General Plan policies and Municipal Code also require new noise-generating land uses to reduce noise levels to 55 dBA DNL at the property line when located adjacent to sensitive uses.

Impact NV-2: Implementation of the *Envision San José 2040 General Plan* may result in sensitive uses located near noise-generating land uses. The proposed General Plan policies and the City's Municipal Code standards ensure that existing residences and other noise-sensitive land uses would not be exposed to excessive noise. **(Less Than Significant Impact)**

3.3.4.3 *Traffic-Generated Noise Levels*

Increases in traffic noise gradually degrade the environment in areas sensitive to noise. According to CEQA, "a substantial increase" is necessary to cause a significant environmental impact. An increase of three dBA DNL is considered substantial in noise sensitive areas along the roadways analyzed in San José because noise exposures at a distance of 75 feet from the roadway centerline already generally exceed 60 dBA DNL. Based on traffic modeling completed for the General Plan, vehicular traffic on roadways in the city are anticipated to increase as development occurs and the population increases. These projected increases in traffic would, over time, increase noise levels throughout the community. Traffic noise levels throughout San José were projected for General Plan build-out in the year 2035 to determine noise impacts resulting from changes in vehicular traffic volumes.

Proposed roadway modifications could increase or decrease traffic noise levels depending on the circumstances of each project. Where roadway expansions are planned adjacent to sensitive receptors, substantial noise level increases could occur. To the extent noise attenuation measures are included in the roadway design and implemented at the affected structures these noise levels may be reduced. The specific increases in traffic-generated noise levels and potential to fully mitigate any impacts would be determined at the time the roadway expansion projects are proposed and undergo project-specific environmental review.

Noise levels along a range of roadways including highways, expressways, major roadways, and local streets in San José were calculated for the year 2035 and compared to existing conditions (2008) to quantify the noise increase attributable to the development allowed by the proposed General Plan.

The existing and future roadway noise levels are based on the results of traffic modeling prepared for the General Plan. These data are summarized in Tables 3.3-6 and 3.3-7. Noise levels along US 101, I-280, I-680, I-880, SR 237, SR 85, and SR 87 are expected to increase up to one dBA DNL. Expressways would also generally increase 0 to 1 dBA DNL. While traffic will increase, local highways and expressways are generally considered to be built out and are not anticipated to undergo substantial capacity expansion over the life of the General Plan; therefore, traffic is not anticipated to double on freeways and expressways which would have to occur for traffic noise to audibly increase.

Table 3.3-6
Noise Levels for Highways and Expressways

Planning Area	Highway/Expressway Segment	DNL at 75 ft. (dBA)[1]		DNL Increase[2] (dBA)
		2008 Existing	2035	
Almaden	Almaden Expwy. – Camden to Redmond	68	68	0
Willow Glen	Almaden Expwy. – Foxworthy to Lincoln	71	72	1
Cambrian/Pioneer	Almaden Expwy. – SR 85 to Blossom Hill	71	72	1
Evergreen	Capitol Expwy. – Aborn to Silver Creek	71	71	0
Berryessa	Capitol Expwy. – I-680 to Hostetter	70	71	1
Alum Rock	Capitol Expwy. – Ocala to Tully	71	71	0
South San José	Capitol Expwy. – Senter to Monterey	70	70	0
West Valley	I-280 – West of SR 17	81	82	1
Central/Willow Glen	I-280 – West of SR 87	82	82	0
Central/Downtown	I-280 – West of US 101	81	82	1
Alum Rock	I-680 – North of Alum Rock	82	83	1
Alum Rock	I-680 – South of Capitol Expwy	82	83	1
West Valley/Central	I-880 – North of I-280	80	81	1
North San José/Berryessa	I-880 – North of US 101	81	82	1
West Valley	Lawrence Expwy. – Doyle to Prospect	70	70	0
North San José	Montague Expwy. – Guad. River to First	71	71	0
North San José	Montague Expwy. – McCarthy to I-880	69	69	0
Cambrian/Pioneer	SR 17 – East of SR 9	79	80	1
Alviso/North San José	SR 237 – West of I-880	82	82	0
Cambrian/Pioneer	SR 85 – East of SR 17	78	79	1
Edenvale	SR 85 – West of SR 87	77	78	1
South San José	SR 87 – South of Curtner	78	79	1
North San José	SR 87 – South of US 101	74	75	1
West Valley	San Tomas Expwy. – Williams to Payne	70	70	0
Alum Rock	US 101 – North of I-680	82	83	1
Edenvale	US 101 – South of SR 85	80	81	1
North San José	US 101 – North of I-880	81	82	1

Notes: [1]Noise levels for Highways and Expressways are given at a distance of 75 feet from the center of the near direction of travel.
[2]Substantial noise level increases (i.e., three dBA DNL or greater) are indicated in bold font; such increases that would result in a significant impact are shaded.

The relative increases in traffic noise 75 feet from the affected major roadway segments for each Planning Area are shown in Table 3.3-7. Noise levels would increase by less than three dBA DNL between 2008 and 2035 throughout much of San José with build-out of the General Plan. However, noise levels would increase substantially (more than three dBA DNL) along segments of Bailey

Avenue, Blossom Hill Road, Lincoln Avenue, Mabury Road, McKean Road, Monterey Road, Moorpark Avenue, Oakland Road, Santa Clara Street, Santa Teresa Boulevard, Tasman Drive, Trimble Road, and Zanker Road.

Table 3.3-7
Noise Levels for Major Roadways

Planning Area	Roadway Segment	DNL at 75 ft. (dBA)[1]		DNL Increase[2] (dBA)
		2008 Existing	2035	
Central/Downtown	10th St – Hedding to US 101	67	69	2
Central/Downtown	13th St – US 101 to Berryessa	64	63	-1
Central/Downtown	First St – I-880 to Hedding	68	68	0
Central/Downtown	First St – South of I-280	73	73	0
North San José	First St – Tasman to SR 237	72	74	2
North San José	First St – Trimble to Brokaw	67	67	0
Central/Downtown	Seventh St – I-280 to Williams	60	60	0
Evergreen	Aborn Rd – Capitol to San Felipe	72	72	0
South San José	Almaden Rd – Alma to Almaden Expwy	69	69	0
Alum Rock	Alum Rock Avenue	68	68	0
Coyote	Bailey Ave – McKean to Santa Teresa	60	67	**7**
Cambrian/Pioneer	Bascom – East Mozart to Camden	69	71	2
Willow Glen	Bascom Ave – Campbell to Curtner	70	72	2
Willow Glen	Bascom Ave – Hamilton to Fruitdale	70	72	2
West Valley	Bascom Ave – I-880 to Newhall	70	70	0
Berryessa	Berryessa Rd – Capitol to I-880	67	67	0
Edenvale	Blossom Hill Rd – Almaden to Santa Teresa	70	70	0
Cambrian/Pioneer	Blossom Hill Rd – Union to Los Gatos	64	68	**4**
Cambrian/Pioneer	Branham Ln – Almaden to Pearl	68	69	1
Berryessa	Brokaw Rd – I-880 to Oakland	73	73	0
North San José	Brokaw Rd – I-880 to Zanker	71	71	0
Almaden	Camden Ave – Coleman to Hicks	62	62	0
Willow Glen	Camden Ave – Leigh to Hillsdale	70	71	1
Berryessa	Capitol Ave – Hostetter to Berryessa	72	74	2
Alum Rock	Capitol Ave – McKee to Alum Rock	72	72	0
Berryessa	Capitol Ave – Montague to Cropley	73	75	2
Willow Glen	Curtner Ave – Cherry to Lincoln	67	67	0
Coyote	Hale Ave – Kalana to Palm	61	62	1
Central/Downtown	Hedding St – Coleman to SR 87	67	70	**3**
Berryessa	Hostetter Rd – Lundy to I-680	70	70	0
Central/Downtown	Julian St – 21st to 24th	62	62	0
Alum Rock	King Rd – McKee to Alum Rock	66	66	0
Alum Rock	King Rd – Ocala to Tully	68	68	0
Willow Glen	Leigh Ave – Campbell to Curtner	67	67	0
Willow Glen	Lincoln Ave – Willow to Pine	67	70	**3**
Alum Rock	Mabury Rd – King to North Jackson	66	69	**3**
Alum Rock	Mabury Rd – King to Taylor	68	70	2
Almaden	McKean Rd – Harry to Hunters Hill	62	67	**5**
Alum Rock	McKee Rd – Capitol to I-680	70	71	1
Willow Glen	Meridian Ave – Hamilton to Campbell	68	68	0

Table 3.3-7
Noise Levels for Major Roadways

Planning Area	Roadway Segment	DNL at 75 ft. (dBA)[1]		DNL Increase[2] (dBA)
		2008 Existing	2035	
Willow Glen	Meridian Ave – Southwest to Fruitdale	68	68	0
South San José	Monterey Rd – Alma to Curtner	73	73	0
Coyote	Monterey Rd – Bernal to Bailey	67	75	**8**
Edenvale	Monterey Rd – Blossom Hill to Branham	74	74	0
Coyote	Monterey Rd – Kalana to Palm	69	74	**5**
Edenvale	Monterey Rd – SR 85 to Bernal	70	71	1
West Valley	Moorpark Ave – Borina to Castlewood	61	64	**3**
Berryessa	Morrill Ave – Hostetter to Cropley	66	66	0
Berryessa	Oakland Rd – Montague to Murphy	70	74	**4**
Berryessa	Piedmont Rd – Pen. Creek to Berryessa	64	64	0
Evergreen	Quimby Rd – Capitol to White	68	68	0
Central/Downtown	San Carlos St – East of SR 87	63	63	0
Central/Downtown	San Carlos St – SR 87 to Almaden	71	73	2
Evergreen	San Felipe Rd – Yerba Buena to Park Estates	64	66	2
Central/Downtown	Santa Clara St – 17th to 19th	67	71	**4**
Central/Downtown	Santa Clara St – Almaden to SR 87	68	68	0
Coyote	Santa Teresa Blvd – Bernal to Bailey	61	71	**10**
Edenvale	Santa Teresa Blvd – Cahalan to Blossom Hill	69	69	0
Coyote	Santa Teresa Blvd – Cottle to Bernal	68	73	**5**
Edenvale	Santa Teresa Blvd – SR 85 to Blossom Hill	71	71	0
West Valley	Saratoga Ave – Hamilton to Payne	67	67	0
West Valley	Saratoga Ave – Moorpark to I-280	71	71	0
South San José	Senter Rd – Tully to Capitol	70	70	0
Willow Glen	Southwest Expwy. – Hamilton to Fruitdale	67	71	**4**
Central/Downtown	Stevens Creek Blvd – I-880 to Bascom	68	68	0
Central/Downtown	Story Rd – 12th to Senter	70	71	1
Alum Rock	Story Rd – Capitol to White	68	69	1
Alum Rock	Story Rd – King to Adrian	70	70	0
Alum Rock	Story Rd – US 101 to King	71	73	2
North San José	Tasman Dr – Guadalupe River to First Street	67	71	**4**
North San José	Tasman Dr – McCarthy to Zanker	67	68	1
West Valley	The Alameda – I-880 to El Camino Real	75	75	0
Central/Downtown	The Alameda – Race to Julian	74	74	0
North San José	Trimble Rd – US 101 to First Street	70	70	0
North San José	Trimble Rd – Zanker to Montague	67	73	**6**
Evergreen	Tully Rd – Capitol to White	72	72	0
Evergreen	Tully Rd – King to Quimby	72	72	0
South San José	Tully Rd – Senter to McLaughlin	72	72	0
Cambrian/Pioneer	Union Ave – SR 85 to Camden	67	67	0
Evergreen	White Rd – Quimby to Aborn	70	70	0
Alum Rock	White Rd – Story to Marten	68	68	0
West Valley	Winchester Blvd – Stevens Creek to I-280	70	70	0
West Valley	Winchester Blvd – Williams to Payne	67	69	2

Table 3.3-7
Noise Levels for Major Roadways

Planning Area	Roadway Segment	DNL at 75 ft. (dBA)[1]		DNL Increase[2] (dBA)
		2008 Existing	2035	
Evergreen	Yerba Buena Rd – Silver Creek to San Felipe	67	67	0
North San José	Zanker Rd – SR 237 to Holger	69	74	**5**

[1]Noise levels for major roadways are given at a distance of 75 feet from the center of the near direction of travel.
[2]Substantial noise level increases (i.e., three dBA DNL or greater) are indicated in bold font; such increases that would result in a significant impact are shaded.

Traffic noise levels are expected to increase by seven dBA DNL along the segment of Bailey Avenue (Coyote Planning Area) between McKean Road and Santa Teresa Boulevard, the primary east/west roadway serving the North Coyote Campus Industrial Area, an area which is planned for substantial employment development. There is currently an industrial park land use along this roadway segment that is not sensitive to increased traffic along Bailey Avenue. The rest of the area is vacant or agricultural. The noise environment in this area results from a combination of traffic noise along Bailey Avenue and intermittent aircraft operations associated with Norman Y. Mineta San José International Airport. Since there are no existing noise sensitive uses along Bailey Avenue, increased noise levels along this roadway would not result in a significant impact with the City's General Plan build-out.

The roadway segment of Blossom Hill Road from Union Avenue to Los Gatos Boulevard (Cambrian/Pioneer Planning Area) would experience noise level increases of four dBA DNL. Since the area is developed with medium and medium low density residential land uses that are sensitive to increased traffic noise, increased traffic forecast for the City's General Plan build-out would cause a significant noise impact.

Traffic noise levels on Hedding Street from Coleman Avenue to SR 87 are expected to increase three dBA. This increase in traffic noise would not be significant since the segment is directly south of Norman Y. Mineta San José International Airport runways and there are no residential land uses in the vicinity.

Traffic noise levels are expected to increase by three dBA DNL along Lincoln Avenue (Willow Glen Planning Area) between Willow Street and Pine Avenue. Land uses adjacent to this roadway segment include a neighborhood business district and medium low density residential; therefore, a significant impact could occur along this segment of Lincoln Avenue with build-out of the General Plan.

Traffic noise levels along Mabury Road (Alum Rock Planning Area), between King Road and Jackson Avenue are expected to increase by three dBA DNL. Existing land uses include transit corridor residential, medium and medium-high density residential, light industrial, and public park open space. The residential and park land uses are noise sensitive and the build-out of the City's General Plan would result in a significant impact at these locations.

McKean Road, between Harry Road and Hunters Hill Road (Almaden Planning Area) is the main roadway traversing the South Almaden Valley Urban Reserve area. It is an area that contains non-

urban hillside, residential, and public/quasi-public land uses. Traffic noise levels are expected to increase by five dBA DNL along McKean Road with build-out of the General Plan (including North Coyote Valley) which would result in a significant impact.

Traffic noise levels along Monterey Road (SR 82) are expected to increase by more than three dBA DNL at two segments in the Coyote Planning Area; Bernal Road to Bailey Avenue would increase by eight dBA DNL and Kalana Avenue to Palm Avenue would increase by five dBA DNL. The segment from Kalana Avenue to Palm Avenue is in agriculture land use that is not sensitive to noise; however, there are a few houses located further north on Monterey Road that may be impacted by these representative noise level increases. Between the two segments assessed is the Coyote Valley Urban Reserve within which no urban development is planned during this General Plan horizon. Land uses from Bernal Road to Bailey Avenue include medium and medium low density residential, built behind soundwalls and on the west side adjacent to a railroad line, public park and open space, non-urban hillside, and campus industrial. The residential land uses are noise sensitive and the build-out of the City's General Plan could result in a significant impact at these locations if the soundwall is not designed to mitigate higher noise levels.

Traffic noise levels are expected to increase on Moorpark Avenue (West Valley Planning Area) by three dBA DNL. Medium low density residential land uses are adjacent to the roadway at three segments: from the I-280 and SR17 interchange to Baywood Avenue, from Eden Avenue to San Tomas Expressway, and from Pinewood Drive to Williams Road. I-280 roughly parallels Moorpark Avenue. Build-out of the City's General Plan would result in a significant impact along these segments.

Various land uses are located along Oakland Road from Montague Expressway to Murphy Avenue (Berryessa Planning Area); including medium density residential, transit corridor residential, commercial, and industrial. With build-out of the General Plan, traffic noise levels are expected to increase by four dBA DNL along this roadway segment, which could result in a significant impact.

Traffic noise levels are expected to increase by four dBA DNL along Santa Clara Street, from 17th Street to 19th Street in the Central/Downtown Planning Area. Land uses along this segment include an existing neighborhood business district, medium high density residential, and a school and public park. Future development is planned to include mixed uses, including residential. The overall increase in noise levels in the area would result in a significant impact.

Two segments of Santa Teresa Boulevard (Edenvale and Coyote Planning Areas) are expected to result in increases in traffic noise levels greater than three dBA DNL. Traffic noise levels from Cottle Road to Bernal Road would increase by five dBA DNL and by 10 dBA DNL from Bernal Avenue to Bailey Avenue. Medium density residential and medium low density residential land uses are adjacent to both segments of Santa Teresa Boulevard. A significant impact would result with build-out of the City's General Plan.

Traffic levels are expected to increase along Southwest Expressway by four dBA DNL. From I-280 to Bascom Avenue medium high residential and high residential land uses, among others, are adjacent to the roadway. The overall increase in noise levels in some areas would actually be less than four dBA DNL as a result of the influence of I-280 traffic, major roadways, and aircraft in the area. Build-out of the City's General Plan would result in a significant impact along portions of Southwest Expressway near the intersection with Leigh Avenue.

Traffic noise levels are expected to increase by four dBA DNL along Tasman Drive from the Guadalupe River to First Street in the North San José Planning Area. High density residential, transit/employment residential, and industrial park land uses are located and/or planned along this roadway segment. Build-out of the General Plan could result in a significant impact to the residential land uses.

Land uses along Trimble Road, from Zanker Road to Montague Expressway (North San José Planning Area), are expected to experience a traffic noise increase of six dBA DNL. Since the only land uses existing and planned along the roadway segment are industrial park and industrial core area and are not noise sensitive, General Plan build-out would not result in a significant impact.

Zanker Road runs the length of the North San José Planning Area and into the Alviso Planning Area. Traffic noise levels along most of Zanker Road are expected to increase by three to five dBA DNL. Though primarily composed of industrial land uses, there are medium density residential and transit corridor residential land uses existing and planned along Zanker Road, and a state residential facility for developmentally disabled persons is still open although planned for closure. Build-out of the City's General Plan would result in a significant impact.

Proposed General Plan Policies That Reduce or Avoid Adverse Impacts from Traffic-Generated Noise

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce impacts to sensitive uses from increased traffic-generated noise levels. Proposed General Plan Policies that provide program-level mitigation for increased traffic noise within the city are identified below.

Community Noise Levels and Land Use Compatibility Policies	
Policy EC-1.4	Include appropriate noise attenuation techniques in the design of all new arterial streets projected to adversely impact noise sensitive uses.

Existing Regulations and Adopted Plans and Policies

Existing federal regulations that would reduce or avoid possible impacts due to land use incompatibility from noise-generating land uses include:

- Title 23, Code of Federal Regulations, Part 772

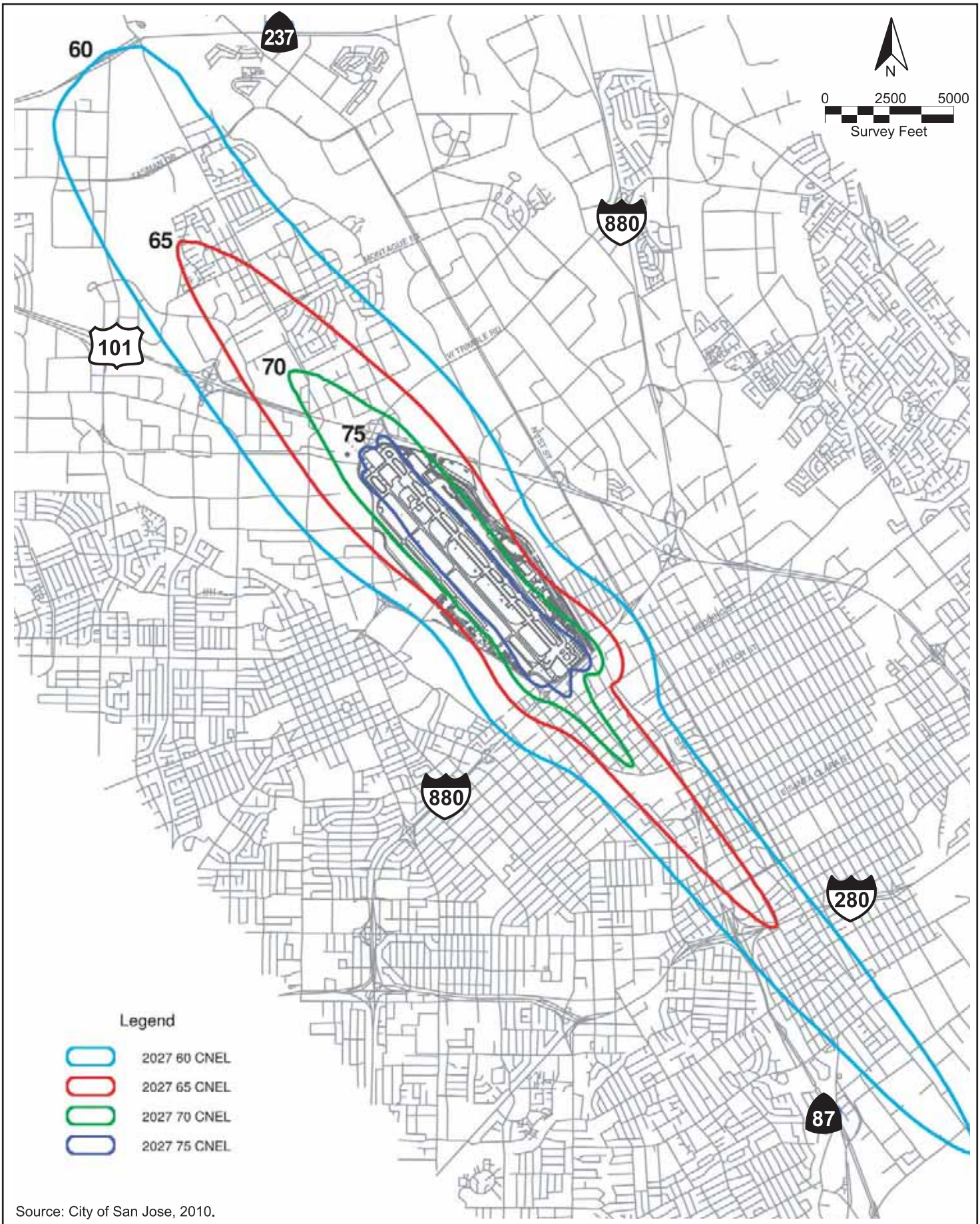
Discussion of Traffic-Generated Noise Level Impacts

The development capacity proposed by the General Plan would result in increased traffic-generated roadway noise that would result in significant noise level increases at sensitive land uses adjacent to heavily traveled roadways. In addition, roadway expansions adjacent to sensitive land uses may result in inadequate buffer space between expanded roadways and these sensitive uses to reduce noise levels to acceptable levels. Measures to reduce noise levels at sensitive land uses may not be adequate to reduce noise levels to acceptable levels in all instances.

Impact NV-3: The anticipated increase in vehicular traffic from implementation of the *Envision San José 2040 General Plan* would result in increased traffic noise at noise sensitive land uses adjacent to heavily traveled roadways throughout the City. Where roadways are expanded (e.g. Santa Teresa Blvd., Zanker Road) significant increases in noise levels at sensitive uses can be mitigated through the implementation of proposed General Plan policies and existing regulations (see also Section 3.3.5.1) but not in all cases due to the potential proximity of sensitive uses to the expanded roadway right-of-way. Therefore, the proposed *Envision San José 2040 General Plan* would result in significant impacts to sensitive land uses adjacent to roadways throughout the City due to increases in traffic-generated noise. **(Significant Impact)**

3.3.4.4 *Airport Noise*

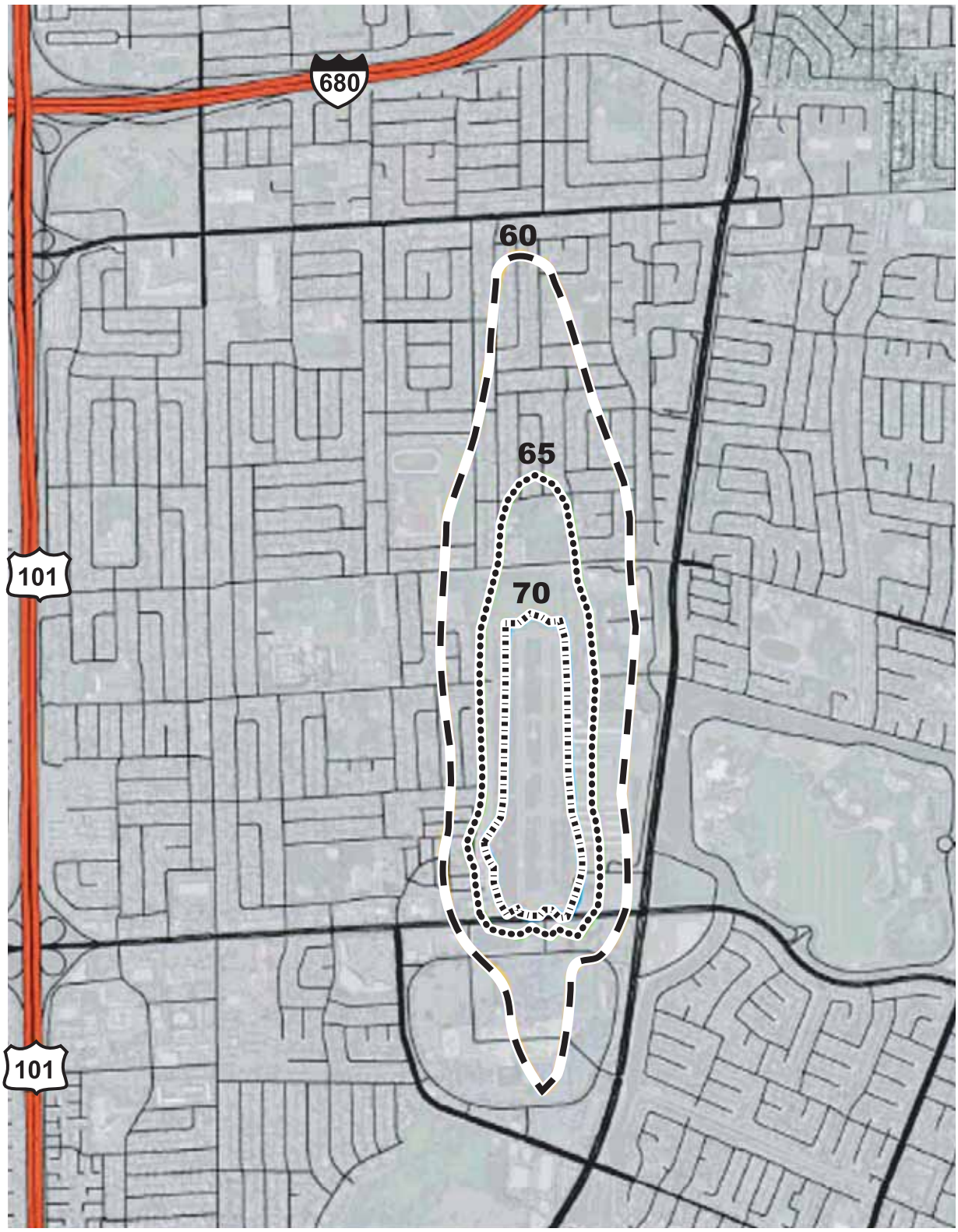
Development allowed by the *Envision San José 2040 General Plan* project would include noise sensitive land uses in the vicinity of Norman Y. Mineta San José International Airport or Reid-Hillview Airport. The Santa Clara County ALUC prepares a land use compatibility plan for areas in the vicinity of airports, and identifies 65 dBA CNEL as the maximum allowable noise level considered compatible with residential uses. The *Envision San José 2040 General Plan* would allow new development in areas of the City where existing and future aircraft noise levels associated with operations at Norman Y. Mineta San José International Airport would be just at or slightly above 65 dBA CNEL (refer to Figure 3.3-3). The future 65 dBA CNEL noise contour passes through a portion of BART/Caltrain Village VT5 proposed southwest of Coleman Avenue and Mineta San José International Airport. No noise-sensitive residential development is planned on the BART/Caltrain Village VT5 parcel and, therefore, would not be impacted. Light Rail Village CR20 is proposed just east of the 65 dBA CNEL noise contour anticipated by 2027. Residential development within the Downtown would be within the 65 CNEL noise contour. The project does not propose noise-sensitive land uses within the 65 dBA CNEL aircraft noise contour for Reid-Hillview Airport. Noise-sensitive land uses proposed in the Reid-Hillview Airport vicinity include Neighborhood Village V52 and Light Rail Village VR22 both of which are located outside the 65 dBA and 60 dBA CNEL noise contours expected by 2022 (refer to Figure 3.3-4).



Source: City of San Jose, 2010.

MINETA SAN JOSÉ INTERNATIONAL AIRPORT
2027 AIRCRAFT NOISE CONTOURS

FIGURE 3.3-3



CNEL NOISE CONTOURS

- 60 dBA
- 65 dBA
- 70 dBA

0 1,000 2,000
Feet

N

Source: Reid-Hillview Airport Comprehensive Land Use Plan.

REID-HILLVIEW AIRPORT 2022 AIRCRAFT NOISE CONTOURS FIGURE 3.3-4

Proposed General Plan Policies That Reduce or Avoid Adverse Impacts from Airport-Related Noise

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce exposure of sensitive uses to airport-related noise levels. Proposed General Plan Policies that provide program-level mitigation for airport-related noise are identified below.

Community Noise Levels and Land Use Compatibility Policies	

Policy EC-1.1	Locate new development in areas where noise levels are appropriate for the proposed uses. Consider federal, state and City noise standards and guidelines as a part of new development review. Applicable standards and guidelines for land uses in San José include:
	
	<u>Interior Noise Levels</u>
	
	• The City's standard for interior noise levels in residences, hotels, motels, residential care facilities, and hospitals is 45 dBA DNL. Include appropriate site and building design, building construction and noise attenuation techniques in new development to meet this standard. For sites with exterior noise levels of 60 dBA DNL or more, an acoustical analysis following protocols in the City-adopted California Building Code is required to demonstrate that development projects can meet this standard. The acoustical analysis shall base required noise attenuation techniques on expected General Plan traffic volumes to ensure land use compatibility and General Plan consistency over the life of this plan.
	
	<u>Exterior Noise Levels</u>
	
	• The City's acceptable exterior noise level objective is 60 dBA DNL or less for residential and most institutional land uses (Table EC-1). The acceptable exterior noise level objective is established for the City, except in the environs of the San José International Airport, the Downtown Core Area, and along major roadways. For the remaining areas of the City, the following standards apply:
	
	  o For new multi-family residential projects and for the residential component of mixed-use development, use a standard of 60 dBA DNL in usable outdoor activity areas, excluding balconies and residential stoops and porches facing existing roadways. There will be common use areas available to all residents that meet the 60 dBA exterior standard. Use noise attenuation techniques such as shielding by buildings and structures for outdoor common use areas.
	
	  o For single-family residential uses, use a standard of 60 dBA DNL for exterior noise in private usable outdoor activity areas, such as backyards.

Policy EC-1.9	Noise studies are required for land use proposals where known or suspected loud intermittent noise sources occur which may impact adjacent existing or planned land uses. For new residential development affected by noise from heavy rail, light rail, BART or other single-event noise sources, mitigation will be implemented so that recurring maximum instantaneous noise levels do not exceed 50 dBA L_{max} in bedrooms and 55 dBA L_{max} in other rooms.
Policy EC-1.11	Continue to require safe and compatible land uses within the Mineta International Airport noise zone (defined by the 65 CNEL contour as set forth in State law) and encourage aircraft operating procedures that minimize noise.

Existing Regulations and Adopted Plans and Policies

Existing state regulations that would reduce or avoid possible impacts due to airport-related noise include:

- Title 21, California Code of Regulations, Section 5012
- 2007 California Building Code

Discussion of Airport-Related Noise Impacts

The proposed General Plan includes policies to implement the relevant requirements of federal and state agencies in addition to the City's noise standards. These specific standards establish noise reduction requirements that will be implemented, where applicable, for individual development projects.

Impact NV-4: Implementation of General Plan policies and compliance with local airport land use plans would effectively reduce program-level aircraft noise impacts to a less than significant level. **(Less Than Significant Impact)**

3.3.4.5 *Construction Noise*

The proposed *Envision San José 2040 General Plan* would allow for the construction of new buildings and infrastructure throughout the City. Residences and businesses located adjacent to or within proposed Growth Areas would be affected at times by construction noise. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), when construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction durations last over extended periods of time.

Major noise-generating construction activities associated with new projects would include removal of existing pavement and structures, site grading and excavation, installation of utilities, the construction of building foundations, cores, and shells, paving, and landscaping. The highest noise levels would be generated during the demolition of existing structures when impact tools are used (e.g., jackhammers, hoe rams) and during the construction of building foundations when impact pile driving is required to support the structure. Site grading and excavation activities would also generate high noise levels as these phases often require the simultaneous use of multiple pieces of heavy equipment such as dozers, excavators, scrapers, and loaders. Lower noise levels result from building construction activities when these activities move indoors and less heavy equipment is required to complete the tasks.

Construction equipment would typically include, but would not be limited to, earth-moving equipment and trucks, pile driving rigs, mobile cranes, compressors, pumps, generators, paving equipment, and pneumatic, hydraulic, and electric tools. The typical range of hourly average noise levels generated by different phases of construction measured at a distance of 50 feet from a busy construction site are shown in Table 3.3-8. Typical hourly average construction-generated noise levels are approximately 77 to 89 dBA L_{eq} measured at a distance of 50 feet from the site during busy construction periods. Large pieces of earth-moving equipment, such as graders, scrapers, and dozers,

generate maximum noise levels of 85 to 90 dBA L_{max} at a distance of 50 feet. During each stage of construction, there would be a different mix of equipment operating and noise levels would vary based on the amount of equipment on site and the location of the activity. Construction noise levels drop off at a rate of approximately six dBA per doubling of distance between the noise source and receptor. Intervening structures or terrain would result in lower noise levels at distant receivers.

Table 3.3-8
Typical Ranges of Noise Levels at 50 Feet from Construction Sites (dBA L_{eq})

Activity	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious, Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

Notes: I - All pertinent equipment present at site.
II - Minimum required equipment present at site.
Source: United States Environmental Protection Agency, 1973, Legal Compilation on Noise, Vol. 1, p. 2-104.

The City of San José does not establish quantitative noise limits for demolition or construction activities occurring in the City. According to San José Municipal Code, construction hours within 500 feet of a residential unit are limited to the hours of 7:00 a.m. to 7:00 p.m. on Monday through Friday, unless otherwise expressly allowed in a Development Permit or other planning approval.

Noise generated by small infill projects facilitated by the General Plan would likely have relatively short overall construction durations, with the noisiest phases of construction (e.g., demolition, foundations, project infrastructure, building core and shell) limited to a timeframe of one year or less. These phases of construction are not anticipated to generate noise levels exceeding the City's acceptable noise standard for sensitive uses (60 dBA L_{eq}) or the ambient noise environment by five dBA L_{eq} or more in the area over extended periods of time (beyond one construction season) due to the small size of these projects. Interior construction, landscaping, and finishing activities would not be expected to result in noise levels in excess of 60 dBA L_{eq} due to the location and type of work and equipment used. Large construction projects developed under the proposed *Envision San José 2040 General Plan* may result in a substantial temporary noise increase at adjacent noise-sensitive land uses. As a result, noise levels from these projects could exceed 60 dBA L_{eq} and the ambient noise environment by five dBA L_{eq} or more, and last over one year in duration.

Proposed General Plan Policies That Reduce or Avoid Adverse Impacts from Construction Noise

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce exposure of adjacent land uses to excessive construction noise levels. Proposed General Plan Policies that provide program-level mitigation for construction noise within the City are identified below.

Community Noise Levels and Land Use Compatibility Policies	
Policy EC-1.7	Construction operations within the City will be required to use best available noise suppression devices and techniques and continue to limit construction hours near residential uses per the City's Municipal Code. The City considers significant construction noise impacts to occur if a project located within 500 feet of residential uses or 200 feet of commercial or office uses would: • Involve substantial noise generating activities (such as building demolition, grading, excavation, pile driving, use of impact equipment, or building framing) continuing for more than 12 months. For such large or complex projects, a construction noise logistics plan that specifies hours of construction, noise and vibration minimization measures, posting or notification of construction schedules, and designation of a noise disturbance coordinator who would respond to neighborhood complaints will be required to be in place prior to the start of construction and implemented during construction to reduce noise impacts on neighboring residents and other uses.

Existing Regulations and Adopted Plans and Policies

Existing local regulations that would reduce or avoid possible impacts due to construction noise include:

- San José Municipal Code Zoning Ordinance Standards

Discussion of Construction Noise Impacts

Although numeric standards adopted for established land uses will be exceeded by construction of individual projects developed consistent with the General Plan, most construction noise is temporary and the City's Municipal Code limits construction noise to daylight hours from Monday to Friday unless explicitly allowed otherwise by a development permit. Therefore, construction projects undertaken consistent with the General Plan and Municipal Code would be required to reduce construction noise levels to the extent practicable and provide a method for complaint resolution as regulated through the land use development permit process.

Impact NV-5: The potential short-term construction noise impacts from development and redevelopment allowed by the *Envision San José 2040 General Plan* would be mitigated through the implementation of proposed General Plan policies and existing regulations that require reasonable noise reduction measures be incorporated into the construction plan and implemented during all phases of construction activity to minimize the exposure of neighboring properties. **(Less Than Significant Impact)**

3.3.4.6 *Vibration and Land Use Compatibility*

The *Envision San José 2040 General Plan* would locate sensitive land uses within portions of the plan area where known vibration sources exist, primarily along the existing active railroad corridors and the VTA light rail. Ground vibration from conventional railroad trains or light rail trains passing through the plan area could exceed the guidelines set forth by the FTA if new buildings housing sensitive uses such as residences within BART/Caltrain Villages (VT) or Light Rail Corridors and Villages (VR or CR) are constructed within approximately 100 feet of the tracks. Employment areas such as offices and R&D facilities can also be sensitive to ground-borne vibration. The specific locations of proposed buildings and their sensitivities to vibration levels are not known at this time; however, such uses located in these areas could be exposed to ground vibration levels exceeding FTA guidelines.

Proposed General Plan Policies That Reduce or Avoid Adverse Impacts from Ground-borne Vibration

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce exposure of sensitive uses to ground-borne vibration. Proposed General Plan Policies that provide program-level mitigation for exposure to ground-borne vibration sources within the city are identified below.

Vibration Policies	
Policy EC-2.1	Near light and heavy rail lines or other sources of ground-borne vibration, minimize vibration impacts on people, residences and businesses through the use of setbacks and/or structural design features that reduce vibration to levels at or below the guidelines of the Federal Transit Administration. Require new development within 100 feet of rail lines to demonstrate prior to project approval that vibration experienced by residents and vibration sensitive uses would not exceed these guidelines.
Policy EC-2.2	Require new sources of ground-borne vibration, such as transit along fixed rail systems or the operation of impulsive equipment, to minimize vibration impacts on existing sensitive land uses to levels at or below the guidelines of the Federal Transit Administration.

Impact NV-6: Implementation of the *Envision San José 2040 General Plan* may result in the placement of sensitive uses adjacent to sources of ground-borne vibration exceeding federal guidelines. New sources of ground-borne vibration may also be constructed adjacent to existing sensitive uses. Policies included in the proposed *Envision San José 2040 General Plan* would provide for adequate buffers and the minimization of vibration levels between sources of ground-borne vibration and sensitive uses that ensure program-level vibration impacts are reduced to a less than significant level. **(Less Than Significant Impact)**

3.3.4.7 *Construction Vibration*

Demolition and construction activities required for development allowed under the *Envision San José 2040 General Plan* may generate perceptible vibration levels when heavy equipment or impact tools

(e.g. jackhammers, pile drivers, hoe rams) are used in the vicinity of nearby sensitive land uses. Heavy tracked vehicles (e.g., bulldozers or excavators) can generate distinctly perceptible ground-borne vibration levels when this equipment operates within approximately 25 feet of sensitive land uses. Impact pile drivers can generate distinctly perceptible ground-borne vibration levels at distances up to approximately 100 feet, and may exceed building damage thresholds within 25 feet of any building, and within 50 to 100 feet of a historical building, or building in poor condition.

Proposed General Plan Policies That Reduce or Avoid Adverse Impacts from Construction Vibration

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce exposure of sensitive uses to ground-borne vibration during construction. Proposed General Plan Policies that provide program-level mitigation for exposure to ground-borne vibration sources during construction are identified below.

Vibration Policies	
Policy EC-2.3	Require new development to minimize vibration impacts to adjacent uses during demolition and construction. For sensitive historic structures, a vibration limit of 0.08 in/sec PPV (peak particle velocity) will be used to minimize the potential for cosmetic damage to a building. A vibration limit of 0.20 in/sec PPV will be used to minimize the potential for cosmetic damage at buildings of normal conventional construction.

Impact NV-7: Implementation of the *Envision San José 2040 General Plan* would result in construction vibration that may impact adjacent structures. Construction vibration impacts associated with demolition and construction activities would be mitigated to a less than significant level through the policies contained in the proposed *Envision San José 2040 General Plan*. **(Less Than Significant Impact)**

3.3.4.8 *Impacts of Rancho del Pueblo and iStar Residential Options*

As discussed in Section 2.2.8 in the Project Description, this PEIR also evaluates options for residential land use designations and anticipated future development on two properties; the Rancho del Pueblo Golf Course in the Alum Rock Planning Area and the iStar property in the Edenvale Planning Area (Residential Option Sites). Under these options one or both of these properties would be designated for residential uses instead of the currently designated industrial use for the iStar property and the currently designated park/open space use for the existing Rancho del Pueblo Golf Course. Because these options also include changes to other Growth Areas to balance the jobs and dwelling units, the overall amount of development capacity assumed under the Preferred Scenario would not change citywide.

A comparison and summary of public facilities and services impacts for the residential options is shown in Table 3.3-9. Implementation of an updated General Plan that includes one or both of the residential options for the Rancho del Pueblo and iStar sites would have impacts similar to those from the proposed project.

Table 3.3-9
Noise and Vibration Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
NV-1	Traffic Noise and Land Use Compatibility	The Rancho del Pueblo site is located between US 101 and King Road. Similar to other proposed residential locations in the Alum Rock Planning Area, noise levels on the site range from 60 to 70 dBA DNL. Development on the site would be subject to General Plan policies requiring the use of attenuation measures to reduce interior noise and exterior noise in outdoor activity areas to acceptable levels. The iStar site is located adjacent to SR 85, Monterey Road, the UPPRR tracks, and two industrial properties. The average noise levels on the site range from 62 dBA DNL adjacent to Manassas Road to 70 dBA DNL adjacent to SR 85. Future traffic volumes would result in noise levels on the site from 65 to 75 dBA DNL on the site. Similar to proposed residential development throughout the Edenvale Planning Area, development on the site would be subject to General Plan policies requiring the use of noise attenuation measures to reduce interior noise and exterior noise in outdoor activity areas to acceptable levels.	same (LTS)
NV-2	New Noise Generating Land Uses and Compatibility	The Rancho del Pueblo site is located in an area with a mix of residential uses. Other than roadway noise no other significant noise source is anticipated to result in noise impacts from operations. Development on the site would be subject to General Plan policies requiring the use of attenuation measures to reduce ambient noise to acceptable levels. Currently there are emergency backup generators at the Equinix facility that borders the eastern boundary of the iStar property. As described in the Airport West Stadium and Great Oaks Place Project Final EIR (2010), noise levels would be elevated at the property line during twice monthly testing of these generators. The proposed General	same (LTS)

Table 3.3-9
Noise and Vibration Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
		Plan includes policies that require residential development to include mitigation measures so that recurring maximum instantaneous noise levels are reduced to acceptable levels in building interiors (*e.g.*, Policy EC-1.9).	
NV-3	Traffic-Generated Noise Levels	Residential development on both sites would contribute to the significant noise level increases from traffic volumes under the proposed General Plan. Development of the Residential Option sites would neither substantially increase nor decrease identified roadway noise impacts from the proposed General Plan.	same (S)
NV-4	Airport Noise	Neither site is located within a 65 CNEL for the Mineta San José International or Reid-Hillview Airports. Development of residential uses on these sites would result in the same impacts as the proposed General Plan.	same (LTS)
NV-5	Construction Noise	Residential development on the Rancho del Pueblo site would result in temporary construction noise increases at residential properties adjacent to the site at the same levels described for other construction activities. Implementation of proposed General Plan policies would reduce the impact to less than significant. The iStar site is located approximately 300 feet from the nearest sensitive receptors located north of the site across Monterey Road. Construction noise is not expected to exceed the ambient noise environment at the closest residential uses due to the distance separating them and traffic noise from the adjacent roadway.	same (LTS)
NV-6	Vibration and Land Use Compatibility	Development of the Residential Option on the Rancho del Pueblo site would not expose sensitive receptors to any significant vibration source because of the proposed type of development and anticipated use of standard construction techniques.	same (LTS)

Table 3.3-9
Noise and Vibration Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
		Development of the Residential Option on the iStar site would be subject to groundborne vibration exceeding the FTA's "occasional event" criterion within 165 feet of the UPRR track. Implementation of General Plan Policy EC-2.1 will ensure development on the site is adequately set back to avoid impacts to sensitive receptors.	
NV-7	Construction Vibration	Construction of the Residential Option on either the Rancho del Pueblo or iStar sites is not anticipated to involve demolition or construction activity (*e.g.,* pile driving) adjacent to sensitive receptors that would result in perceptible vibration during the construction period because of the proposed type of development and anticipated use of standard construction techniques.	same (LTS)

[1] S= Significant; LTS = Less Than Significant
The determination of significance assumes implementation of proposed General Plan policies and actions and existing regulations and adopted plans and policies previously identified throughout Section 3.3.4 Noise and Vibration Impacts.
Bold = New Significant Impact

3.3.5 Mitigation and Avoidance Measures for Noise and Vibration Impacts

3.3.5.1 *Proposed General Plan*

Traffic-Generated Noise Levels

Implementation of Policy EC-1.4 would require the use of various noise attenuation measures when expanding roadway segments adjacent to sensitive uses. The methods discussed below provide various options for the implementation of this policy.

Case studies have shown that the replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along local roadways by two to three dBA DNL. A possible noise reduction of two dBA would be expected using conservative engineering assumptions, and future traffic noise increases could be mitigated to a less than significant level by repaving roadways with "quieter pavements." To provide permanent mitigation, subsequent repaving would also have to use "quieter" pavements.

In situations where private outdoor use areas are located adjacent to the roadway, new or larger noise barriers could be constructed to provide the additional necessary noise attenuation in private use areas. Typically, increasing the height of an existing barrier results in approximately one dBA of attenuation per one foot of additional barrier height. The design of such noise barriers would require additional analysis specific to local conditions. Traffic calming could also be implemented to reduce noise levels expected with the project. Each five mile per hour reduction in average speed provides approximately one dBA of noise reduction on an average basis (L_{eq}/DNL). Traffic calming measures that regulate speed improve the noise environment by smoothing out noise levels.

Residences could also be provided with sound insulation treatments if further study finds that interior noise levels within the affected residential units would exceed 45 dBA DNL as a result of the projected increase in traffic noise. Treatments to the homes may include the replacement of existing windows and doors with sound-rated windows and doors and the provision of a suitable form of forced-air mechanical ventilation to allow the occupants the option of controlling noise by closing the windows. The specific treatments for each affected residential unit would be identified on a case-by-case basis.

Each of the mitigation measures described above involves other non-acoustical considerations. Other engineering issues may dictate continued use of dense grade asphalt. Noise barriers and sound insulation treatments must be done on private property necessitating agreements with each property owner. The implementation of measures associated with this policy will not likely be able to reduce substantial noise increases to acceptable levels at all noise sensitive areas. This is a significant and unavoidable impact. **(Significant Unavoidable Impact)**

Construction Noise

Implementation of E*nvision* Policy EC-1.7 would require a noise logistics plan which would include, but not be limited to, the following measures to reduce construction noise levels as low as practical:

- Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists;

- Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;
- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;
- Locate staging areas and construction material areas as far away as possible from adjacent land uses;
- Prohibit all unnecessary idling of internal combustion engines;
- If impact pile driving is proposed, multiple-pile drivers shall be considered to expedite construction. Although noise levels generated by multiple pile drivers would be higher than the noise generated by a single pile driver, the total duration of pile driving activities would be reduced.
- If impact pile driving is proposed, temporary noise control blanket barriers shall shroud pile drivers or be erected in a manner to shield the adjacent land uses. Such noise control blanket barriers can be rented and quickly erected.
- If impact pile driving is proposed, foundation pile holes shall be pre-drilled to minimize the number of impacts required to seat the pile. Pre-drilling foundation pile holes is a standard construction noise control technique. Pre-drilling reduces the number of blows required to seat the pile. Notify all adjacent land uses of the construction schedule in writing;
- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. The telephone number for the disturbance coordinator at the construction site will be posted and included in the notice sent to neighbors regarding the construction schedule.

3.3.5.2 *Rancho del Pueblo and iStar Residential Options*

Program mitigation and avoidance measures would be the same as those described above for the proposed General Plan. **(Significant Unavoidable Impact)**

3.3.6 Significance Conclusions

3.3.6.1 *Proposed General Plan*

Implementation of the *Envision San José 2040 General Plan* in accordance with proposed policies and existing regulations would reduce land use compatibility and construction impacts to sensitive uses from increased development throughout the city and associated noise and vibration. The projected increase in traffic-generated noise levels from development and redevelopment allowed under the proposed General Plan would result in significant impacts to some noise sensitive receptors along roadways throughout the city where acceptable mitigation cannot be accommodated. **(Significant Unavoidable Impact)**

3.3.6.2 *Rancho del Pueblo and iStar Residential Options*

Implementation of the proposed *Envision San José 2040 General Plan* including the Rancho del Pueblo and iStar Residential Options in accordance with proposed policies and actions and existing regulations would result in less than significant noise and vibration impacts, except for traffic-generated noise. The amount of development proposed by the General Plan in combination with the Rancho del Pueblo and iStar Residential Options would result in significant impacts to some noise sensitive receptors along roadways throughout the city where acceptable mitigation cannot be accommodated. **(Significant Unavoidable Impact)**

3.4 AIR QUALITY

This section summarizes information on air quality within the City of San José and provides an evaluation of the effects the proposed *Envision San José 2040 General Plan* would have on air quality. This section is based in part on the following technical reports:

- *Air Quality Existing Conditions Report, San José, California*, Illingworth & Rodkin, Inc., June 12, 2009.
- *Rancho del Pueblo and iStar General Plan Amendment Sites, San José, CA: Air Quality Community Risk Impact Analysis,* Illingworth & Rodkin, Inc. April 6, 2011.

A copy of the existing conditions report and focused community risk impact analysis for the two residential option sites are included in the Technical Appendices to this Draft PEIR (Appendix D).

3.4.1 Existing Setting

Air quality is determined by the concentration of various pollutants in the atmosphere. Units of concentration are expressed in parts per million (ppm) or micrograms per kilograms ($\mu g/m^3$). The amount of a given pollutant in the atmosphere is determined by the amount of pollutants released within an area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, and the surrounding topography of the air basin. The major determinants of transport and dilution are wind, atmospheric stability, terrain and, for photochemical pollutants, sun light.

3.4.1.1 *Topography and Climate*

The South Bay has significant terrain features that affect air quality. The Santa Cruz Mountains and Diablo Range on either side of the South Bay restrict horizontal dilution, and this alignment of the terrain also channels winds from the north to south, carrying pollution from the northern San Francisco Bay Peninsula toward San José.

The proximity of San José to both the Pacific Ocean and San Francisco Bay has a moderating influence on the climate. Meteorological factors make air pollution potential in the Santa Clara Valley quite high. Northwest winds and northerly winds are most common in the project area, reflecting the orientation of the Bay and the San Francisco Peninsula. Winds from these directions carry pollutants released by autos and factories from upwind areas of the Peninsula toward San José particularly during the summer months. Winds are lightest on average in fall and winter. Prevailing winds during the summer and fall can transport and trap ozone precursors from the more urbanized portions of the Bay Area. Every year in fall and winter there are periods of several days when winds are very light and local pollutants can accumulate.

The combined effects of moderate ventilation, frequent inversions that restrict vertical dilution and terrain that restricts horizontal dilution give San José a relatively high atmospheric potential for pollution compared to other parts of the San Francisco Bay Air Basin and provide a high potential for transport of pollutants to the east and south.

3.4.1.2 *Specific Air Pollutants*

Criteria Pollutants

Both the U.S. Environmental Protection Agency and the California Air Resources Board (CARB) have established ambient air quality standards for six common pollutants (ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter and lead). These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents prepared by government agencies. As mandated by the Clean Air Act, the U.S. Environmental Protection Agency (EPA) periodically reviews the scientific bases (or criteria) for the various ambient air quality standards by assessing newly available scientific information on a given air pollutant. Under the review process, a criteria document is developed which is a compilation and evaluation of the latest available pertinent information on atmospheric science, air quality, exposure, health effects, and environmental effects.

The federal and state ambient standards are developed independently, and as a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent, particularly for ozone and particulate matter. These two criteria pollutants are known to at times exceed the state and federal standards in the Bay Area.

Health effects and typical sources for the major criteria pollutants of ground level ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and suspended particulate matter (PM_{10} and $PM_{2.5}$) are summarized in Table 3.4-1 and described below.

Table 3.4-1
Common Sources of Health Effects for Criteria Air Pollutants

Pollutants	Sources	Health Effects
Ozone	Atmospheric reaction of organic gases with nitrogen oxides in sunlight	Aggravation of respiratory and cardiovascular diseases; reduced lung function; increased cough and chest discomfort
Particulate Matter ($PM_{2.5}$ and PM_{210})	Stationary combustion of solid fuels; construction activities; industrial processes; atmospheric chemical reactions	Reduced lung function; aggravation of respiratory and cardiovascular diseases; increases in mortality rate; reduced lung function growth in children
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust; high temperature stationary combustion; atmospheric reactions	Aggravation of respiratory illness
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust; natural events, such as decomposition of organic matter	Aggravation of some heart diseases; reduced tolerance for exercise; impairment of mental function; birth defects; death at high levels of exposure
Sulfur Dioxide (SO_2)	Combination of sulfur-containing fossil fuels; smelting of sulfur bearing metal ore; industrial processes	Aggravation of respiratory diseases; reduced lung function
Lead (Pb)	Contaminated soil	Behavioral and hearing disabilities in children; nervous system impairment

Source: BAAQMD. *California Environmental Quality Act Air Quality Guidelines*. 2010. Appendix C.

Ozone, or smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between reactive organic gases (ROG) and NO_X in the presence of sunlight. Ozone formation is greatest on warm, windless, sunny days. The main sources of NO_X and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) the evaporation of solvents, paints, and fuels, and biogenic sources. Automobiles are the single largest source of ozone precursors in the San Francisco Bay Area Air Basin. Tailpipe emissions of ROG are highest during cold starts, hard acceleration, stop-and-go conditions, and slow speeds. They decline as speeds increase up to approximately 50 mph, then increase again at high speeds and high engine loads. ROG emissions associated with evaporation of unburned fuel depend on vehicle and ambient temperature cycles. Nitrogen oxide emissions exhibit a different curve; emissions decrease as the vehicle approaches 30 miles per hour and then begin to increase with increasing speeds. Ozone levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. Ozone can also damage plants and trees, and materials such as rubber and fabrics.

Particulate Matter refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. $PM_{2.5}$ includes a subgroup of finer particles that have an aerodynamic diameter of 2.5 micrometers or less. Some particulate matter, such as pollen, is naturally occurring. In the San Francisco Bay Area most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} is of concern because it bypasses the body's natural filtration system more easily than larger particles, and can lodge deep in the lungs. The U.S. Environmental Protection Agency (EPA) and the State of California revised their PM standards several years ago to apply only to these fine particles. $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health. Motor vehicles are currently responsible for approximately half of particulates in the San Francisco Bay Area. Wood burning in fireplaces and stoves is another large source of fine particulates.

Nitrogen Dioxide (NO_2) is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, nitrogen dioxide can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

Carbon Monoxide (CO) is an odorless, colorless gas. It is formed by the incomplete combustion of fuels. The single largest source of CO in the San Francisco Bay Area is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. New findings indicate that CO emissions per mile are lowest at approximately 45 miles per hour for the average light-duty motor vehicle and begin to increase again at higher speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.

Sulfur Dioxide (SO_2) is a colorless acid gas with a pungent odor. It has potential to damage materials and it can have health effects at high concentrations. It is produced by the combustion of sulfur-containing fuels, such as oil, coal and diesel. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

In Santa Clara County, ozone and particulate matter are the pollutants of greatest concern since measured air pollutant levels exceed these concentrations at times. Both State and Federal standards for these criteria pollutants are summarized in Table 3.4-2.

Toxic Air Contaminants (TAC)

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants (HAPs) under the Federal Clean Air Act (CAA) and Toxic Air Contaminants (TACs) under the California CAA. These contaminants tend to be localized and are found in relatively low concentrations. They can, however, result in adverse chronic health effects if exposure to low concentrations occurs for long periods. HAPs are the air contaminants identified by the U.S. EPA as known or suspected to cause cancer, serious illness, birth defects, or death. Many of these contaminants originate from human activities, such as fuel combustion and solvent use. Mobile source air toxics (MSATs) are a subset of the 188 identified HAPS. While vehicle miles traveled in the United States is expected to increase by 64 percent over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions (by 57 percent to 67 percent depending on the contaminant).[46]

Industrial facilities and mobile sources are significant sources of TACs. The electronics industry, including semiconductor manufacturing, has the potential to contaminate both air and water due to the highly toxic chlorinated solvents commonly used in semiconductor production processes. Sources of TACs go beyond industry. Various common urban facilities also produce TAC emissions, such as gasoline stations (benzene), hospitals (ethylene oxide), and dry cleaners (perchloroethylene). Automobile exhaust also contains TACs such as benzene and 1,3-butadiene. Most recently, diesel particulate matter was identified as a TAC by the ARB. Diesel PM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. BAAQMD research indicates that mobile-source emissions of diesel PM, benzene, and 1,3-butadiene represent a substantial portion of the ambient background risk from TACs in the San Francisco Bay Area Air Basin.

[46] US EPA. About Air Toxics. Accessed May 3, 2010. Available at: http://www.epa.gov/ttn/atw/allabout.html#effects

Table 3.4-2
California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards [a]	
			Primary [b,c]	Secondary [b,d]
Ozone (O_3)	8-hour	0.070 ppm (137 μg/m^3)	0.075 ppm (147 μg/m^3)	—
	1-hour	0.09 ppm (180 μg/m^3)	—[e]	Same as primary
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
Nitrogen Dioxide (NO_2)	Annual	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)	Same as primary
	1-hour	0.18 ppm (339 μg/m^3)	0.100 ppm[f] (189 μg/m^3)	—
Sulfur Dioxide (SO_2)	Annual	—	—[g]	—
	24-hour	0.04 ppm (105 μg/m^3)	—[g]	—
	3-hour	—	—	0.5 ppm (1300 μg/m^3)
	1-hour	0.25 ppm (655 μg/m^3)	0.075 ppm[g] (196 μg/m^3)	—
PM_{10}	Annual	20 μg/m^3	—	Same as primary
	24-hour	50 μg/m^3	150 μg/m^3	Same as primary
$PM_{2.5}$	Annual	12 μg/m^3	15 μg/m^3	
	24-hour	No Separate State Standard	35 μg/m^3	
Lead	Calendar quarter	—	1.5 μg/m^3	Same as primary
	30-day average	1.5 μg/m^3	—	—

Notes: ppm = parts per million; μg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter

(a) Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

(b) Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

(c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the EPA.

(d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

(e) The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005. A new 8-hour standard was established in May 2008.

(f) The form of the 1-hour NO_2 standard is the 3-year average of the 98th percentile of the daily maximum 1-hour average concentration.

(g) On June 2, 2010 the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of the 1-hour daily maximum. The EPA also revoked both the existing 24-hour and annual average SO_2 standards.

California has adopted a comprehensive diesel risk reduction program to reduce diesel particulate matter (DPM) emissions 85 percent by 2020. The U.S. EPA and CARB adopted low sulfur diesel fuel standards in 2006 that reduce diesel particulate matter substantially. Smoke from residential wood combustion can also be a source of TACs. Wood smoke also contains a significant amount of PM_{10} and $PM_{2.5}$. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. Examples of land uses that have the potential to generate considerable odors include, but are not limited to: wastewater treatment plants; landfills; confined animal facilities; composting stations; food manufacturing plants; refineries; and chemical plants.

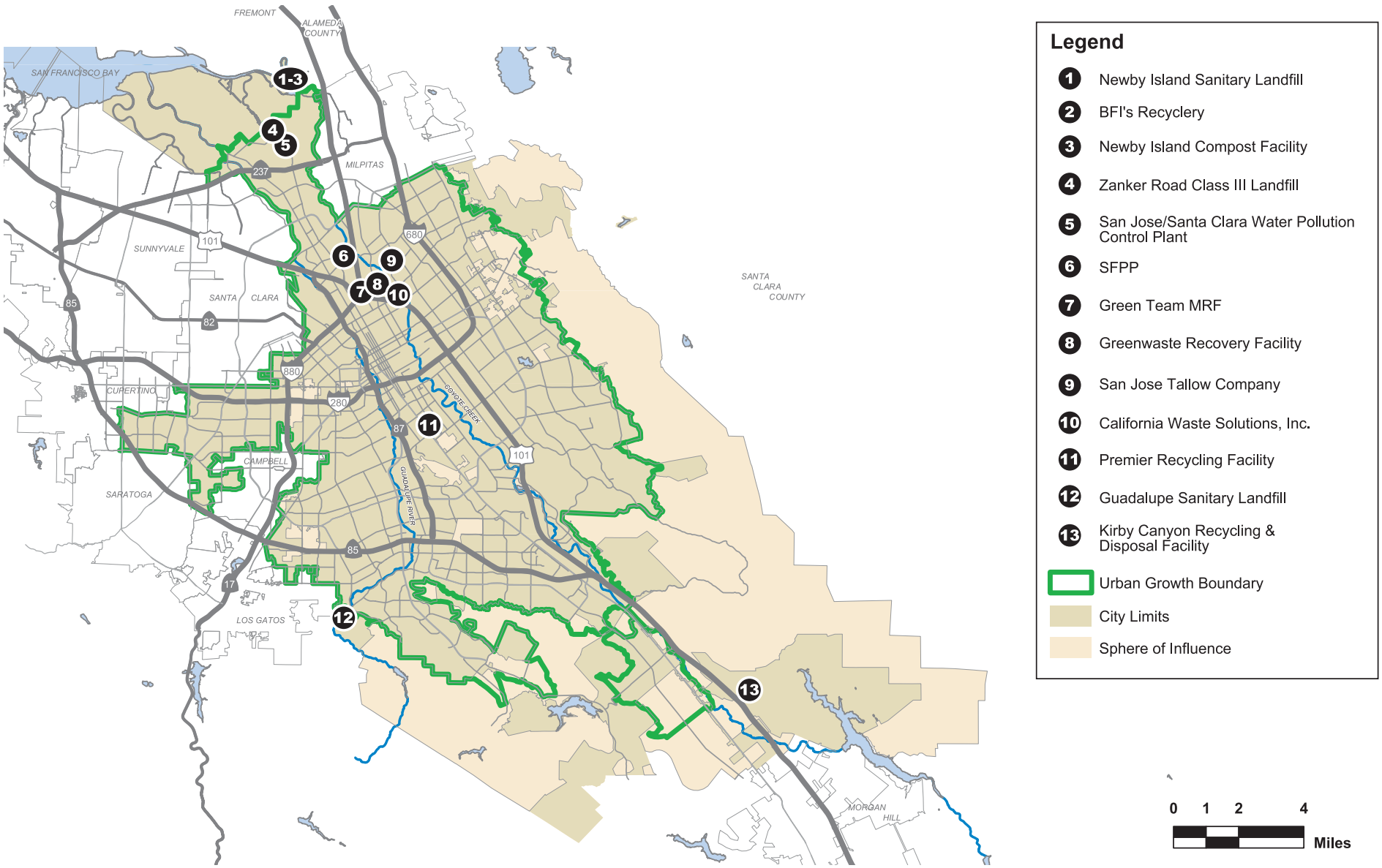
The San José-Santa Clara Water Pollution Control Plant is located in the Alviso Planning Area. Landfills in the city that handle municipal solid waste that can be a source of odors include Newby Island (Alviso Planning Area) and Kirby Canyon (San Felipe Planning Area). Other active landfills and/or facilities that have composting operations include Zanker Road Class III Landfill (Alviso Planning Area) and Guadalupe Mines Landfill (Almaden Planning Area). Other CalRecycle permitted facilities that are potential sources of odors include several solid waste transfer and processing facilities in the Berryessa and Alum Rock Planning Areas. A petroleum distribution and storage facility, SFPP (North San José Planning Area) is also a potential source of odors from fuel handling activities. Based upon odor complaints received by BAAQMD from 2007-2009, an animal rendering facility in the Alum Rock Planning Area also can be a source of substantial odor, especially during the summer and fall. These potential odor sources are listed in Table 3.4-3 and shown on Figure 3.4-1.

Several permitted recycling or materials handling facilities within the city are unlikely to be sources of odor and are not listed in Table 3.4-3. The Zanker Road Material Processing facility at 675 Los Esteros Road (Alviso Planning Area) and Valley Recycling at 1615 B South Seventh Street (Central/Downtown Planning Area) handle construction debris and inert materials with low odor potential. The Rogers Avenue Transfer Station at 1675 Rogers Avenue, although permitted, is currently closed.

Table 3.4-3
Potential Odor Sources

Number	Name	Address	Planning Area
1	Newby Island Sanitary Landfill	1601 Dixon Landing Road	Alviso
2	BFI's Recyclery	1601 Dixon Landing Road	Alviso
3	Newby Island Compost Facility	1601 Dixon Landing Road	Alviso
4	Zanker Road Class III Landfill	705 Los Esteros Road	Alviso
5	San José/Santa Clara Water Pollution Control Plant (WPCP)	700 Los Esteros Road	Alviso
6	SFPP	2150 Kruse Drive	North
7	Green Team MRF	575 Charles Street	Berryessa
8	Greenwaste Recovery Facility	625 Charles Street	Berryessa
9	San Jose Tallow Company	11740 Berryessa Road	Alum Rock
10	California Waste Solutions, Inc.	1005 Timothy Drive	Alum Rock
11	Premier Recycling Facility	260 Leo Avenue	South
12	Guadalupe Sanitary Landfill	15999 Guadalupe Mines Road	Almaden
13	Kirby Canyon Recycling & Disposal Facility	910 Coyote Creek Golf Drive	Coyote/ San Felipe

Sources: California Department of Resources Recycling and Recovery "CalRecycle Facilities Directory". Accessed August 9, 2010. http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx, Illingworth & Rodkin, Inc. *Air Quality Existing Conditions Report*, *San José, California.* June 12, 2009 (refer to Appendix D), and BAAQMD, Citywide Odor Complaint Data 2007-2009 (facilities with an average of five or more odor complaints per year during the three year period; refer to Appendix D).



POTENTIAL SOURCES OF ODORS

FIGURE 3.4-1

3.4.1.3 *Air Monitoring Data*

The Bay Area Air Quality Management District (BAAQMD) monitors air quality conditions at over 30 locations throughout the Bay Area. Air pollutant concentrations measured at BAAQMD's San José station are shown in Table 3.4-4.

Table 3.4-4
Highest Measured Air Pollutant Concentration
San José Air Quality Monitoring Station

Pollutant	Average Time	Measured Air Pollutant Levels				
		2005	2006	2007	2008	2009
Ozone (O_3)	1-hour	**0.113 ppm**	**0.118 ppm**	0.083 ppm	**0.118 ppm**	0.088 ppm
	8-hour	**0.080 ppm**	**0.087 ppm**	0.068 ppm	**0.080 ppm**	0.069 ppm
Carbon Monoxide (CO)	8-hour	3.1 ppm	2.9 ppm	2.7 ppm	2.5 ppm	3.4 ppm
Nitrogen Dioxide (NO_2)	1-hour	0.074 ppm	0.074 ppm	0.065 ppm	0.080 ppm	0.069 ppm
	Annual	0.019 ppm	0.018 ppm	0.017 ppm	0.017 ppm	0.015 ppm
Respirable PM_{10}	24-hour	**54 µg/m^3**	**73 µg/m^3**	**69 µg/m^3**	**57 µg/m^3**	43 µg/m^3
	Annual	**22.3 µg/m^3**	**21.0 µg/m^3**	**21.9 µg/m^3**	**23.4 µg/m^3**	**20.3 µg/m^3**
Fine $PM_{2.5}$	24-hour	54.6 µg/m^3	64.4 µg/m^3	57.5 µg/m^3	41.9 µg/m^3	35.0 µg/m^3
	Annual	11.8 µg/m^3	10.8 µg/m^3	11.0 µg/m^3	11.5 µg/m^3	10.1 µg/m^3

ppm = parts per million
µg/m^3= micrograms per cubic meter
Bold indicates values exceed ambient air quality standard.
Source: BAAQMD Air Quality Summaries for 2005, 2006, 2007, 2008, and 2009. Available at: <http://gate1.baaqmd.gov/aqmet/AQSiteYearly.aspx>

The pollutant of most concern in the San José area is ozone, since prevailing summertime wind conditions tend to cause a buildup of ozone in the Santa Clara Valley. Air quality standards for ozone are typically exceeded when relatively stagnant conditions occur for periods of several days during the warmer months of the year. Key components of ground level ozone formation are sunlight and heat. Significant ozone formation, therefore, only occurs during the months from late spring through early fall.

In the most recent three years (2007-2009), the San José station recorded two exceedances of the 75 ppb national 8-hour ozone standard, 14 exceedances of the national 24-hour $PM_{2.5}$ standard, and four exceedances of the California 24-hour PM_{10} standard. There were no exceedances of any NO_2, SO_2 or carbon monoxide standards measured during the most recent three years.[47] The entire Bay Area, including San José, did not experience any exceedances of other criteria air pollutants (CO, NO_2, Lead, SO_2). Table 3.4-5 reports the number of days that an ambient air quality standard was exceeded at any of the stations in San José near the project and in the entire Bay Area.

[47] BAAQMD. *2009 Air Monitoring Network Report*. July 1, 2010. Available at: <http://www.baaqmd.gov/~/media/Files/Technical%20Services/2009_Network_Plan.ashx>

Table 3.4-5
Annual Number of Days Exceeding Ambient Air Quality Standards

Pollutant	Standard	Monitoring Station	Days Exceeding Standard				
			2005	2006 [1]	2007	2008 [2]	2009
Ozone (O^3)	NAAQS 1-hour	San José	--	--	--	--	--
		Bay Area	--	--	--	--	--
	NAAQS 8-hour	San José	0	1	0	2	0
		Bay Area	1	12	1	12	8
	CAAQS 1-hour	San José	1	5	0	1	0
		Bay Area	9	18	4	9	11
	CAAQS 8-hour	San José	1	5	0	3	0
		Bay Area	9	18	4	20	13
Respirable PM_{10}	NAAQS 24-hour	San José	0	0	0	0	0
		Bay Area	0	0	0	0	0
	CAAQS 24-hour	San José	2	2	3	1	0
		Bay Area	6	15	4	5	1
Fine $PM_{2.5}$	NAAQS 24-hour	San José	--	6	9	5	0
		Bay Area	--	10	14	12	11
All other (CO, NO_2, Lead, SO_2)	All Other	San José	0	0	0	0	0
		Bay Area	0	0	0	0	0

Source: BAAQMD Air Quality Summaries for, 2005, 2006, 2007, 2008, and 2009
[1] On December 17, 2006, the U.S. EPA implemented a more stringent national 24-hour PM2.5 standard—revising it from 65 $\mu g/m^3$ to 35 $\mu g/m^3$. Starting in 2006, $PM_{2.5}$ exceedance days reflect the new standard.
[2] On May 17, 2008, the U.S. EPA implemented a more stringent national 8-hour ozone standard, revising it from 0.08 ppm to 0.075 ppm. Ozone exceedance days for 2008 reflect the new standard.

3.4.1.5 *Sensitive Receptors*

There are groups of people more affected by air pollution than others. CARB has identified children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases as people most likely to be affected by air pollution. These groups are classified as sensitive receptors. Locations that may contain a high concentration of sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks.

3.4.1.6 *Regulatory Framework*

As previously described, air pollutant emissions are regulated by various federal, state, and regional agencies. Relevant laws, regulations, and programs are summarized below.

Federal

Federal Clean Air Act

The Federal Clean Air Act (CAA) establishes pollutant thresholds for air quality in the United States. The U.S. EPA is responsible for establishing the National Ambient Air Quality Standards (NAAQS) which are required under the CAA. The U.S. EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency also established various emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by the California Air Resources Board (CARB).

As required by the Federal CAA, the NAAQS have been established for seven major air pollutants; carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur oxides, and lead (also see Table 3.4-2). The characteristics of these pollutants are described in Table 3.4-1.

Attainment Status-Federal Standards: Areas that do not violate ambient air quality standards are considered to be in attainment. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The Bay Area as a whole does not meet Federal ambient air quality standards for ground level ozone.

Under the Federal CAA, the U.S. EPA has classified the region as marginally non-attainment for the 1997 8-hour ozone standard. The U.S. EPA required the region to attain the standard by 2007. The U.S. EPA has determined that the Bay Area has met this standard, but a formal re-designation request and maintenance plan would have to be submitted before redesignation could occur. The Bay Area has met the CO standards for over a decade and is classified as in attainment by the U.S. EPA. The U.S. EPA grades the region unclassified (insufficient data to classify) for all other air pollutants, which includes PM_{10}.

State of California

California Clean Air Act (CAA)

The California Air Resources Board (CARB), which is part of the California EPA, is responsible for meeting the state requirements of the Federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA requires all air districts in the State to achieve and maintain CAAQS. CARB regulates mobile air pollution sources such as motor vehicles. CARB has established passenger vehicle fuel specifications and oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

Pursuant to the California CAA, the State of California has established ambient air quality standards. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for pollutants such as sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. Both State and Federal standards are summarized in Table 3.4-2. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for adverse air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare.

Attainment Status-State Standards: The Bay Area as a whole does not meet State ambient air quality standards for ground level ozone, PM_{10}, and $PM_{2.5}$. At the State level, the region is considered in serious non-attainment for ground level ozone and nonattainment for PM_{10}. The region is required to adopt plans on a triennial basis that show progress towards meeting the State ozone standard. The area is considered in attainment or unclassified for all other pollutants.

California Climate Adaption Strategy and Executive Order S-13-2008

Executive Order S-13-2008, signed by the governor on November 14, 2008, called for state agencies to develop a strategy for California to identify and prepare for expected climate change impacts. One

of the possible effects of climate change is increased temperatures and associated elevated levels of ozone.

The guiding principles of the subsequently prepared California Climate Adaptation Strategy (2009) include ensuring a coordinated effort in adapting to the unavoidable impacts of climate change, establishing strong partnerships between agencies, the private sector, and non-government agencies, and coordinating with the California Air Resources Board AB 32 Scoping Plan process. Recommendations in the Strategy include building resilience to increased temperature increases. Local health departments and other agencies are anticipated to use state developed guidance to mitigate effects on vulnerable populations and communities.

Regional

Bay Area Air Quality Management District (BAAQMD)

BAAQMD is the regional, government agency that regulates sources of air pollution within the nine San Francisco Bay Area Counties. BAAQMD is primarily responsible for assuring that the National and State ambient air quality standards are attained and maintained in the Bay Area. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. BAAQMD has jurisdiction over much of the nine Bay Area counties including Santa Clara County.

BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutant, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, and many other associated activities. Several key activities of BAAQMD are described below.

Regional Clean Air Plans: BAAQMD and other agencies prepare clean air plans as required under the State and Federal CAAs. Regional clean air plans include the Bay Area 2010 Clean Air Plan, and the PM_{10} and $PM_{2.5}$ Plans. The Bay Area 20210 Clean Air Plan (CAP) provides a comprehensive plan to improve Bay Area air quality and protect public health through implementation of a control strategy designed to reduce emissions and decrease ambient concentrations of harmful pollutants. The most recent CAP also includes measures designed to reduce GHG emissions.

San Francisco Bay Area's Air Toxics Program: The San Francisco Bay Area's Air Toxics Program integrates federal and state air toxics mandates with local goals that have been established by BAAQMD's Board of Directors. The Program consists of several elements that are designed to identify and reduce public exposure to toxic air contaminants (TACs).

BAAQMD CEQA Guidelines: The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. The Guidelines include information on legal requirements, BAAQMD rules, plans and procedures, methods of analyzing air quality impacts, thresholds of significance, mitigation measures, and background air quality information. In June 2010, the Air District's Board of Directors adopted CEQA thresholds of significance and an update of their CEQA Guidelines. The updated CEQA Guidelines review and describe assessment methodologies, and mitigation strategies for criteria pollutants, air toxics, odors, and greenhouse gas emissions. The most recent amendment

to the updated BAAQMD CEQA Air Quality Guidelines was in May 2011. It modified or clarified procedures for assessing impacts and updated the effective date for the risk and hazards threshold for new receptors (such as new residences).

BAAQMD CARE Program: The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. One of highlights of the CARE program is the development of the Mitigation Action Plan where risk reduction activities are focused on the most at-risk communities. Based on maps of toxic air emissions and sensitive populations, six priority communities have been identified that would benefit from immediate mitigation action. Much of Central San José, including portions of the North San José, Central, Berryessa, Alum Rock, South San José and Evergreen Planning Areas, fall within a priority community boundary (refer to Figure 3.4-2). These areas include a mosaic of residential, open space, public facilities, commercial and industrial uses as well as major roadways (I-880, I-280, I-680, SR 87) and San José International Airport.

City of San José

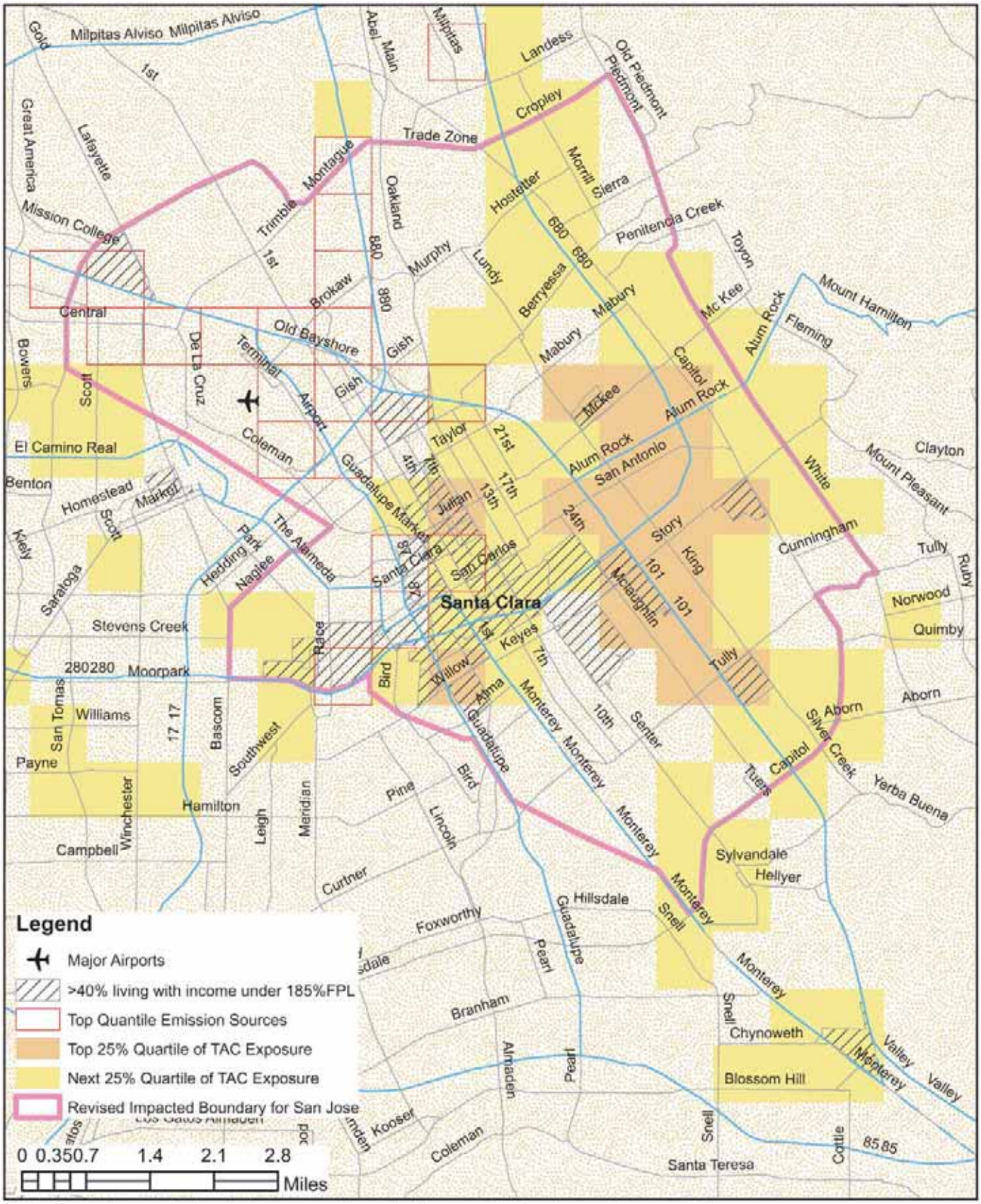
San José 2020 General Plan

Existing policies in the City of San José 2020 General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the city. Relevant General Plan Policies that directly address reducing and avoiding air quality impacts include the following:

- Air Quality Policies #1-6

The following Energy Conservation and Transportation policies and programs included in the General Plan would also help improve air quality:

- Energy Policies #1, 2, and 3
- Transportation, Pedestrian Facilities Policies #17, 19, and 23
- Transportation, Transportation Systems Management/Transportation Demand Management, Policy #28
- Transportation, Bicycling, Policies #51, 53
- Hazardous Waste Management Policy #5



Note: Sensitive population includes people under the age of 18 and over 64 years old.
Toxic air contaminants include diesel PM, 1,3-butadiene, formaldehyde, and acetaldehyde.

April 17, 2009

PRIORITY COMMUNITY BOUNDARY
FOR BAAQMD CARE PROGRAM

FIGURE 3.4-2

Municipal Code

The City's Municipal Code includes regulations associated with protection of the city's air quality. The City's ordinances include a wood burning ordinance, which includes provisions associated with wood burning appliances in residential and commercial installations, and prohibitions associated with appliance types and fuel (Chapter 9.11). Requirements for Transportation Demand Management Programs for employers with more than 100 employees are also outlined in the Municipal Code (Chapter 11.105). Geologic Hazards and Zoning chapters (Chapters 17 and 20) include general requirements for dust control.

City of San José Pollution Prevention Policy 4-5

The purpose of the San José City Council's Pollution Prevention Policy (Council Policy 4-5) is to protect water and air quality by minimizing the release of pollutants and the generation of hazardous wastes through the reduced use, recycling, and proper disposal of materials from City operations. It also calls for the City to seek, in its procurement processes, the elimination of the unnecessary use of hazardous substances and toxic chemicals.

3.4.2 Thresholds of Significance

For the purposes of this PEIR, an air quality impact is considered significant if the project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate an ambient air quality standard or contribute substantially to an existing or project air quality violation;
- Result in substantial emissions or deterioration of ambient air quality;
- Expose sensitive receptors or expose the general public to substantial levels of toxic air contaminants; or
- Create objectionable odors.

Based on BAAQMD CEQA guidelines, a plan is determined to be inconsistent with the most current Clean Air Plan (CAP), and therefore, to have a significant air quality impact, if the plan or plan change would:

- Not incorporate current Air Quality Plan (AQP) control measures as appropriate to the plan area;
- Cause the rate of increase in vehicle miles traveled (VMT) or vehicle trips (VT) to be greater than the rate of increase in population; or
- Not support the primary goals of the AQP.

The primary goals of the 2010 Bay Area CAP, the current AQP, are: 1) attain air quality standards; 2) reduce population exposure and protecting public health in the Bay Area; and 3) reduce greenhouse gas emissions and protect the climate.

BAAQMD in its CEQA guidelines (2010) also considers that for local plans to have a less than significant impact with respect to potential odors the location of existing and planned odor sources should be identified.

For toxic air contaminants (TACs) and $PM_{2.5}$, BAAQMD calls for showing special overlay zones of at least 500 feet (or an Air District-approved modeled distance) on each side of all freeways and high-volume roadways, and identification of goals, policies, and objectives to minimize potentially adverse impacts. In the case where environmental best practices and/or regulations are under development or significantly evolving, the City of San José typically addresses them through issue-specific policies or in the analysis of specific project proposals rather than as part of the General Plan or Land Use/Transportation Diagram. Current generalized modeling for freeways in San José prepared for BAAQMD shows possible impact zones of over 1,000 feet, although site specific modeling of some sites in the City within the last several years near Interstates 280 and 880 found estimated concentrations of TACs that could impact sensitive populations as occurring closer to freeway mainlines. It would be premature and inconsistent with the City's standard approach for establishing land use policies for the City to place overlay zones on the Land Use/ Transportation Diagram at this time given the information currently available from BAAQMD and others on modeled distances from each side of major roads, the scale of the Land Use/Transportation Diagram (e.g., the zones would be hard to read without a specified distance at various locations), and the number of high volume roadways (i.e., over 10,000 cars per day) that are not freeways or

expressways and likely have fewer sources of TACs (such as diesel-fueled trucks).[48] Policy or ordinance changes to implement such overlay zones can be considered in the future. The threshold used for toxic air contaminants, therefore, is the basic CEQA threshold of whether implementation of the proposed General Plan would expose sensitive receptors or expose the general public to substantial levels of toxic air contaminants.

In December 2010, the California Building Industry Association (BIA) filed a lawsuit in Alameda County Superior Court challenging toxic air contaminants and $PM_{2.5}$ project (not General Plan) thresholds adopted by BAAQMD in its CEQA Air Quality Guidelines. One of the identified concerns is inhibiting infill and smart growth in the urbanized Bay Area. The risk and hazards thresholds for new receptors are listed as going into effect on May 1, 2011 in the most recent BAAQMD CEQA Air Quality Guidelines (May 2011).

3.4.3 Air Quality Impacts

3.4.3.1 *Consistency with Clean Air Plan Projections*

A key element in air quality planning is to make reasonably accurate projections of future human activities that are related to air pollutant emissions.

Bay Area 2010 Clean Air Plan

The Bay Area 2010 Clean Air Plan (2010 CAP)[49] provides an updated comprehensive plan to improve Bay Area air quality and protect public health, taking into account future growth projections to 2035. The legal impetus for the Bay Area 2010 CAP is to update the most recent ozone plan (the Bay Area 2005 Ozone Strategy) and to comply with state air quality planning requirements as codified in the California Health and Safety Code. The 2010 CAP was adopted by BAAQMD's Board of Directors in September 2010. The population projections used in the 2010 CAP were based on ABAG 2007 Projections.

Table 3.4-6 compares the forecast for San José population BAAQMD used in preparing the 2010 CAP with the population accommodated by the *Envision San José 2040* General Plan.

Table 3.4-6
San José Population Forecast

Projection Source	Population Projection Year		
	2025	2030	2035
ABAG *Projections 2007*	1,272,600	1,348,900	1,422,800
Envision San José 2040 GP[1]	1,166,932	1,240,372	1,313,811[1]

[1]Assumes an average rate of population growth of approximately 14,688 persons per year between 2020 (1,093,492) and 2035 (1,313,811). Population estimates for 2035 are based on a total of 429,350 dwelling units and 3.06 persons per household.

[48] As described in *Section 3.4.3.3*, the City of San José is currently working with BAAQMD on development of a Community Risk Reduction Plan. It is anticipated that the Community Risk Reduction Plan will refine areas needing site specific modeling prior to new development with residential uses.
[49] Bay Area Air Quality Management District (BAAQMD). 2010. Draft Bay Area 2010 Clean Air Plan. March 2010.

The additional population accommodated under the proposed General Plan, which is not greater than that assumed by BAAQMD in 2010 CAP, could lead to increased emissions of ozone precursor pollutants and particulate matter ($PM_{2.5}$ and PM_{10}). ABAG's *Projections 2007* forecasts San José's population to be 1,422,800 residents in 2035. At build-out in 2035, San José's population envisioned under the proposed *Envision San José 2040 General Plan* could be as much as 7.7 percent lower (approximately 108,989 fewer residents) than assumed by BAAQMD in developing the draft 2010 CAP.

The planned General Plan capacity accommodates lower population growth than BAAQMD assumed in the 2010 CAP. This would not result in a significant impact because it would not lead to emissions based upon population alone that would be beyond what BAAQMD has assumed in its regional air quality plan.

VMT and VT Growth Compared to Population Growth

Traffic modeling for the proposed *Envision San José 2040 General Plan* shows that average daily VMT would increase by 74.8 percent (from 2008 to 2035) and the rate of population growth would increase by 33.3 percent while the service population would increase by 58.9 percent (for a further description of the VMT growth please refer to Appendix B, Transportation). The number of vehicle trips is also projected to increase by 50.7 percent (refer to Table 3.4-7).

Table 3.4-7
San José Population, VMT, and Vehicle Trips Projections

Factor	2008	2035	Percent Change from 2008
San José Population	985,307	1,313,811	33.3%
San José Service Population (residents + employees)	1,354,757	2,153,261	58.9%
Vehicle Miles Traveled (VMT)[1]	19,806,977	34,628,903	74.8%
Citywide Vehicle Trips	3,389,883	5,107,110	50.7%

[1]VMT includes VMT for internal trips within the City and 50% of VMT with one trip end outside the City.
Source: Fehr & Peers, Inc., Trip Frequency Distribution Summary, July 2010.

VMT is projected to increase more than population growth for a number of reasons. VMT is generated by both employees and residents. While population growth only takes into account growth of the City's resident population, the proposed General Plan provides capacity for a significant amount of job growth to improve the City's jobs/housing balance, and thereby supporting a proportionately greater growth in the City's employee population which can account for some of the increase in VMT that is greater than population growth alone. Several different land use Study Scenarios were tested as part of the *Envision* process in order to better understand the relationship between the jobs/housing balance and overall VMT. The results of this analysis, which are summarized in the Alternatives section of this PEIR, indicated that a scenario with a jobs/housing ratio of one-to-one would decrease the VMT per service population by approximately 2.5 percent, but still result in a level of increase significantly greater than the population growth (compared to Alternative Scenario 3, which has total population growth of 1,433,059 or 45.4 percent, growth in service population of 58.1 percent, a jobs/housing ratio of 1.0, and total VMT of 33,298,000 a 68.1 percent increase).

Because ultimately the planned population and employed residents would not provide an adequate labor force to satisfy the growth in jobs, workers would need to travel from residences in other cities and counties. Traffic modeling also predicts that a relatively low percentage of workers within a jurisdiction will choose to live within that jurisdiction. The imported workers would travel much longer distances than those workers who currently reside in the City. The City used a conservative technical approach for the transportation demand model runs used to estimate VMT. To maintain the ABAG Projections regional totals (i.e., controls) in the model analysis and to analyze a potential "worst case" outcome, workers that could not be accommodated by housing in San José were assumed to reside *outside* of Santa Clara County. Using this approach, imported workers would travel longer distances than if they were assumed to live in neighboring cities within Santa Clara County. Longer projected trip lengths contribute to the projected increase in VMT per capita. Additional traffic modeling performed to test the influence of this assumption found that it had a less than two percent impact upon the traffic model outcome for overall VMT.

In addition, there is planned job growth in the proposed General Plan in areas that are less accessible to transit, including Alviso, Evergreen, northern Coyote Valley and a portion of Edenvale. These areas currently lack the capacity and quality of transit available in other parts of the City and new residents and employees would primarily use automobile travel to and from work and other activities if new transit opportunities are not initiated prior to intensification of development. Placement of jobs in these locations is, however, necessary due to existing entitlements and in order to provide adequate employment land areas to support a variety of economic activities consistent with the General Plan objective to promote San José as a regional employment center. Alviso and Coyote Valley in particular are located further away from population growth areas, and so growth in those areas is expected to result in longer projected vehicle trips. Much of the planned employment capacity within Coyote Valley is connected to existing land use entitlements while, in contrast, the City is currently exploring land use options for a significant portion of the Alviso area through a separate Plant Master Plan process. In part to address this concern, the proposed project was revised through the *Envision* process to move planned employment growth from Alviso to other Growth Areas in proximity to light rail facilities. Traffic modeling however indicated that this move would marginally increase total VMT; an increase likely attributable to the necessary alteration of that employment growth from low intensity, light industrial uses to mid-rise, commercial/office uses in order to accommodate it within a more urban land use form.

Changes in population demographics likely have a significant impact upon the outcome of the traffic modeling analysis. For example, the employed resident ratio for households in 2007 was significantly lower than the forecast ratio for 2035. As a consequence, VMT would be expected to increase significantly from 2007 to 2035 even without any growth in housing supply or population. The mix of projected jobs also contributes to the increase in VMT. A substantial number of new jobs would be retail or commercial jobs, which generate more VMT per job than office jobs as retail jobs result in both employee and shopper trips.

For a complex combination of these reasons, the VMT per capita is projected to increase under the proposed General Plan. This would be considered a significant impact, as the rate of VMT growth is substantially greater than the rate of population growth over the planning horizon of the proposed *Envision San José 2040 General Plan* and increased growth could result in emissions beyond those anticipated in the region's Clean Air Plan.

Proposed General Plan Policies That Reduce or Avoid Possible Adverse Impacts to Regional Air Quality Associated with VMT

Goals and policies throughout the *Envision San José 2040 General Plan* encourage a reduction in vehicle miles traveled through land use, pedestrian, bicycle, and access to transit improvements, parking strategies that reduce automobile travel through parking supply and pricing management, and requirements for Transportation Demand Management programs for large employers.

The *Envision San José 2040 General Plan* also includes new implementation policies that seek to progressively reduce vehicle miles traveled during three implementation tiers identified in the plan. A goal of the City's Green Vision is to achieve a 40 percent reduction in the number of motor vehicle miles traveled compared to 2009. As recognized in the proposed General Plan, a multi-prong strategy that includes both land use and transportation is required to achieve this reduction. Transportation goals, policies and actions (Section 3.2) are intended to achieve an initial VMT reduction of 10% (Goal TR-9), followed by a 20% reduction (GoalTR-10), and ultimately a 40% reduction by 2040 (Goal TR-11). This last tier requires coordination and implementation from regional agencies as it is anticipated that congestion pricing strategies, toll lanes on freeways and expressways, and new public transportation, bicycle and pedestrian infrastructure beyond the City's sole control or funding ability would be required.

Measures to achieve a 40 percent reduction in VMT citywide in the long-term (such as congestion pricing strategies which would require motorists to pay a fee correlating to their VMT, and multi-modal infrastructure improvements) are not known at this time and will be developed on an adaptive basis as land use patterns and technological and economic advances unfold. While it is conceivable that VMT could be reduced by approximately 35 percent based on Transportation Demand Measures currently available for infill, densely developed sites near transit, VMT reductions in the single-family neighborhoods and employment areas not served by transit or that are spread out is not assured through implementation of the policies and actions in the proposed General Plan. For the purpose of this analysis, it is assumed that an overall 20 percent reduction in estimated VMT could be achieved by 2035 because of existing and future land use patterns and transportation infrastructure. This projected reduction is shown in Table 3.4-8.

Table 3.4-8
San José Population, VMT, and Vehicle Trips Projections with 20 percent Reduction Applied

Factor	2008	2035 with 20 percent reduction in VMT	Percent Change from 2008
San José Population	985,307	1,313,811	33.3%
Vehicle Miles Traveled (VMT)[1]	19,806,977	27,703,122	39.9%

[1]VMT includes VMT for internal trips within the City and 50% of VMT with one trip end outside the City.
Source of 2008 and 2035 estimated VMT: Fehr & Peers, Inc., Trip Frequency Distribution Summary, July 2010.

Adjusting the projected VMT to reflect implementation of policies designed to reduce motor vehicle travel substantially reduces the projected increase in VMT per capita. VMT per capita, however, is still projected to increase above current conditions due to job growth and the location of housing.

Impact AQ-1: The projected rates of both VMT and vehicle trip growth are greater than the rate of population growth. Therefore, the proposed *Envision San José 2040 General Plan* would not be consistent with the Bay Area 2010 CAP threshold of significance. **(Significant Impact)**

3.4.3.2 *Consistency with Air Quality Plan Control Measures*

Transportation and Mobile Source Control Measures

The Air District has a long history of implementing control measures to reduce ozone precursor emissions from stationary, area, mobile and transportation sources. The transportation control measures (TCMs) were designed to reduce emissions from motor vehicles by reducing vehicle trips and vehicle miles traveled. TCMs may also reduce vehicle use, vehicle idling or traffic congestion. Mobile source measures (MSMs) are measures that reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment. TCMs in particular address State ozone planning requirements for the Bay Area. Table 3.4-9 lists the proposed *Envision San José 2040 General Plan* policies that are supportive of the Bay Area 2010 Clean Air Plan TCMs and MSMs. A description of each applicable TCM and MSM is provided along with a listing of relevant proposed *Envision San José 2040 General Plan* policies (from Chapters 3 and 6 of the Draft Envision Plan) that would implement each measure.

Impact AQ-2: The policies under the proposed *Envision San José 2040 General Plan* support and reasonably implement the applicable *2010 Bay Area Clean Air Plan* Transportation Control Measures (TCMs) and Mobile Source Control Measures (MSMs). Therefore, the proposed *Envision San José 2040 General Plan* would be consistent with the TCMs. **(Less Than Significant Impact)**

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
TCM A-1 – Local and Area-wide Bus Service Improvements This measure will improve transit by sustaining and improving existing service, including new Express Bus or Bus Rapid Transit on major travel corridors, funding the replacement of older and dirtier buses, and implementing the Transit Priority Measures (TPMs) component of the Transportation Climate Action Campaign.	**Policy TR-1.8:** Actively coordinate with regional transportation, land use planning and transit agencies to develop a transportation network with complementary land uses that encourage travel by bicycling, walking and transit, and ensure that regional greenhouse gas emission standards are met. **Policy TR-3.1:** Pursue development of BRT, bus, shuttle, and fixed guideway (i.e., rail) services on designated streets and connections to major destinations. **Policy TR-3.2:** Ensure that roadways designated as Grand Boulevards adequately accommodate transit vehicle circulation and transit stops. Prioritize bus mobility along Stevens Creek Boulevard, The Alameda, and other heavily traveled transit corridors. **Policy TR-3.3:** As part of the development review process, require that new development along existing and planned transit facilities consist of land use and development types and intensities that contribute toward transit ridership. In addition, require that new

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
	development is designed to accommodate and to provide direct access to transit facilities. **Policy TR-3.4:** Maintain and improve access to transit stops and stations for mobility challenged population groups such as youth, the disabled, and seniors. **Action TR-3.5:** Work with the Valley Transportation Authority (VTA) and other public transit providers to increase transit frequency and service along major corridors and to major destinations like Downtown and North San José. **Action TR-3.6**: Collaborate with Caltrans and Santa Clara Valley Transportation Authority to prioritize transit mobility along the Grand Boulevards identified on the Growth Areas Diagram *(PEIR Figure 2.2-1)*. Improvements could include installing transit signal priority, queue jump lanes at congested intersections, and/or exclusive bus lanes. **Action TR-3.8**: Collaborate with transit providers to site transit stops at safe, efficient, and convenient locations, and to develop and provide transit stop amenities such as pedestrian pathways approaching stops, benches and shelters, nighttime lighting, traveler information systems, and bike storage to facilitate access to and from transit stops. **Action TR-3.9:** Ensure that all street improvements allow for easier and more efficient bus operations and improved passenger access and safety, while maintaining overall pedestrian and bicycle safety and convenience. **Policy TR-4.1**: Support the development of amenities and land use and development types and intensities that increase daily ridership on the VTA, BART, Caltrain, ACE and Amtrak California systems and provide positive benefits to the community. **Policy TR-12.2:** Enhance the safety and effectiveness of transit service, bicycle, and pedestrian travel as alternative modes using advanced Intelligent Transportation Systems (ITS) systems. **Action TR-12.6:** Work with VTA to implement transit vehicle priority that allows buses to travel on-schedule and provide reliable service. **Action TR-12.7:** Collaborate with VTA to provide real-time transit information at key transit stations and stops, as well as via mobile devices, to provide users with real-time information on bus travel routes and times.
TCM A-2 – Local and Regional Rail Service Improvements	**Policy TR-3.1: (see TCM A-1 above)** **Policy TR-4.1: (see TCM A-1 above)**

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
This measure will improve rail service by sustaining and expanding existing services and by providing funds to maintain railcars, stations, and other rail capital assets. Specific projects for implementation include BART extensions, Caltrain electrification, Transbay Transit Center Building and rail foundation, Capital Corridor intercity rail service, and Sonoma Marin Area Rail Transit (SMART) District commuter rail project.	**Policy TR-4.2**: Work collaboratively with the California High-Speed Rail Authority to bring high speed rail to San José in a timely manner. **Policy TR-4.3**: Support the development of amenities and land use and development types and intensities that contribute to increased ridership on the potential high-speed rail system, and also provide positive benefits to the community. **Policy TR-4.4:** Work cooperatively with the California High-Speed Rail Authority to ensure that rail corridors within the city are planned and constructed in a manner that enhances the character of the surrounding communities. **Action TR-4.5**: As appropriate, continue to regularly coordinate with rail operators in San Jose on the following matters: • Maintenance of rail lines, landscaping, and easements • Vehicle and pedestrian safety near at-grade rail crossings • Rail electrification to increase the frequency of train service and reduce environmental impacts • Grade separations (either above-ground or underground) to improve street connectivity and pedestrian and bicycle mobility at ground level • The establishment of timed transfers with other transit providers in the area. • Analysis and mitigation of the potential negative impacts resulting from increased train service, corridor expansion, and the eventual upgrading of a rail line.
TCM B-1 – Freeway and Arterial Operations Strategies This measure will improve the performance and efficiency of freeway and arterial systems through operational improvements.	**Policy TR-5.2:** Implement Intelligent Transportation Systems (ITS) strategies to maximize the efficiency of the existing transportation systems through advanced technologies, such as adaptive signal controls, real-time transit information, and real-time parking availability. **Policy TR-12.1:** Develop a citywide ITS system that sustainably manages and integrates all modes of travel including bicycles, automobiles, trucks, transit, and emergency vehicles. **Action TR-12.3:** Enhance the City's existing Transportation Management Center (TMC) and communications system, which is designed to serve all modes of travel and continue development and implementation of a fiber optic network to support communications with field equipment including but not limited to: traffic signals, closed circuit television (CCTV) cameras, changeable message signs (CMS), and communication hubs. **Action TR-12.5:** Develop a system to provide real-time travel information along all arterial streets. This will enable all users to make informed travel decisions, enhance safety, increase use of non-auto travel modes, minimize emergency response times and reduce greenhouse gas emissions.

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
TCM B-2 – Transit Efficiency and Use Strategies This measure will improve transit efficiency and make transit more convenient for riders	**Policy TR-3.1: (see TCM A-1 above)**
TCM B-4 – Goods Movement Improvements and Emissions Reduction Strategies. This measure will improve goods movement and reduce emissions from diesel equipment through implementation of the Bay Area's Trade Corridors Improvement Fund (TCIF) projects and various funding programs to replace or retrofit diesel equipment.	**Policy TR-6.2:** Maintain Primary Freight Routes that provide for direct access for goods movement to industrial and employment areas. **Policy TR-6.3:** Encourage through truck traffic to use freeways, highways, and County Expressways and encourage trucks having an origin or destination in San José to use primary truck routes designated in this General Plan**.** **Policy TR-6.4:** Plan industrial and commercial development so that truck access through residential areas is avoided. Minimize truck travel on streets designated in this General Plan as Residential Streets. **Policy TR-6.6:** Support the efficient and safe movement of goods by rail where appropriate and promote the continued operation of freight rail lines that serve industrial properties.
TCM C-1 – Voluntary Employer Based Trip Reduction Programs This measure will support voluntary efforts by Bay Area employers to encourage their employees to use alternative commute modes, such as transit, ridesharing, bicycling, walking, telecommuting, etc.	**Policy TR-1.1**: Accommodate and encourage use of non-automobile transportation modes to achieve San Jose's mobility goals and reduce vehicle trip generation and vehicle miles traveled (VMT). **Policy TR-7.1**: Require large employers to develop TDM programs to reduce the vehicle trips generated by their employees. **Action TR-7.2**: Update and enhance the existing TDM program for City of San Jose employees. This program may include the expansion of transit pass subsidies, free shuttle service, preferential carpool parking, ridesharing, flexible work schedules, parking pricing, car-sharing, and other measures. **Action TR-7.3:** Work together with large employers to develop a system for tracking Transportation Demand Management (TDM) programs implemented by employers to allow ongoing assessment of results. **Policy TR-8.6:** Allow reduced parking requirements for mixed-use developments and for developments providing shared parking or a comprehensive TDM program, or developments located near major transit hubs or within Urban Villages and Corridors. **Policy TR-9.2:** Serve as a model for VMT reduction by implementing programs and policies that reduce VMT for City of San Jose employees.

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
	Action TR-10.5: Work with employers in Tier II to monitor employer achievement of TDM program measures and explore incentives for successes and/or consider penalties for non-compliance.
TCM C-2 – Safe Routes to Schools and Safe Routes to Transit Programs This measure will encourage walking, bicycle and transit use by facilitating safe routes to schools and transit by providing funds and working with transportation agencies, local governments, schools, and communities to implement safe access for pedestrians and cyclists.	**Policy TR-2.20:** Continue to participate in and support the recommendations of the Safe Routes to School program. As part of the on-going Safe Routes to School program, work with School Districts to increase the proportion of students who walk or bike to school by improving the safety of routes to school, by educating students and parents about the health and environmental benefits of walking and bicycling and by creating incentives to encourage students to walk and bike. **Policy TR-2.1:** Coordinate the planning, and implementation of citywide bicycle and pedestrian facilities and supporting infrastructure. Give priority to bicycle and pedestrian safety and access improvements at street crossings (including proposed grade separated crossings of freeways and other high vehicle volume roadways) and near areas with higher pedestrian concentrations (schools, transit, shopping, hospital, and mixed-use areas).
TCM C-3 – Ridesharing Services and Incentives This measure will reduce emissions by reducing single occupancy vehicle trips through the promotion of rideshare services and incentives throughout the Bay Area, and car-sharing programs where feasible.	**Policy TR-7.1**: **(see TCM A-1 above).** **Action TR-7.2**: **(see TCM A-1 above).** **Action TR-7.3**: **(see TCM A-1 above).** **Policy TR-8.5:** Promote participation in car share programs to minimize the need for parking spaces in new and existing development. **Action TR-10.3:** Encourage participation in car share programs for new development in identified growth areas.
TCM D-1 – Bicycle Access and Facilities Improvements This measure will expand bicycle facilities serving employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers. Typical improvements include bike lanes, routes, paths, and bicycle parking facilities. This TCM also includes improving bicycle access to transit and supporting the annual Bike to Work event.	**Policy TR-1.8: (see TCM A-1 above).** **Action TR-1.12:** Update the City's engineering standards for public and private streets based on the new street typologies that incorporate the concept of "complete streets". **Action TR-1.13:** Reduce vehicle capacity on streets with projected excess capacity by reducing either the number of travel lanes or the roadway width, and use remaining public right-of-way to provide wider sidewalks, bicycle lanes, transit amenities and/or landscaping. Establish criteria to identify roadways for capacity reduction (i.e., road diets) and conduct engineering studies and environmental review to determine implementation feasibility and develop implementation strategies. **Policy TR-2.1:** Coordinate the planning, and implementation of citywide bicycle and pedestrian facilities and supporting

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
	infrastructure. Give priority to bicycle and pedestrian safety and access improvements at street crossings (including proposed grade-separated crossings of freeways and other high vehicle volume roadways) and near areas with higher pedestrian concentrations (school, transit, shopping, hospital, and mixed-use areas). **Policy TR-2.2:** Provide a continuous pedestrian and bicycle system to enhance connectivity throughout the City by completing missing segments. Eliminate or minimize physical obstacles and barriers on City streets that impede pedestrian and bicycle movement, including consideration of grade-separated crossings at railroad tracks and freeways**.** Provide safe bicycle and pedestrian connections to all facilities regularly accessed by the public, including the Mineta San Jose International Airport. **Policy TR-2.4:** Encourage walking and bicycling and increase pedestrian and bicycle safety through education programs. **Policy TR-2.5:** Integrate the financing, design and construction of pedestrian and bicycle facilities with street projects. Build pedestrian and bicycle improvements at the same time as improvements for vehicular circulation. **Policy TR-2.6:** Require that all new traffic signal installations, existing traffic signal modifications, and projects included in San Jose's Capital Improvement Plan include installation of bicycle detection devices where appropriate and feasible. **Policy TR-2.8:** Require new development to provide on-site facilities such as bicycle storage and showers, provide connections to existing and planned facilities, dedicate land to expand existing facilities or provide new facilities such as sidewalks and/or bicycle lanes/paths, or share in the cost of improvements. **Policy TR-2.9:** Coordinate and collaborate with the Santa Clara Valley Transportation Authority, Peninsula Corridor Joint Powers Board, Amtrak, ACE, and local shuttle operators to permit bicyclists to transport bicycles and provide appropriate amenities on-board all commuter trains, buses, and shuttles. Coordinate with local transit operators to provide secure bicycle parking facilities at all park-and-ride lots, train stations, and major bus stops. **Policy TR-2.11:** Prohibit the development of new cul-de-sacs or gated communities that do not provide through and publicly accessible bicycle and pedestrian connections and pursue the development of new through bicycle and pedestrian connections in existing cul-de-sacs where feasible. **Action TR-2.13:** Implement and regularly update, as needed, the San Jose Bicycle Master Plan. Include top priority bicycle projects in the annual Capital Improvement Program update. Continue to identify barriers to safe and convenient bicycle access and then

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
	identify how and when these barriers will be removed as part of Master Plan updates. **Action TR-2.16:** Pursue funding for the purchase of portions of railroad and utility rights-of-way for the development of exclusive or shared bicycle and pedestrian facilities. **Action TR-2.20:** Continue to participate in and support the recommendations of the Safe Routes to School program. As part of the on-going Safe Routes to School program, work with School Districts to increase the proportion of students who walk or bike to school by improving the safety of routes to school, by educating students and parents about the health and environmental benefits of walking and bicycling and by creating incentives to encourage students to walk and bike. **Policy TR-5.5:** Require that new development, which includes new public or private streets, connect these streets with the existing public street network and prohibit the gating of private streets intended to restrict public access. Furthermore require that the street network within a given project consists of integrated short blocks to facilitate bicycle and pedestrian travel and access. **Policy TR-12.2: (see TCM A-1 above).** **Action TR-12.8:** Implement technology on select roadways (primary bikeways) to support bicycling as the preferred mode of transportation, such as advanced detection, signal priority timing, and public information kiosks. **Policy TR-9.1:** Enhance, expand and maintain facilities for walking and bicycling, particularly to connect with and ensure access to transit and to provide a safe and complete alternative transportation network that facilitates non-automotive trips. **Policy LU-5.4:** Require new commercial development to facilitate pedestrian and bicycle access through techniques such as minimizing building separation from public sidewalks; providing safe, accessible, convenient, and pleasant pedestrian connections; and including secure and convenient bike storage.
TCM D-2 – Pedestrian Access and Facilities Improvements This measure will improve pedestrian facilities and encourage walking by funding projects that improve pedestrian access to transit, employment and major activity centers. Improvements may include sidewalks/paths, benches, reduced street width, reduced intersection turning radii, crosswalks with activated	**Policy TR-1.8: (See TCM A-1 above)**. **Action TR-1.12: (See TCM D-1 above)** **Policy TR-2.1: (See TCM D-1 above)** **Policy TR-2.3:** Ensure that crosswalks and sidewalks shall be universally accessible and designed for use by people of all abilities. **Policy TR-2.4: (See TCM D-1 above)**

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
signals, curb extensions/bulbs, buffers between sidewalks and traffic lanes, and street trees.	**Policy TR-2.5: (See TCM D-1 above)** **Policy TR-2.7:** Give priority to pedestrian improvement projects that: improve pedestrian safety; improve pedestrian access to and within the Urban Villages and other growth areas; and that improve access to parks, schools, and transit facilities. **Policy TR-2.11: (See TDM D-1 above)** **Action TR-2.14:** Conduct a citywide survey to identify pedestrian barriers on key pedestrian routes or access points and then identify how and when these barriers will be removed. Include top priority pedestrian projects in the annual CIP update. To conduct such a survey consider partnering with SJSU or the community to build relationships with SJSU and/or the community and to facilitate the completion of the survey with limited City resources, and to reduce the cost of staff time required for such a survey. **Action TR-2.15: (See TDM D-1 above)** **Action TR-2.19: (See TDM D-1 above)** **Action TR-2.21:** Identify locations where traffic signal phases can be modified or added or where alternative intersection control can be utilized to enhance efficiency and safety for pedestrian service. **Policy TR-5.5: (See TDM D-1 above)** **Policy TR-9.2: (see TDM A-1 above)** **Action TR-12.9:** Implement technology to aid pedestrians walking across intersections. Consider devices such as countdown timers and accessible pedestrian signal, which include audible and vibrating push buttons for disabled users. **Policy TR-9.1: (See TDM D-1 above)** **Policy LU-3.4: (See TDM D-1 above)** **Policy TN-2.7:** Encourage all developers to install and maintain trails when new development occurs adjacent to a designated trail location, in accordance with Policy PR-8.5. **Policy TN-2.8:** Coordinate and connect the trail system with the on-street bikeway system, and consider policies from the Circulation and the Parks, Trails, Open Space, and Recreation Amenities/Programs sections of this Plan to create a complete BikeWeb to serve the needs of San José's diverse community.
TCM D-3 – Local Land Use Strategies	**Policy TR-8.1**: Promote transit-oriented development with reduced parking requirements and promote amenities around appropriate

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
This measure will support and promote land use patterns, policies, and infrastructure investments that support higher density mixed-use, residential and employment development near transit in order to facilitate walking, bicycling and transit use.	transit hubs and stations to facilitate the use of available transit services. **Policy TR-8.3**: Support using parking supply limitations and pricing as strategies to encourage use of non-automobile modes. **Policy TR-8.4: (see TCM C-1 above).** **Action TR-10.1:** Explore development of a program for implementation as part of Tier II, to require that parking spaces within new development in areas adjacent to transit and in all mixed-use projects be unbundled from rent or sale of the dwelling unit or building square footage. **Action TR-10.3:** Encourage participation in car share programs for new development in identified growth areas. **Policy MS-10.5:** In order to reduce vehicle miles traveled and traffic congestion, new development within 2,000 feet of an existing or planned transit station will be required to encourage the use of public transit and minimize the dependence on the automobile through the application of site design guidelines and transit incentives. **Policy LU-1.6:** Locate employee-intensive commercial uses and industrial uses within walking distance of transit stops. Encourage public transit providers to provide or increase services to areas with high concentrations of residents, workers, or visitors. **Policy LU-5.5:** Provide pedestrian and vehicular connections between adjacent commercial properties with reciprocal-access easements to encourage safe, convenient, and direct pedestrian access and "one-stop" shopping. Encourage and facilitate shared parking arrangements through parking easements and cross-access between commercial properties to minimize parking areas and curb-cuts.
TCM E-2 – Promote Parking Policies to Reduce Motor Vehicle Travel. This measure will reduce emission of the key ozone precursors, ROG and NOx by implementing parking policies that support infill and transit-oriented development, and reduce vehicle miles traveled, and vehicle emissions through increased transit use, walking and bicycling.	**Action TR-8.10:** Update existing parking standards to reduce parking requirements for transit-oriented developments, mixed-use projects, and projects within the Urban Villages and Corridors to take advantage of shared parking opportunities generated by mixed-use development. Update existing parking standards to address TDM Actions and to require amenities and programs that support reduced parking requirements. **Action TR-8.12:** As part of the entitlement process, consider opportunities to reduce the number of parking spaces through shared parking, TDM actions, parking pricing or other measures which can reduce parking demand. Consider the use of reserve landscaped open space or recreational areas that can be used on a short-term basis to provide parking or converted to formal parking in the future if necessary.

Table 3.4-9
Transportation Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies and Actions
	Action TR-10.1: Explore development of a program for implementation as part of Tier II, to require that parking spaces within new development in areas adjacent to transit and in all mixed-use projects, be unbundled from rent or sale of the dwelling unit or building square footage. **Action TR-10.2:** In Tier II, reduce the minimum parking requirements citywide. **Action TR-10.6:** Working with members of the development and financial communities, and neighborhood residents, establish, in Tier II, citywide parking standards in the Zoning Code which establish maximum parking rates, or "parking caps" for new development.
MSM A-1– Promote Clean, Fuel-Efficient Light and Medium-Duty Vehicles This measure will reduce emissions of ozone precursors (ROG and NO_x) and CO_2, a key greenhouse gas by expanding the use of Super Ultra-low Emission and Partial-Zero emission light-duty passenger vehicles and trucks within the Bay Area.	**Policy MS-10.12:** Increase the City's alternative fuel vehicle fleet with the co-benefit of reducing local air emissions. Implement the City's Environmentally Preferable Procurement Policy (Council Policy 4-6) and Pollution Prevention Policy (Council Policy 4-5) in a manner that reduces air emissions from municipal operations. Support policies that reduce vehicle use by City employees.
MSM A-2 – Zero Emission Vehicles (ZEV) and Plug-In Hybrids (PHEV) This measure will reduce ozone precursors and greenhouse gases by expanding the use of ZEV and PHEV passenger vehicles and light-duty trucks within the Bay Area, working in partnership with the Bay Area Electric Vehicle Corridor coalition.	**Policy TR-1.16:** Develop a strategy to construct a network of public and private alternative fuel vehicle charging /fueling stations city wide. **Policy TR-7.2:** Update and enhance the existing TDM program for City of San José employees. This program may include the expansion of transit pass subsidies, free shuttle service, preferential carpool parking, ridesharing, flexible work schedules, parking pricing, car-sharing, and other measures.
MSM C-1 – Construction and Farming Equipment Reduce emissions from construction and farming equipment by 1) cash incentives to retrofit construction and farm equipment with diesel particulate matter filters or upgrade to a Tier III or IV off-road engine; 2) work with CARB, CEC and others to develop more fuel efficient off-road engines and drive-trains; 3) work with local communities, contractors and developers to encourage the use of renewable alternative fuels in applicable equipment.	**Policy MS-12.12: (see MSM A-1 above)**

Land Use and Local Impact Measures

Land Use and Local Impacts Measures (LUMs) are a new category of measures designed to:
1) Promote mixed-use, compact development to reduce motor vehicle travel and emissions, and
2) Ensure that planned growth is focused in a way that protects people from exposure to air pollution from stationary and mobile sources of emissions (also see Section 3.4.3.3 for a discussion of impacts to sensitive receptors). Table 3.4-10 lists the proposed *Envision San José 2040 General Plan* policies that are supportive of the Bay Area 2010 Clean Air Plan LUMs. A description of each applicable LUM is provided along with a listing of relevant proposed *Envision San José 2040 General Plan* policies (Chapters 3 and 6) that would implement each measure.

Impact AQ-3: The policies under the proposed *Envision San José 2040 General Plan* support and reasonably implement the applicable *2010 Bay Area Clean Air Plan* Land Use and Local Impact Control Measures (LUMs). Therefore, the proposed *Envision San José 2040 General Plan* would be consistent with the LUMs. **(Less Than Significant Impact)**

Table 3.4-10
Land Use and Local Impact Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Land Use and Local Impact Control Measures	Relevant General Plan Policies and Actions
LUM 1 Goods Movement This measure aims to reduce diesel PM and GHG emissions from goods movement in the Bay Area through targeted enforcement of CARB diesel ATCMs in impacted communities, partnerships with ports and other stakeholders, increased signage indicating truck routes and anti-idling rules, shifts in freight transport mode, shore-side power for ships, and improvement in the efficiency of engine drive trains, distributions systems (roadways, logistic systems) and land use patterns.	**Policy TR-6.2:** Maintain Primary Freight Routes that provide for direct access for goods movement to industrial and employment areas. **Policy TR-6.3:** Encourage through truck traffic to use freeways, highways, and County Expressways and encourage trucks having an origin or destination in San José to use primary truck routes designated in this General Plan. **Policy TR-6.4:** Plan industrial and commercial development so that truck access through residential areas is avoided. Minimize truck travel on streets designated in this General Plan as Residential Streets. **Policy TR-6.6:** Support the efficient and safe movement of goods by rail where appropriate and promote the continued operation of freight rail lines that serve industrial properties.
LUM 3 Updated CEQA Guidelines and Enhanced CEQA Review **LUM 4 Land Use Guidelines** **LUM 5 Reduce and Track Health Risk in Impacted Communities** These measures call for BAAQMD to provide guidance to local governments regarding air quality, greenhouse gases, and health risks from emissions sources	**Policy MS-11.1:** Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety. **Policy MS-11.2:** For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks

Table 3.4-10
Land Use and Local Impact Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Land Use and Local Impact Control Measures	Relevant General Plan Policies and Actions
in impacted communities as identified by BAAQMD's CARE Program.	to a less than significant level. Alternatively, require new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive receptors. **Policy MS-11.3:** Truck circulation routes will be reviewed for projects generating significant heavy duty truck traffic to designate truck routes that minimize exposure of sensitive receptors to TACs and particulate matter. **Policy MS-11.4:** Encourage the installation of appropriate air filtration, to be installed at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources. **Policy MS-11.5:** Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses. **Action MS-11.6:** Develop and adopt a comprehensive Community Risk Reduction Plan that includes: baseline inventory of toxic air contaminants (TACs) and particulate matter smaller than 2.5 microns ($PM_{2.5}$) emissions from all sources, emissions reduction targets, and enforceable emission reduction strategies and performance measures. The Community Risk Reduction Plan will include enforcement and monitoring tools to ensure regular review of progress toward the emission reduction targets, progress reporting to the public and responsible agencies, and periodic updates of the plan, as appropriate. **Action MS-11.8:** Require signage at new projects that generate truck traffic, which remind drivers that the State truck idling law limits truck idling to five minutes.

Energy Measures

Like Land Use and Local Impacts Measures, Energy and Climate Control Measures (ECM) are a new category of measures in the Bay Area 2010 CAP designed to reduce ambient concentrations of criteria pollutants and reduce emissions of CO_2. ECMs should promote energy conservation and efficiency in buildings throughout the community, promote renewable forms of energy production, reduce the "urban heat island" effect by increasing reflectivity of roofs and parking lots, and promote the planting of (low-VOC emitting) trees to reduce biogenic emissions from trees, lower air temperatures, provide shade and absorb air pollutants. Table 3.4-11 lists the proposed *Envision San José 2040 General Plan* policies that are supportive of the Bay Area 2010 Clean Air Plan ECMs. A description of each applicable ECM is provided along with a listing of relevant proposed *Envision San José 2040 General Plan* policies (Chapter 3) that would implement each measure.

Impact AQ-4: The policies in the proposed *Envision San José 2040 General Plan* support and reasonably implement the applicable *2010 Bay Area Clean Air Plan* Energy and Climate Control Measures (ECMs). Therefore, the proposed *Envision San José 2040 General Plan* would be consistent with the ECMs. **(Less Than Significant Impact)**

Table 3.4-11
Energy and Climate Control Measures and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Energy and Climate Control Measures	Relevant General Plan Policies and Actions
ECM-1 – Energy Efficiency The purpose of this measure is to provide 1) education to increase energy efficiency; 2) technical assistance to local governments to adopt and enforce energy-efficient building codes; and 3) incentives for improving energy efficiency at schools.	The proposed General Plan includes a range of policies that support and encourage increased energy efficiency in new and existing development. Key measures include: **Policy MS-15.9:** Train City code enforcement and development review staff in state-of-the-art renewable energy installations, Heating, Ventilation, and Air Conditioning (HVAC) and insulation industry standards, best practices, and resources to ensure buildings are constructed in compliance with those industry standards and best practices. **Policy MS-14.3:** Consistent with the California Public Utilities Commission's California Long Term Energy Efficiency Strategic Plan, as revised and when technological advances make it feasible, require all new residential and commercial construction to be designed for zero net energy use. **Policy MS-14.4:** Implement the City's Green Building Policies (see Green Building Section) so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, passive solar building design and planting of trees and other landscape materials to reduce energy consumption. **Policies MS-18.6 and MS-18.7**: Achieve by 2040, 50 million gallons per day of water conservation savings in San José, by reducing water use and increasing water use efficiency. Use the 2008 Water Conservation Plan as the data source to determine San José's baseline water conservation savings level. Refer to Section 3.13 Energy and Section 3.15 Greenhouse Gas Emissions for the text of additional proposed energy efficiency policies and actions.
ECM-2 – Renewable Energy This measure calls for promotion of distributed renewable energy generation (solar, micro wind turbines,	The proposed General Plan includes a range of policies that support and encourage increased energy efficiency in new and existing development. Key measures include:

Table 3.4-11
Energy and Climate Control Measures
and Relevant Proposed General Plan Policies

Bay Area 2010 Clean Air Plan Energy and Climate Control Measures	Relevant General Plan Policies and Actions
cogeneration, etc.) on commercial and residential buildings, and at industrial facilities.	**Policy MS-14.5**: Consistent with State and Federal policies and best practices, require energy efficiency audits and retrofits prior to or at the same time as consideration of solar electric improvements. **Action MS-14.6:** Replace 100% of the City's traffic signals and streetlights with smart, zero emission lighting by 2022. **Policy MS-15.3:** Facilitate the installation of at least 100,000 solar roofs in San José by 2022 and at least 200,000 solar roofs by 2040.
ECM-3 – Urban Heat Island Mitigation The purpose of this measure is to Mitigate the "urban heat island" effect by promoting the implementation of cool roofing, cool paving, and other strategies.	**Policy MS-21.1:** Manage the Community Forest to achieve San José's environmental goals for water and energy conservation, wildlife habitat preservation, stormwater retention, heat reduction in urban areas, energy conservation, and the removal of carbon dioxide from the atmosphere. **Policy MS-2.6**: Promote roofing design and surface treatments that reduce the heat island effect of new and existing development.
ECM-4 – Tree Planting The purpose of this measure is to promote planting of low-VOC emitting shade trees to reduce urban heat island effects, save energy, and absorb CO_2 and other air pollutants.	**Policy MS-21.1:** (**see ECM 3 above**) **Policy MS-21.6**: As a condition of new development, require the planting and maintenance of both street trees and trees on private property to achieve a level of tree coverage in compliance with and that implements City laws, policies or guidelines. **Policy MS-21.8:** For Capital Improvement Plan or other public development projects, or through the entitlement process for private development projects, require landscaping including the planting of new trees to achieve the following goals: 1. Avoid conflicts with nearby power lines. 2. Avoid potential conflicts between tree roots and developed areas. 3. Avoid use of invasive, non-native trees. 4. Remove existing invasive, non-native trees. 5. Incorporate native trees into urban plantings in order to provide food and cover for native wildlife species. 6. Plant native oak trees and native sycamores on sites which have adequately sized landscape areas and which historically supported these species. **Policy MS-14.4** Implement the City's Green Building Policies (see Green Building Section) so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, passive solar building design, and planting of trees and other landscape materials to reduce energy consumption.

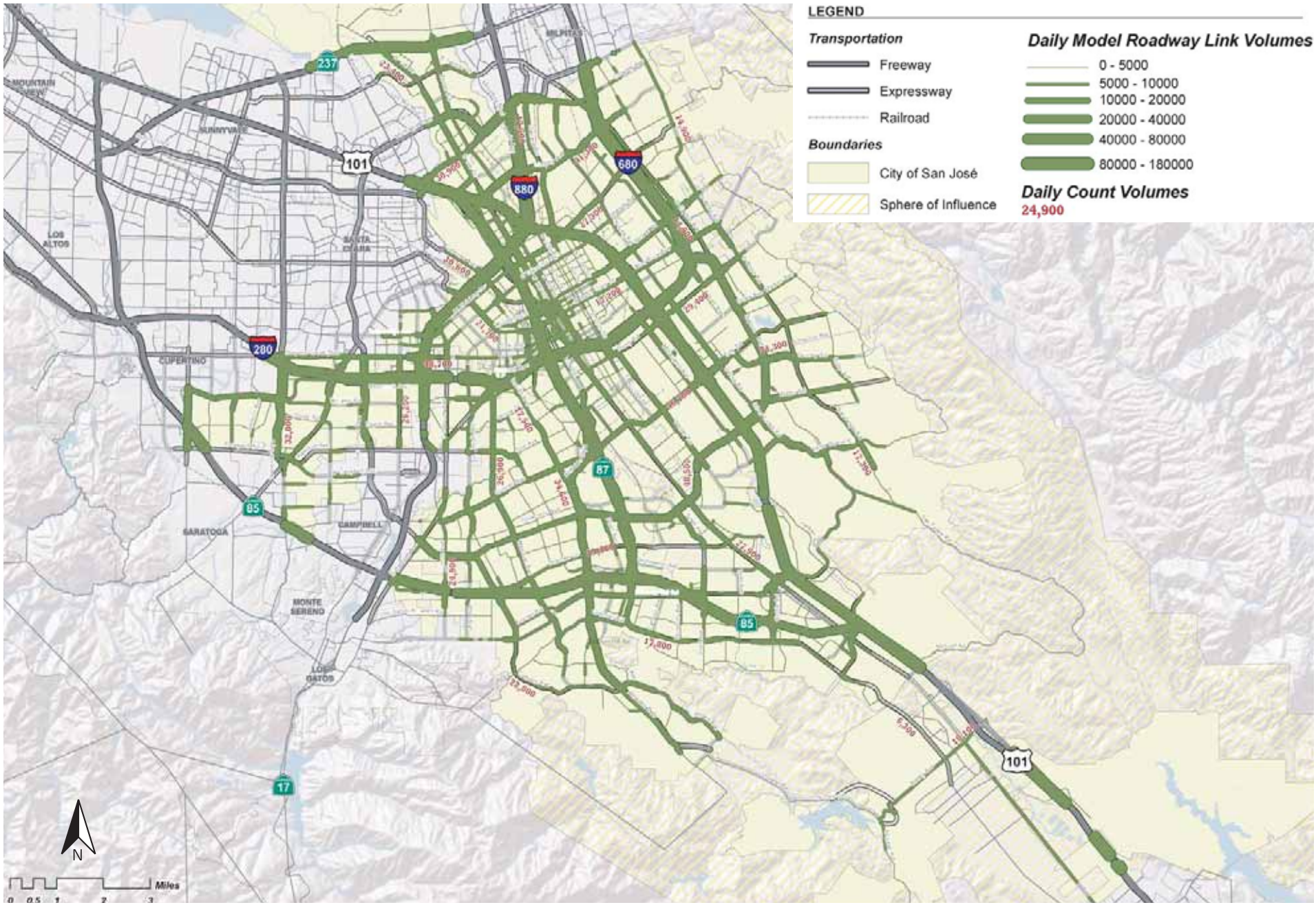
3.4.3.3 *Impacts to Sensitive Receptors from Substantial Pollutant Concentrations*

The primary sources of TAC emissions in San José are traffic (Interstate 280, Interstate 680, Interstate 880, US 101, State Routes 17, 82, 85, 87 and 237 and other major roadways), industrial uses (including their truck traffic generation), commercial uses (dry cleaners), backup generators, and the San José International Airport. At a plan-level, BAAQMD recommends that risks and hazards from TACs and $PM_{2.5}$ sources be identified in overlay zones of at least 500 feet from all freeways and high volume roadways and within identified Community Risk Reduction Areas. BAAQMD considers roadways with over 10,000 average daily trips (ADT) as high volume roadways (refer to Figure 3.4-3). This would include the Grand Boulevards and most Main Streets within the City. In effect, much of San José is within the central impact boundary or within 500 to 1,000 feet of a high volume roadway and could be exposed to elevated health risks from TACs and $PM_{2.5}$. Another mobile source of TAC emissions are diesel locomotive operations along both railroad lines and in maintenance facilities, such as the Caltrain maintenance facility.

Existing levels of emissions of toxic air contaminants from stationary sources in San José can be found in the most recent version of BAAQMD's annual Toxic Contaminant Control Report (see website http://www.baaqmd.gov/pmt/air_toxics/annual_reports/index.htm). A majority of these sources are dry cleaning facilities, which emit perchloroethylene. However, the most prevalent toxic contaminants in San José and Santa Clara County (excluding diesel particulate matter) are benzene and 1,3-Butadiene from combustion of gasoline by mobile sources and formaldehyde that comes from a variety of sources. Other sources of toxic air contaminants include landfills and manufacturing facilities.

Neither CARB nor BAAQMD provide recommendations for specific setbacks from railroad lines. The CARB Land Use Handbook calls for a 1,000 foot setback from major railyards and BAAQMD is in the process of preparing screening tables for setbacks from railroad lines. Recommended setback screening distances from railroad lines will likely be less than 500 feet as the component of emissions from train idling would not be a factor along a commuter rail line and trains pass by most locations relatively quickly. Caltrain generates approximately 100 daily train passbys. Modeling studies of DPM exposure from these train passbys have not been conducted.

Proposed projects that would emit TACs would require review under the BAAQMD rules and regulations or review under CEQA, especially if near sensitive receptors. However, projects with sensitive receptors proposed near localized sources of TAC emissions (e.g., residences to be located near major roadways) could expose new sensitive populations to TACs and $PM_{2.5}$. Per CARB and BAAQMD, exposure to elevated levels of TACs and $PM_{2.5}$ contributes to elevated health risks. BAAQMD recommends that buffers to avoid the exposure of sensitive receptors to TAC sources be reflected in local plan policies (e.g. General Plans), land use maps, and implementing ordinances.



Source: Fehr and Peers (2010)

ROADS WITH AVERAGE DAILY TRIPS OVER 10,000

FIGURE 3.4-3

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Impacts from Toxic Air Contaminants

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce exposure to TACs added by future development. Proposed General Plan Policies and Actions that provide program-level mitigation for exposure to TACs within the City are identified below.

Toxic Air Contaminants Policies and Actions	
Policy MS-11.1	Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.
Policy MS-11.2	For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, require new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive receptors.
Policy MS-11.3	Truck circulation routes will be reviewed for projects generating significant heavy duty truck traffic to designate truck routes that minimize exposure of sensitive receptors to TACs and particulate matter.
Policy MS-11.4	Encourage the installation of air filtration, to be installed at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources.
Policy MS-11.5	Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.
Action MS-11.6	Develop and adopt a comprehensive Community Risk Reduction Plan that includes: baseline inventory of toxic air contaminants (TACs) and particulate matter smaller than 2.5 microns ($PM_{2.5}$) emissions from all sources, emissions reduction targets, and enforceable emission reduction strategies and performance measures. The Community Risk Reduction Plan will include enforcement and monitoring tools to ensure regular review of progress toward the emission reduction targets, progress reporting to the public and responsible agencies, and periodic updates of the plan, as appropriate.
Action MS-11.8	Require signage at new projects that generate truck traffic, which remind drivers that the State truck idling law limits truck idling to five minutes.

Existing Regulations and Adopted Plans and Policies

Existing state and local laws, regulations and adopted plans that would reduce or avoid possible air quality pollutants include:

- Clean Air Act

- Bay Area 2010 Clean Air Plan
- BAAQMD CEQA Guidelines
- City of San José Municipal Code Chapter 9.11 and Chapter 11.105

Discussion of Toxic Air Contaminants Impacts

The City of San José is currently working with BAAQMD on development of a Community Risk Reduction Plan to address reducing exposures of residents to toxic air contaminants and particulate matter smaller than 2.5 microns emissions from all sources. Until the Community Risk Reduction Plan is in place, site specific modeling would be required prior to development of residential uses that could be affected by toxic air contaminants associated with roadways or stationary sources, in accordance with BAAQMD health risk criteria. Ultimately, the Community Risk Reduction Plan will include enforcement and monitoring tools and a means to update community risk reduction measures based upon new information or changed conditions. Through these short-term and long-term measures, possible health hazards to new residents and other sensitive populations would be substantially reduced.

Impact AQ-5: Implementation of the proposed *Envision San José 2040 General Plan* will involve the placement of sensitive receptors (e.g., new residences) near localized sources of TACs and $PM_{2.5}$. The proposed *Envision San José 2040 General Plan* does not provide specific adequate buffers between existing sources of TAC and new residences or sensitive receptors, but includes a mechanism for screening and mitigating the effects of pollutants that can pose Community Risks. **(Less Than Significant Impact)**

3.4.3.4 *Expose Sensitive Receptors to Objectionable Odors*

Odor impacts could result from siting a new odor source near existing sensitive receptors or siting a new sensitive receptor near an existing odor source. Implementation of the General Plan may involve the placement of sensitive receptors (e.g. new residences) near localized sources of odors that could include painting/coating operations or coffee roasters.

The BAAQMD CEQA Guidelines provide project screening trigger levels for potential odor sources. BAAQMD has developed a list of recommended odor screening distances for specific odor generating facilities.[50] Projects that would locate sensitive receptor(s) near odor source(s) closer than the screening distances would be considered to result in a possible significant impact. If the proposed project would include the operation of an odor source, the screening distances should also be used to evaluate the potential impact to existing sensitive receptors. Projects that would locate sensitive receptor(s) near odor source(s) farther than the screening distances, or vice versa, would be considered to have a sufficient buffer. To avoid significant impacts, the 2010 BAAMQD CEQA Guidelines recommend that buffer zones to avoid adverse impacts from odors should be reflected in local plan policies, land use maps, and implementing ordinances.

[50] Bay Area Air Quality Management District. 2009. Draft California Environmental Quality Act Air Quality Guidelines Table 3-3 Odor Screening Distances. December 2009.

Proposed General Plan Policies
That Reduce or Avoid Adverse Odor Impacts

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce exposure to odors added by future development. Proposed General Plan Policies and Actions that provide program-level mitigation for exposure to odors within the City are identified below.

Objectionable Odor Policies	
Policy MS-12.1	For new, expanded, or modified facilities that are potential sources of objectionable odors (such as landfills, green waste and resource recovery facilities, wastewater treatment facilities, asphalt batch plants, and food processors), the City requires an analysis of possible odor impacts and the provision of odor minimization and control measures as mitigation.
Policy MS-12.2	Require new residential development projects and projects categorized as sensitive receptors to be located an adequate distance from facilities that are existing and potential sources of odor. An adequate separate distance will be determined based upon the type, size and operations of the facility.

Existing Regulations and Adopted Plans and Policies

Existing state and local laws, regulations, and adopted plans and policies that would reduce or avoid possible air quality pollutants include:

- Clean Air Act
- Bay Area 2010 Clean Air Plan
- BAAQMD CEQA Guidelines

Impact AQ-6: Implementation of the proposed *Envision San José 2040 General Plan* may involve the placement of sensitive receptors (e.g., new residences) near localized sources of odors. Policies included in the proposed *Envision San José 2040 General Plan* would provide for adequate buffers between sources of odors and new residences or sensitive receptors. **(Less Than Significant Impact)**

3.4.3.5 *Impacts from Construction Dust and Exhaust Emissions*

Development allowed under the proposed *Envision San José 2040 General Plan* would generate dust that could affect local and regional air quality. Dust is generated from a variety of project construction activities including grading, import/export of fill material, and vehicle travel on unpaved surfaces. Soil can also be tracked out onto paved roads where it is entrained in the air by passing cars and trucks. The rate of dust emissions is related to the type and size of the disturbance, meteorological conditions, and soil conditions. Similar to construction dust, construction exhaust emissions are difficult to predict because of the range of equipment used, and variability age of equipment and in the hours of use for each project. Exhaust from diesel powered construction equipment affects regional ozone levels as well as localized particulate levels.

Diesel particulate matter is considered a toxic air contaminant per the California Health and Safety Code Section 39655. Construction equipment engines will be replaced and equipment fleets

managed in the next several years as required under CARB diesel vehicle regulations, leading to an overall decrease in emissions of exhaust particulate matter and ozone precursor emissions, as reflected in URBEMIS (urban emissions) software used to estimate construction, area source, and operational air pollutant emissions from land use projects.

The BAAQMD CEQA Guidelines suggest that the significance of construction period emissions should be based on the application of control measures. BAAQMD recommends a set of feasible control measures to reduce PM_{10} near construction sites. BAAQMD also recommends that control measures for equipment exhaust emissions also be included. The BAAQMD qualitative approach requires all construction projects to implement some level of control measures to reduce impacts.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Air Quality Impacts From Construction Activities

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce construction dust emissions added by future development. Proposed General Plan Policies and Actions that provide program-level mitigation for construction dust emissions within the City are identified below.

Construction Air Emission Minimization Policies	
Policy MS-13.1	Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At minimum, conditions shall conform to construction mitigation measures recommended in the current BAAQMD CEQA Guidelines for the relevant project size and type.
Policy MS-13.2	Construction and/or demolition projects that have the potential to disturb asbestos (from soil or building material) shall comply with all the requirements of the California Air Resources Board's air toxic control measures (ATCMs) for Construction, Grading, Quarrying, and Surface Mining Operations.
Policy MS-13.3	Require subdivision designs and site planning to minimize grading and use landform grading in hillside areas.
Action MS-13.4	Adopt and periodically update dust, particulate, and exhaust control standard measures for demolition and grading activities to include on project plans as conditions of approval based upon construction mitigation measures in the BAAQMD CEQA Guidelines.
Action MS-13.5	Prevent silt loading on roadways that generates particulate matter air pollution by prohibiting unpaved or unprotected access to public roadways from construction sites.
Action MS-13.6	Revise the grading ordinance and condition grading permits to require that graded areas be stabilized from the completion of grading to commencement of construction.

Existing Regulations and Adopted Plans and Policies

Existing state and local laws, regulations, and adopted plans and policies that would reduce or avoid possible air quality pollutants include:

- Clean Air Act
- Bay Area 2010 Clean Air Plan
- San José Municipal Code general regulations for dust control
- BAAQMD CEQA Guidelines
- BAAQMD District Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing

Impact AQ-7: New development and redevelopment allowed under the proposed *Envision San José 2040 General Plan* could result in substantial quantities of construction dust emissions and emissions from construction equipment. Implementation of proposed policies and existing regulations and policies would substantially reduce construction dust emissions. **(Less Than Significant Impact)**

3.4.3.6 *Violate an Ambient Air Quality Standard or Contribute Substantially to an Existing or Project Air Quality Violation*

The Bay Area as a whole does not meet State or Federal ambient air quality standards for ground level ozone and State standards for PM_{10} and $PM_{2.5}$.[51] The pollutant of most concern in the Santa Clara Valley is ozone, as discussed previously above. New development and redevelopment allowed under the proposed *Envision San José 2040 General Plan* could increase the concentration of air pollutants due to mobile sources and operation of equipment. Population projections under the proposed *Envision San José 2040 General Plan* are below those projected in the Bay Area 2010 Clean Air Plan, although the projected rate of VMT growth is greater than the rate of population growth and to a lesser extent the growth of the City's service population (residents plus employees). Therefore, the proposed *Envision San José 2040 General Plan* is not wholly consistent with the Clean Air Plan for the Bay Area and the associated thresholds for population projections and air pollutants. As such, implementation of the proposed *Envision San José 2040 General Plan* could violate an ambient air quality standard or contribute substantially to an existing or projected air quality violation.

Proposed General Plan Policies That Reduce or Avoid Adverse Air Quality Standards Impacts

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce air pollution added by future development. Proposed General Plan Policies and Actions that provide program-level mitigation for air quality pollution within the City are identified below.

[51] BAAQMD. "Air Quality and Attainment Status". Accessed April 15, 2011. Available at: <http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm>

Air Pollutant Emission Reduction Policies	
Policy MS-10.1	Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.
Policy MS-10.5	In order to reduce vehicle miles traveled and traffic congestion, new development within 2,000 feet of an existing or planned transit station will be required to encourage the use of public transit and minimize the dependence on the automobile through the application of site design guidelines and transit incentives.
Policy MS-10.8	Minimize vegetation removal required for fire prevention. Require alternatives to discing, such as mowing, to the extent feasible. Where vegetation removal is required for property maintenance purposes, encourage alternatives that limit the exposure of bare soil.
Action MS-10.10	Actively enforce the City's ozone-depleting compound ordinance and supporting policy to ban the use of chlorofluorocarbon compounds (CFCs) in packaging and in building construction and remodeling to help reduce damage. The City may consider adopting other policies or ordinances to reinforce this effort to help reduce damage to the global atmospheric ozone layer.
Action MS-10.11	Enforce the City's wood-burning appliance ordinance to limit air pollutant emissions from residential and commercial buildings.
Action MS-10.12	Increase the City's alternative fuel vehicle fleet with the co-benefit of reducing local air emissions. Implement the City's Environmentally Preferable Procurement Policy (Council Policy 4-6) and Pollution Prevention Policy (Council Policy 4-5) in a manner that reduces air emissions from municipal operations. Support policies that reduce vehicle use by City employees.

Existing Regulations and Adopted Plans and Policies

Existing state and local laws, regulations and adopted plans and policies that would reduce or avoid possible air quality pollutants include:

- Clean Air Act and CARB regulations (including Pavley regulations)
- 2010 Clean Air Plan
- City of San José Municipal Code Chapter 9-10 and Chapter 11-105

Discussion of Air Quality Standards Impacts

Reducing VMT could result in lower levels of air pollutant emissions and less congestion on area roadways and intersections by reducing the need for commuters to travel long distances between work and home. VMT is potentially affected by a range of factors including, but not limited to: population demographics; economic, social, and cultural influences; the mix of employment activities; the distance between employee residences and their work places; the proximity of employment and residential uses to transit systems; congestion levels on roadways and diversion from congested roadways to other roadways, transit or other modes; and the availability of alternative modes of transportation, such as the regional transit system.

The ratio of VMT/capita is a measure of vehicular miles traveled compared to residents. It does not take into account the number of employees in an area, and therefore if jobs are projected to increase at a rate greater than population growth, the VMT/capita would likely increase at a faster rate, even if newer jobs are filled by local residents.

Consistent with the project objectives, the proposed project would over the long-term increase job growth at a rate greater than population if full build-out of the planned growth capacity is achieved. Because the proposed project supports a significant amount of residential development, in the near-term utilitization of this growth capacity could result in a further worsening of the City's job/housing imbalance, contributing to an increase in regional commuting between jurisdictions. In the mid-term implementation of the General Plan, the increasing emphasis on job growth could result in the City achieving a jobs/housing balance which would allow for greater internalization of trips (compared to existing conditions). If San José becomes more jobs rich, through build-out of the proposed General Plan job growth capacity, the rate of VMT per capita (or per resident) would increase at a greater rate than population growth as the City's VMT includes more employees as well as residents, the types of employment change, and additional employees commute within the region to and from their jobs.

As previously discussed in Section 3.2, the evaluation of VMT in this PEIR relies upon transportation modeling techniques which use conservative assumptions about the ability of land use patterns and policies to affect future commuter behavior. In addition, there is no assurance that, given the preference for automobile travel by current residents and employees and planned increases in the number of jobs in San José, implementation of the policies in the proposed General Plan would reduce projected VMT/capita to a rate equivalent to the growth in population. Also as previously stated, projected demographic changes alone are expected to result in an increase in to VMT even without any population growth. Air emissions could, therefore, increase at a rate greater than that anticipated in the latest Clean Air Plan for the Bay Area and implementation of the proposed *Envision San José 2040 General Plan* could violate an ambient air quality standard or contribute substantially to an existing or projected air quality violation.

Impact AQ-8: New development and redevelopment allowed under the proposed *Envision San José 2040 General Plan* could increase air pollutant emissions and concentrations within the Air Basin. Implementation of proposed policies and existing regulations and programs would reduce air pollutant emissions per capita, but not to a less than significant level. **(Significant Impact)**

3.4.3.7 *Climate Change*

Concentrations of several of the key air pollutants, such as ozone and PM, depend strongly upon the vertical gradient of temperature in the lower atmosphere. [52] The persistence of California's ozone problem is associated with inversions, warm sunny days with stagnant atmospheric conditions that trap emissions close to the surface where they have ample opportunity to accumulate and to form smog. Climate variables, such as higher temperatures and increased emissions from natural processes (such as decomposition of plant materials), would produce higher ozone concentrations.[53] Future redevelopment and development within San José would contribute to GHG emissions, as discussed in detail in Section 3.15 Greenhouse Gas Emissions of this PEIR.

[52] California Energy Commission (Climate Change Center). *Climate Variability and California Low-Level Temperature Inversions.* CEC-500-2009-020-F. August 2009. Available at: <http://www.energy.ca.gov/2009publications/CEC-500-2009-020/CEC-500-2009-020-F.PDF>
[53] California Climate Action Team. *Climate Action Team Draft Biennial Report*. March 2009.

According to the U.S. EPA and CARB, an increase in summer temperatures and the number of days ozone pollution levels are exceeded can contribute to adverse health effects ranging from minor restricted activity days and work loss days, to hospitalizations due to asthma-related, bronchitis, and other respiratory or cardiovascular symptoms, to premature deaths. The proposed General Plan includes a mix of uses, including sensitive residential populations. Like other residential uses in San José, new residents could be subject to effects of higher temperatures and air pollution if warming temperatures occur locally. Due to the proximity to San Francisco Bay, new residents would not be subject to effects as severe as in inland areas of California.

Proposed General Plan Policies That Reduce or Avoid Adverse Air Quality and Health Effects Associated with Climate Change

The proposed *Envision San José 2040 General Plan* has Goals and Policies to address sustainability aimed at reducing the City's contribution to GHG emissions and ozone precursors. Air quality policies identified in Section 3.4.3.6, above also are designed to reduce and minimize emissions. Transportation Control Measures in Table 3.4-9 and other policies within the Land Use and Transportation sections will also reduce air pollutants, by encouraging alternative transportation modes, sustainable building practices and other energy efficiency measures. One of the environmental benefits of trees that are part of the urban forest canopy is producing shade which helps reduce local air temperatures. Proposed *Envision San José 2040 General Plan p*olicies (Chapters 3 and 4) would reduce heat related impacts from climate change by enhancing the role trees play for improving local air quality within the City. Other policies related to adapting to climate change include those that reinforce emergency response (for example, for seniors and sensitive populations during extended periods with high temperatures) and those that reduce the heat island effect in urban areas from pavements and dark building roofs.

Community Forest Policies	
Policy MS-21.4	Encourage the maintenance of mature trees, especially natives, on public and private property as an integral part of the community forest. Prior to allowing the removal of any mature tree, pursue all reasonable measures to effectively preserve it.
Policy MS-21.5	As part of the development review process, preserve protected trees (as defined by the Municipal Code), and other significant trees. Avoid any adverse affect on the health and longevity of protected or other significant trees through appropriate design measures and construction practices. Special priority should be given to the preservation of native oaks and native sycamores. When tree preservation is not feasible, include appropriate tree replacement, both in number and spread of canopy.
Policy MS-21.6	As a condition of new development, require the planting and maintenance of both street trees and trees on private property to achieve a level of tree coverage in compliance with and that implements City laws, policies or guidelines.
Policy MS-21.7	Manage infrastructure to ensure that the placement and maintenance of street trees, streetlights, signs and other infrastructure assets are integrated. Give priority to tree placement in designing or modifying streets.
Policy MS-21.8	For Capital Improvement Plan or other public development projects, or through the entitlement process for private development projects, require landscaping including the planting of new trees to achieve the following goals:

	1. Avoid conflicts with nearby power lines. 2. Avoid potential conflicts between tree roots and developed areas. 3. Avoid use of invasive, non-native trees. 4. Remove existing invasive, non-native trees. 5. Incorporate native trees into urban plantings in order to provide food and cover for native wildlife species. 6. Plant native oak trees and native sycamores on sites which have adequately sized landscape areas and which historically supported these species.
Attractive City Policies	
Policy CD-1.24	Further the Community Forest Goals and Policies in this Plan by requiring new development to plant and maintain trees at appropriate locations on private property and along public street frontages. Use trees to help soften the appearance of the built environment, help provide transitions between land uses, and shade pedestrian and bicycle areas.
Policy CD-1.25	Within new development projects include preservation of ordinance-sized and other significant trees, particularly natives. Avoid any adverse affect on the health and longevity of such trees through design measures, construction, and best maintenance practices. When tree preservation is not feasible, include replacements or alternative mitigation measures in the project to maintain and enhance our Community Forest.
Emergency Management Policies	
Policy ES-4.2	Provide for continued essential emergency public services during and following natural or human-made disasters to mitigate their impacts and to help prevent major problems during post-disaster response such as evacuations, rescues, large numbers of injuries, and major clean up operations.
Policy ES-4.6	Coordinate with other public, private, and non-profit organizations to ensure that emergency preparedness and disaster response programs serve all parts of the City equitably with regards to access to health care.

Existing Regulations and Adopted Plans and Policies

Existing state and local laws, regulations and adopted plans that would reduce or avoid increased emissions of air quality pollutants include:

- Clean Air Act and CARB regulations (including Pavley regulations)
- California Climate Adaptation Strategy and Executive Order S-13-2008
- California Global Warming Solutions Act of 2006 (AB 32)
- Bay Area 2010 Clean Air Plan

Impact AQ-9: Existing development, new development and redevelopment allowed under the proposed *Envision San José 2040 General Plan* could be exposed to elevated temperatures and ozone levels associated with climate change. The City's location near the coast and implementation of proposed policies and existing regulations and programs would limit health effects to the public associated with climate change. **(Less Than Significant Impact)**

3.4.4.8 *Impacts of Rancho del Pueblo and iStar Residential Options*

As discussed in Section 2.2.8 in the Project Description, this PEIR also evaluates options for residential land use designations and anticipated future development on two properties; the Rancho del Pueblo Golf Course in the Alum Rock Planning Area and the iStar property in the Edenvale Planning Area (Residential Option Sites). Under these options one or both of these properties would be designated for residential uses instead of the industrial uses assumed on the iStar property and the park/open space on the existing Rancho del Pueblo Golf Course. Because these options also include changes to other Growth Areas to balance the jobs and dwelling units, the overall amount of development capacity assumed under the Preferred Scenario would not change citywide.

A comparison and summary of air quality impacts for the residential options is shown in Table 3.4-12. Implementation of an updated General Plan that includes one or both of the residential options for the Rancho del Pueblo and iStar sites would have impacts similar to those from the proposed project, with one exception. Impacts to sensitive receptors from substantial pollutant concentrations (Impact AQ-5) is discussed in more detail following Table 3.4-12.

Table 3.4-12
Air Quality Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance [1]
AQ-1	Consistency with Clean Air Plan Projections	Projected rates of VMT/capita would be greater than population growth and similar to the proposed General Plan.	same (S)
AQ-2 AQ-3 AQ-4	Consistency with Air Quality Control Measures	The same policies in the proposed General Plan would be applied to residential development on the two sites.	same (LTS)
AQ-5	**Impacts to Sensitive Receptors from Substantial Pollutant Concentrations**	**If most of the Rancho del Pueblo site is developed with housing by 2015, a significant impact to future residents could occur (refer to discussion below and Figure 3.4-4).** Impacts to sensitive receptors on the iStar site would be less than significant by including an adequate buffer between sensitive receptors and the source of pollutants.	**Rancho: greater impact (S)** iStar: same (LTS)
AQ-6	Expose Sensitive Receptors to Objectionable Odors	Neither site is located in close proximity to a known source of odors.	same (LTS)
AQ-7	Impacts from Construction Dust and Exhaust Emissions	Construction impacts on the two sites on the valley floor would be similar to those in other areas of San José. The same policies in the proposed General Plan would be applied to residential development on the two sites.	same (LTS)
AQ-8	Contribute Substantially to an Existing Air Quality Standard Violation	Projected rates of VMT/capita would be greater than population growth and similar to the proposed General Plan.	same (S)

Table 3.4-12
Air Quality Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance [1]
AQ-9	Climate Change (Air Quality Health Impacts)	Impacts would be the same as the proposed General Plan based on the locations within San José and implementation of proposed policies and existing regulations and programs.	same (LTS)

[1] S= Significant; LTS = Less Than Significant
The determination of significance assumes implementation of proposed General Plan policies and actions and existing regulations and adopted plans and policies previously identified throughout Section 3.4.4 Air Quality Impacts.
Bold = New Significant Impact

Impacts to Sensitive Receptors from Substantial Pollutant Concentrations (Impact AQ-5)

Modeling of projected sources of TACs and $PM_{2.5}$ for the two Residential Option Sites was completed by Illingworth and Rodkin in March 2011 (See Appendix D-2). Air toxics modeling was completed at these two sites to provide information to the decisionmakers and the public on the two option sites which were not previously proposed for such uses as a part of the General Plan. For the Rancho Del Pueblo Site, emissions and air dispersion modeling of the traffic along US 101 and King Road was conducted to predict annual concentrations of diesel particulate matter (DPM), total organic compounds, and fine particulate matter ($PM_{2.5}$). For the iStar site, modeling was conducted for the traffic along Highway 85 and Monterey Highway, diesel locomotives on the UPRR rail line, and a standby diesel generator. Annual concentrations of DPM, $PM_{2.5}$, and total organic compounds were used to predict cancer and non-cancer health risks, in accordance with BAAQMD procedures.

Rancho Del Pueblo Site

The site is located between about 100 feet and 2,000 feet from the nearest through lane of US 101. Based on health risk modeling, significant cancer risks posed by US 101 traffic extend about 980 feet from the edge of the roadway. Significant cancer risks from King Road extend about 50 feet from the edge of the roadway (See Figure 3.4-4). Significant non-cancer $PM_{2.5}$ health risks posed by US 101 traffic extend approximately 250 feet from the edge of the roadway (See Figure 3.4-4).

Implementation of the proposed *Envision San José 2040 General Plan* with the Rancho Del Pueblo Residential Option will involve the placement of sensitive receptors (e.g., new residences) near localized sources of TACs and $PM_{2.5}$. Approximately half of the site would be exposed to TACs at levels above significance thresholds for sensitive residential uses. The proposed *Envision San José 2040 General Plan* does not provide specific adequate buffers between existing sources of TAC and new residences or sensitive receptors, but includes a mechanism for screening and mitigating the effects of pollutants that can pose Community Risks. Using that screening methodology for this site shows that significant impacts would occur if roughly the western half of the site was developed with housing. Based on the housing type (single-family attached townhouses and/or single-family detached) and current mitigation options, the mitigation to reduce impacts to a less than significant level would be setting the houses back from the freeway approximately 980 feet. **(Significant Impact)**

SIGNIFICANT CANCER RISK AND $PM_{2.5}$ CONCENTRATIONS - RANCHO DEL PUEBLO SITE

FIGURE 3.4-4

iStar Site

Computed cancer risks and $PM_{2.5}$ concentrations throughout the iStar site were found to be below the BAAQMD thresholds of 10.0 additional cases of cancer in a population of one million and $PM_{2.5}$ concentrations of 0.3 $\mu g/m^3$ or more. Note that cancer risks from Highway 85 reflect the relatively low volume of trucks on this freeway due to travel restrictions. Development of residential uses on the iStar site would not expose sensitive populations to substantial levels of toxic air contaminants or $PM_{2.5}$. **(Less Than Significant Impact)**

3.4.4 Air Quality Mitigation and Avoidance Measures for General Plan Impacts

3.4.4.1 *Proposed General Plan*

Clean Air Plan and Air Quality Standards Impacts

While the City proposes to implement measures to reduce VMT and associated air pollutant emissions, there is no assurance that these measures would reduce the VMT per capita to a level at or below the current rate given the projected increase in VMT and vehicle trips (more than 24 percent greater than the increase in population). The increased growth in VMT per capita could result in emissions beyond those anticipated in the region's Clean Air Plan. **(Significant Unavoidable Impact)**

3.4.4.1 *Rancho del Pueblo and iStar Residential Options*

Clean Air Plan and Air Quality Standards Impacts

Like the proposed General Plan discussed above, there is no assurance that measures to reduce VMT and associated air pollutant emissions would reduce the VMT per capita to a level at or below the current rate given the projected increase in VMT and vehicle trips (more than 40% greater than the increase in population). Traffic modeling for this Option indicates an overall VMT level consistent with the proposed project. The increased growth in VMT per capita could result in emissions beyond those anticipated in the region's Clean Air Plan. **(Significant Unavoidable Impact)**

Impacts to Sensitive Receptors on the Rancho del Pueblo Residential Option Site from Substantial Pollutant Concentrations (TACs)

Proposed General Plan Policy MS-11.1, which requires new residential development to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants to avoid significant risks to health and safety, would provide program-level mitigation for the Rancho del Pueblo site *if* fully implemented.

Mitigation could consist of setting residences back from US 101 by a minimum of 980 feet if housing is proposed to be constructed on the site by 2015. This would reduce TAC impacts to a less than significant level.

Other risk reduction strategies identified by BAAQMD in their CEQA Air Quality Guidelines that could apply to this site include:

- Indoor air quality filters and ventilation;

- Building heights and air intakes;
- Tree and vegetation buffers; and
- Land use and transportation planning to reduce vehicle emissions.

Under the proposed Mixed Use Neighborhood land use designation, residential development would consist of either townhouse or small lot single-family residences, which are not as tall as multiple family housing or nor as conducive to installation and maintenance of filtration systems as effective mitigation, since the filters must be place in all individual air intakes. At the present time, BAAQMD is reviewing and quantifying these risk reduction strategies along with others such as tree and vegetation buffers. [54] There is no assurance that TAC impacts at this location on the southeast side of US 101 for single-family residences can be reduced to a less than significant level this close to a major north-south freeway given projected traffic and the predominant wind direction from the northwest and northeast of the site.

It is not currently proposed that an area be reserved for non-residential uses within the Rancho del Pueblo site as a buffer. A buffer of 980 feet would substantially reduce the development potential of the site for housing. Clustering development in the eastern portion of the property (closer to King Road) at higher densities could allow for a similar number of residences on the site, while allowing for a setback from US 101. Because of development patterns in the area, there would not be an adequate transition to adjacent lower-density neighborhoods, however, if the development potential for the site is maximized. Development of the entire property at the proposed density would result in a significant air quality health impact to future residents. **(Significant Unavoidable Impact)**

3.4.5 Significance Conclusions

3.4.5.1 *Proposed General Plan*

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions would reduce emissions associated with vehicle trips through planned multi-modal improvements, trip reduction programs, and local land use strategies. The proposed General Plan also includes Transportation Demand Measures, such as transit pass subsidies and free shuttle service by employers, consistent with the Clean Air Plan. While the City proposes to implement measures to reduce VMT and associated air pollutant emissions (such as multi-modal infrastructure improvements and implementation of parking strategies in Tier 2), there is no assurance that these measures would reduce the VMT per capita to a level at or below the current rate. The increased growth in VMT per capita could result in emissions beyond those anticipated in the region's Clean Air Plan. With the projected increase in vehicle miles traveled, beyond or above the growth in population and employment, impacts associated with increased emissions of criteria pollutants would remain significant and unavoidable. **(Significant Unavoidable Impact)**

Implementation of proposed policies and existing regulations and policies would substantially reduce construction dust emissions and emissions from construction equipment. **(Less Than Significant Impacts)**

[54] Source: *CEQA Guidelines Implementation Update*, Public Workshop in Oakland, California, February 23, 2011, Presentation by Sigalle Michael, Senior Environmental Planner, BAAQMD.

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions would reduce impacts to sensitive receptors from substantial pollutant concentrations of TACs and $PM_{2.5}$ to a less than significant level. **(Less Than Significant Impact)**

The City's location near the coast and implementation of proposed policies and existing regulations and programs would limit health effects to the public from elevated temperatures and ozone levels associated with climate change. (**Less Than Significant Impact)**

3.4.5.1 *Rancho del Pueblo and iStar Residential Options*

With the exception of impacts to sensitive receptors for the Rancho del Pueblo Residential Option site, the significance conclusions for the Rancho del Pueblo and iStar Residential Options would be the same as the proposed project.

Based on currently available information, if residential uses at projected densities (e.g., single-family houses and townhouses) are developed within approximately 980 feet of US 101 on the Rancho del Pueblo site, future residents on the site would be exposed to substantial toxic air contaminant pollutant concentrations. **(Significant Unavoidable Impact)**

3.5 BIOLOGICAL RESOURCES

The following discussion evaluates biological resources conditions and the environmental effects of implementation of the *Envision San José 2040 General Plan*. The analysis in this section is based in part on the following technical report:

- *Envision San José 2040 General Plan Update Biological Resources Report*, H.T. Harvey & Associates, August 18, 2010.

A copy of the report is included in the Technical Appendices to this Draft PEIR (Appendix E).

A portion of the City is addressed in the draft Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) released in December 2010. The draft HCP/NCCP is a conservation program to promote the recovery of endangered species while accommodating planned development, infrastructure and maintenance activities. Information from public draft versions of the HCP/NCCP have also been referenced when preparing this analysis, although the HCP/NCCP is still a proposed plan and specifics of the program are under development.

3.5.1 Existing Setting

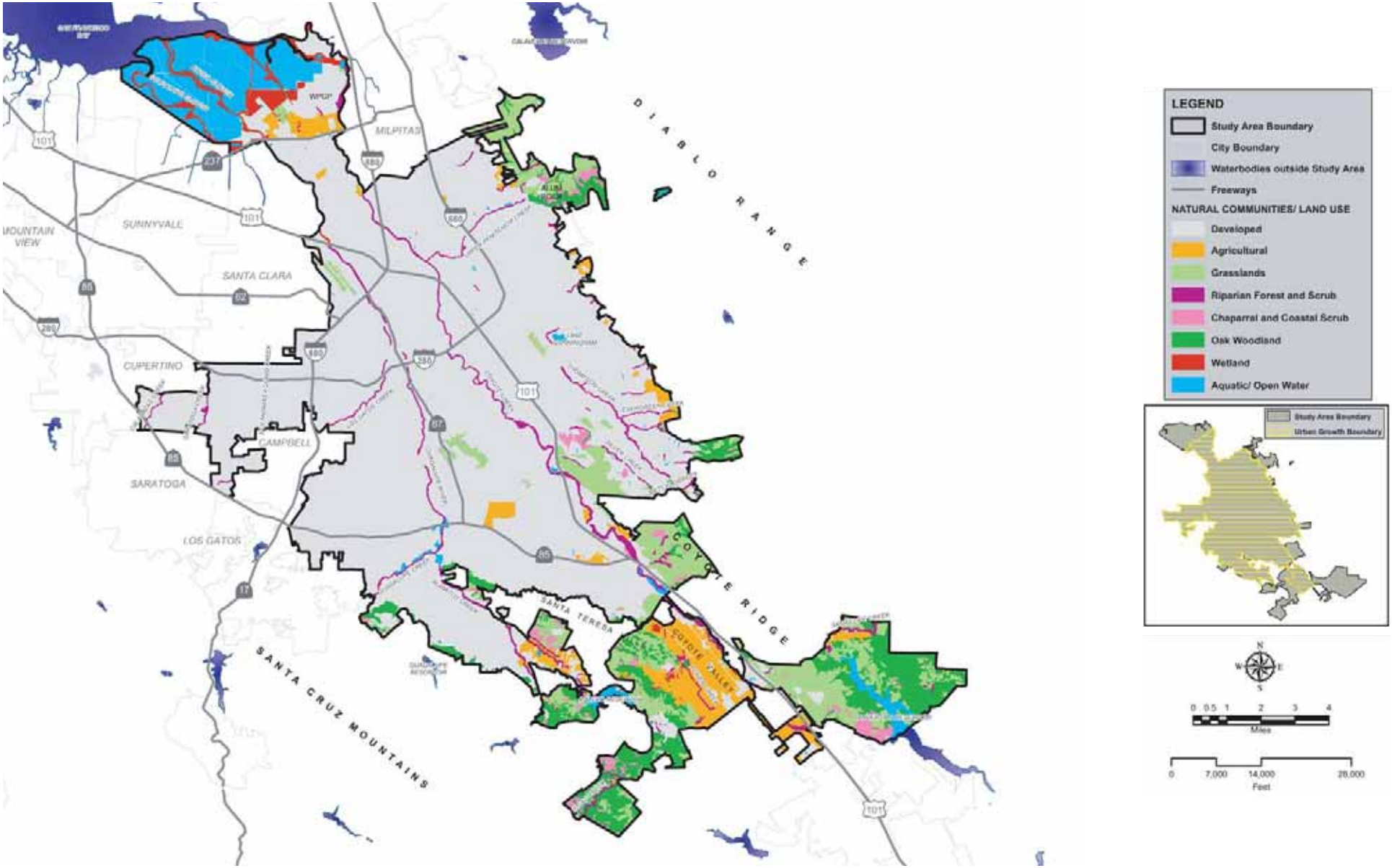
3.5.1.1 *Natural Communities and Habitats*

Eight main habitat types are present within the City limits of San José (refer to Figure 3.5-1). These include developed, agricultural, grasslands, riparian forest and scrub, chaparral and coastal scrub, oak woodland, wetland, and aquatic/open water. These habitats can be further defined into additional plant associations or biotic habitats. The main habitats are characterized below. The areas supporting the various biotic habitats in the City are listed in Table 3.5-1 and shown on Figure 3.5-2 (northern San José), Figure 3.5-3 (central San José), and Figure 3.5-4 (southern San José). Refer to Appendix E for more detailed descriptions of plant associations/wildlife habitats in the City.

Several habitats found within the City limits are considered to be sensitive habitats by state and federal agencies, such as U.S. Army Corps of Engineers, the Regional Water Quality Control Board, the US Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG). These include wetland and aquatic habitat, stream and riparian habitat, serpentine habitat, and oak woodland habitat. In addition, sensitive habitats tracked by the CDFG's Natural Diversity Database that occur within the City limits include Northern Coastal Salt Marsh, Serpentine Bunchgrass Grassland, and Sycamore Alluvial Woodland. Sensitive habitats occurring within the City are also discussed below within the descriptions of the main habitats found in San José.

Developed

Developed land uses include urban, suburban, and rural residential areas, golf courses, urban parks, landfills, and the San José-Santa Clara Water Pollution Control Plant (WPCP) in Alviso. Human-altered landscapes that contain large amounts of paved surfaces and/or landscaped gardens with ornamental and/or weedy species are generally considered "developed." Approximately 68 percent of the area within the City limits and 80 percent of the area within the City's Urban Growth Boundary (UGB) are occupied by developed urban and suburban land uses.



Source: H.T. Harvey & Associates and City of San José (August 2010).

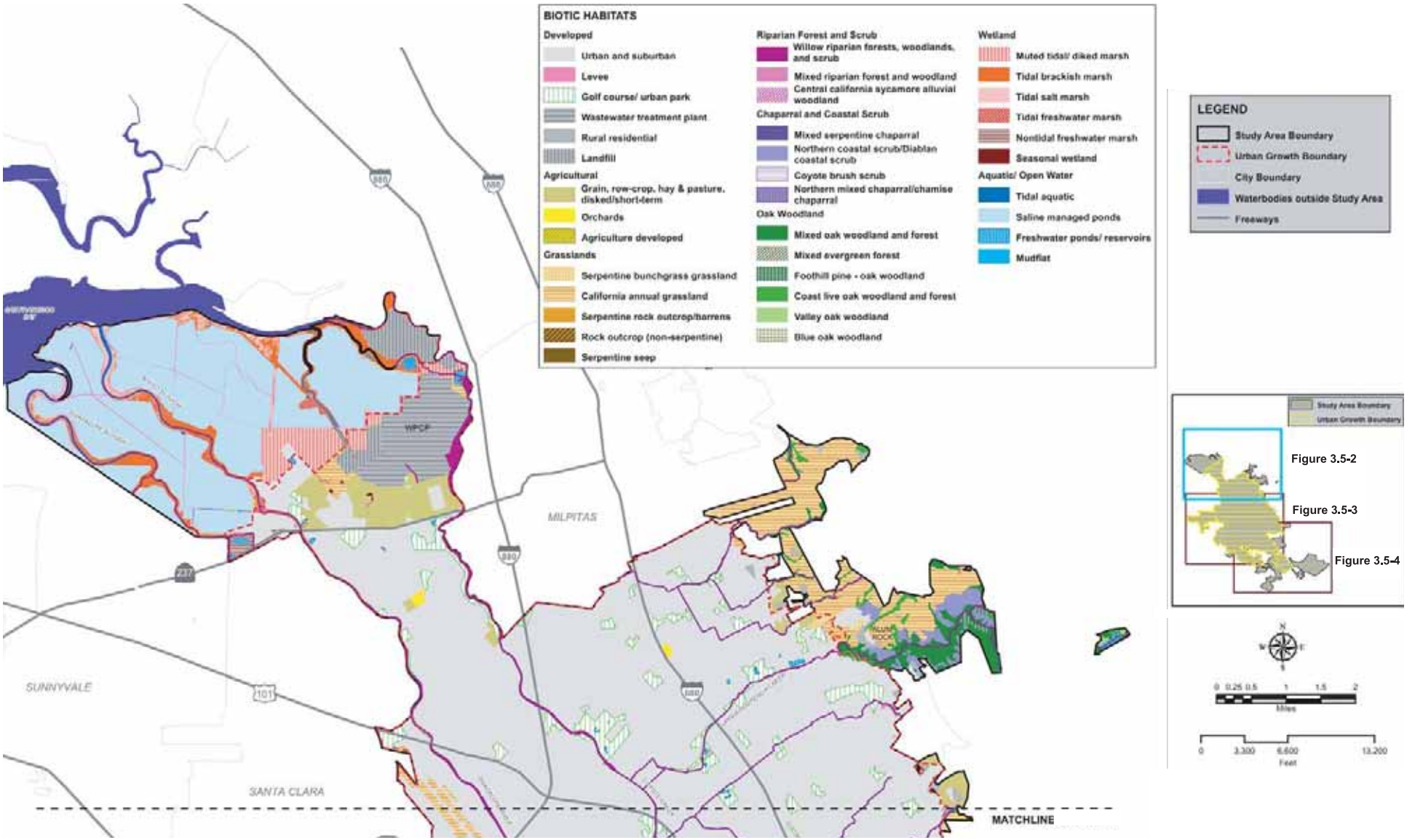
GENERALIZED HABITAT MAP

FIGURE 3.5-1

Table 3.5-1
Biotic Habitats within the City Limits

Natural Community/Land Use and Biotic Habitat		Acreage*	Percent of Total
Developed		**83,331**	**68%**
	Urban and suburban	73,605	60%
	Golf course/ urban park	6,672	5%
	Rural residential	1,069	<1%
	Wastewater Treatment Plant	960	<1%
	Landfill	720	<1%
	Levees	305	<1%
Agricultural		**5,810**	**5%**
	Grain, row-crop, hay & pasture, disked/short-term	5,290	4%
	Orchards	440	<1%
	Agriculture developed	79	<1%
Grasslands		**11,378**	**9%**
	California annual grassland	5,921	5%
	Serpentine bunchgrass grassland	5,311	4%
	Serpentine rock outcrop/barrens	125	<1%
	Rock outcrop (non-serpentine)	15	<1%
	Serpentine seep	5	<1%
Riparian Forest and Scrub		**2,065**	**2%**
	Willow riparian forests, woodlands, and scrub	1,183	1%
	Mixed riparian forest and woodland	835	<1%
	Central California sycamore alluvial woodland	47	<1%
Chaparral and Coastal Scrub		**1,861**	**2%**
	Mixed serpentine chaparral	924	<1%
	Northern coastal scrub/Diablan coastal scrub	673	<1%
	Northern mixed chaparral/chamise chaparral	219	<1%
	Coyote brush scrub	44	<1%
Oak Woodland		**8,463**	**7%**
	Mixed oak woodland and forest	5,249	4%
	Coast live oak woodland and forest	1,369	1%
	Valley oak woodland	775	<1%
	Blue oak woodland	505	<1%
	Foothill Pine – Oak Woodland	444	<1%
	Mixed Evergreen Forest	120	<1%
Wetland		**1,738**	**1%**
	Tidal brackish marsh	524	<1%
	Muted tidal/diked marsh	521	<1%
	Tidal salt marsh	287	<1%
	Tidal freshwater marsh	212	<1%
	Non-tidal freshwater marsh	123	<1%
	Seasonal wetland	72	<1%
Aquatic/Open Water		**7,102**	**6%**
	Saline managed ponds	5,519	5%
	Freshwater Ponds/Reservoirs	1,315	1%
	Mudflat	135	<1%
	Tidal aquatic	133	<1%
Total		**121,747**	**100%**

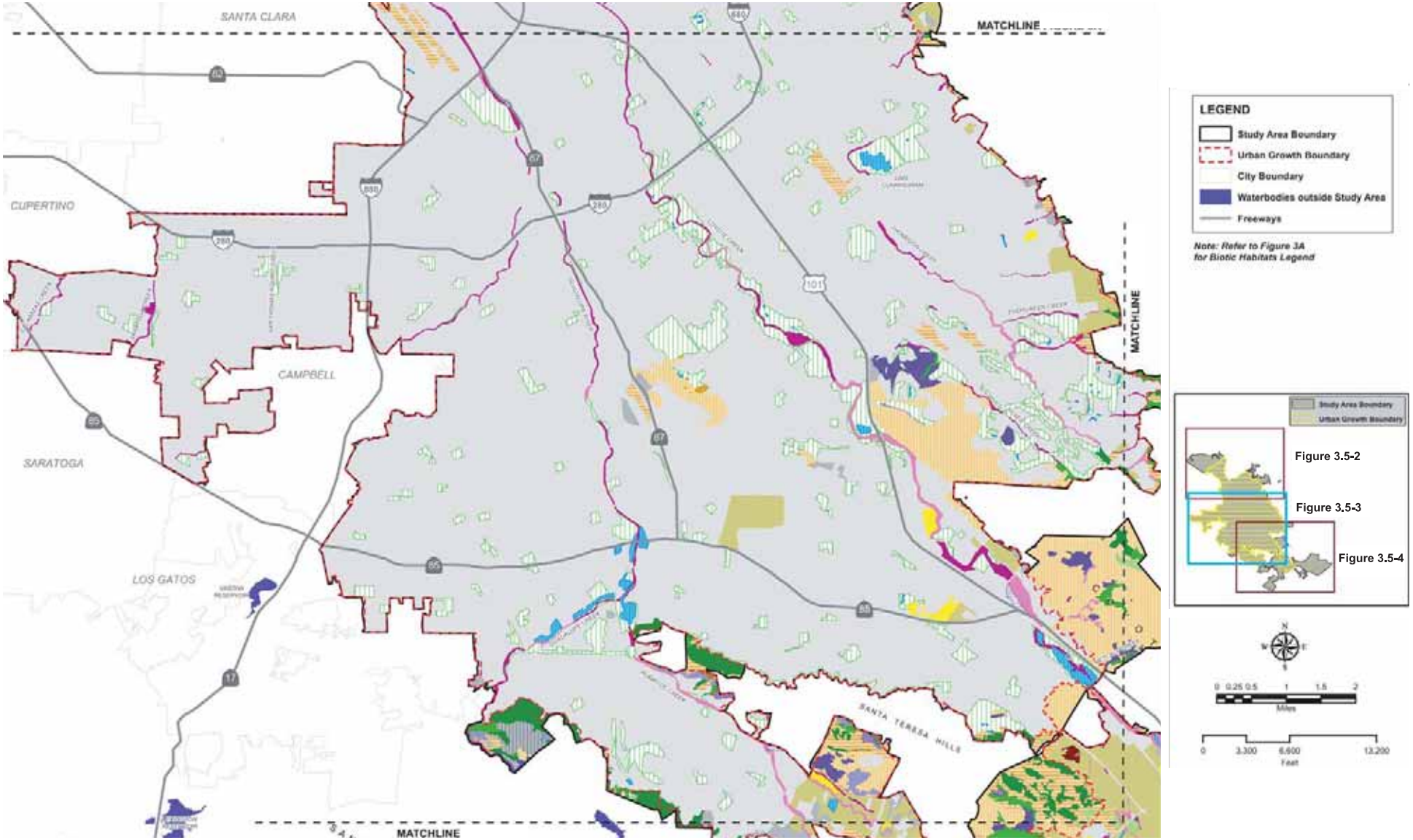
Note: Due to rounding, the total acreage within several of the natural community/land use categories is one acre higher than the sum of the biotic habitats within that category.



Source: H.T. Harvey & Associates and City of San José (August 2010).

BIOTIC HABITATS IN NORTHERN SAN JOSE

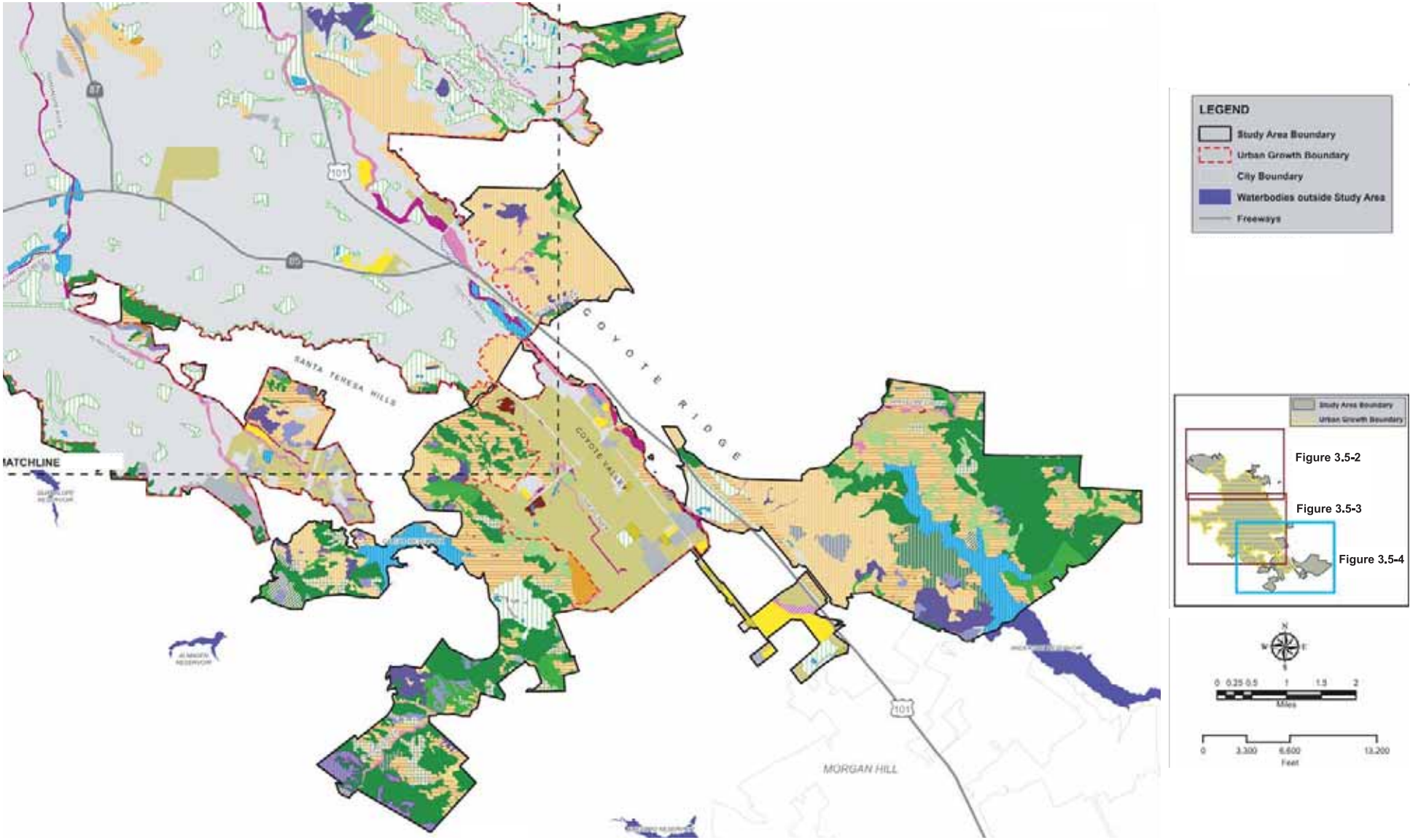
FIGURE 3.5-2



Source: H.T. Harvey & Associates and City of San José (August 2010).

BIOTIC HABITATS IN CENTRAL SAN JOSE

FIGURE 3.5-3



Source: H.T. Harvey & Associates and City of San José (August 2010).

BIOTIC HABITATS IN SOUTHERN SAN JOSE

FIGURE 3.5-4

Developed habitat types differ widely in the amount and types of plant species that they support. Some areas are fully developed areas barren of vegetation, such as portions of industrial or commercial sites, completely paved, high-density urban housing, landfills or water or wastewater treatment plants. Other areas, although not "natural", are largely vegetated, ranging from rural residential to golf courses to urban parks. Golf courses, urban parks, and suburban gardens are typically landscaped with ornamental vegetation, whereas rural residential development areas may be planted in agricultural or ornamental plant species, or may remain in a relatively natural state dominated by oak woodland or annual grassland habitat. Depending on hydrology and substrate, engineered levees can be unvegetated (with gravel tops and rock slope protection), vegetated with weedy upland species, or they may support salt marsh species along their lower and middle slopes.

Developed or landscaped habitats typically support a suite of relatively common wildlife species that are tolerant of periodic human disturbance. Some of the most abundant species in developed habitats, such as the European starling, rock pigeon, house sparrow, Virginia opossum, house mouse, eastern gray squirrel, fox squirrel, Norway rat, and black rat are non-native species that are well adapted to the cover, nesting/denning, and foraging conditions provided by developed areas. In addition, a number of native species have adapted to these conditions. Native bird species commonly found in developed habitats in San José include the house finch, northern mockingbird, Anna's hummingbird, and California towhee. Native mammals such as the deer mouse, raccoon, and striped skunk utilize these developed areas as well. Bridges, unoccupied buildings and/or large trees in developed areas also provide important nesting and roosting sites for some species of birds and bats, such as black phoebe, swallows, white-throated swift, Yuma myotis, Brazilian free-tailed bat and big brown bat.

Agricultural

Farmed land, including orchards, row crops, developed agriculture, grain, hay, pasture, and disked/short-term fallow agricultural habitat types occur mostly in the southern portion of San José in and south of Coyote Valley, west of the Santa Teresa Hills in the Almaden Valley lowlands, and on the Water Pollution Control Plant (WPCP) buffer lands. No vineyard habitat is mapped within the City limits. Soils in most croplands are routinely disked or maintained and are typically devoid of any vegetation but the cover crop. In some cases, ruderal, fast-growing species such as ripgut brome and black mustard occur on the fringes of these habitat types or in fallow fields, but are frequently sprayed or mowed prior to flowering.

Intensively cultivated agricultural lands in San José support relatively few wildlife species due to the frequent disturbance associated with farming, the low stature of the crops produced in most of these areas, and the lack of structural diversity in the vegetation in these areas. Rodent control is practiced throughout many of the orchards and agricultural fields where crops are grown, reducing the abundance of small mammals and the suitability of these fields as foraging habitat for raptors and larger mammals that prey on smaller mammals.

Nevertheless, the infrequency of human presence and heterogeneity of habitats in some agricultural areas results in fairly heavy wildlife use, at least by some species. Some California ground squirrel and valley pocket gopher burrows occur along margins of croplands and orchards within the City limits, and raptors such as red-tailed hawks, American kestrels, and white-tailed kites forage at the edges of fields and orchards. Gopher snakes, racers, and western fence lizards are among the reptiles that forage at the edges of agricultural lands.

The De Anza College Wildlife Corridor Stewardship Team (unpublished data) has documented wildlife use in Coyote Valley since 2007, conducting raptor censuses and avian point count surveys and documenting the occurrence of mammals in the area. The Stewardship Team's surveys have documented relatively high abundance of raptors, including golden eagles, bald eagles, ferruginous hawks, and northern harriers, as well as several short-eared owls foraging in agricultural fields. A number of pairs of red-tailed and red-shouldered hawks, American kestrels, and white-tailed kites nest in trees interspersed among these fields. Monitoring of mammal activity in Coyote Valley has also documented the occurrence of coyote, black-tailed deer, American badger, raccoon, bobcat, and other species foraging in and moving through agricultural fields in the Valley.

Grasslands

The vegetation of grassland communities is dominated by grasses and forbs with less than 10 percent cover by tree and shrub species. California annual grassland, serpentine bunchgrass grassland, serpentine rock outcrop/barrens, serpentine seep, and rock outcrop (non-serpentine) are grassland habitat types that were identified within the City limits. California annual grasslands, characterized in large part by a high percentage cover of introduced Mediterranean species, is one of the most common natural habitat areas, comprising five (5) percent of the area within the City limits. Typical plant species found in California annual grasslands are introduced grasses such as bromes, wild oats, and barley. While many native California forbs and bunchgrasses are found in these biotic communities, tall, non-native grasses usually out-compete and shade-out native species in the absence of managed grazing regimes.

Wildlife use of grasslands in the San José area is limited by human disturbance, the limited extent of these habitats in a given area, and isolation of grassland habitat remnants from more extensive grasslands. As a result, some of the wildlife species associated with extensive grasslands, such as grasshopper sparrows, breeding Bryant's savannah sparrows, and western meadowlarks are absent from small patches of grassland within the urban matrix. However, much of the grassland around the periphery of the City limits is contiguous with larger expanses of grassy open space, and thus provides higher-quality habitat for grassland-associated wildlife species.

California ground squirrels, where they are present, are an important component of these grassland communities, providing a prey base for diurnal raptors and terrestrial predators. The burrows of California ground squirrels also provide refugia for several special-status wildlife species, such as the burrowing owl and the California tiger salamander. Other rodent species that are likely present in grassland habitats include the California vole, valley pocket gopher, and deer mouse. Diurnal raptors such as red-tailed hawks, northern harriers, white-tailed kites, and American kestrels forage for these small mammals over grasslands during the day, and at night nocturnal raptors, such as barn owls, will forage for nocturnal rodents, such as deer mice. Loggerhead shrikes forage in grassland habitats for insects and other prey.

Open grassland habitat with bare ground is important foraging habitat for the pallid bat and Brazilian free-tailed bat. Mammals such as the coyote, black-tailed jackrabbit, and striped skunk utilize grassland habitats within the City limits for foraging. Reptiles such as western fence lizards, western skinks, western terrestrial garter snakes, gopher snakes, racers, western rattlesnakes, common kingsnakes, and southern alligator lizards also frequent these habitats.

Serpentine Bunchgrass – a Sensitive Grassland Habitat

Serpentine bunchgrass communities are the second most extensive grassland habitat within the City limits, occurring in the Silver Creek Hills at the north end of Coyote Ridge, on Communications Hill, to the west of Anderson Reservoir, to the north and west of Calero Reservoir, and in the Santa Teresa Hills in the southwest. There is also one small patch of serpentine bunchgrass habitat located in the northeastern portion of San José, north of Alum Rock and south of Suncrest Avenue (refer to Figures 3.5-2, 3.5-3 and 3.5-4). Serpentine bunchgrass grasslands are considered a sensitive vegetation community by CDFG.[55]

These serpentine grasslands are highly infertile because of their extremely high levels of magnesium, chromium, and nickel, low concentrations of nutrients such as calcium and nitrogen, and low water-holding capacity. A unique group of vascular plant species, which can tolerate the relatively high magnesium to calcium ratio, has evolved in response to these conditions. Many exotic species in California, including the non-native grasses that have invaded much of the non-serpentine grasslands in the state, are not able to tolerate, or at least do not thrive in, the extremely dry conditions and infertility of serpentine soils. Serpentine grasslands support high-quality native plant communities, including rare plants such as the federally listed Santa Clara Valley dudleya and Metcalf Canyon jewel-flower (see *Special-Status Plant Species* below). Several invertebrate species, including the federally threatened Bay checkerspot butterfly, also depend on serpentine grasslands because their host food plants are found primarily in these habitats.

Serpentine seeps found within serpentine grassland are small wetlands that typically lack woody vegetation and are fed by small springs or creeks supported by groundwater. Several serpentine seeps occur in the Santa Teresa Hills and in the Silver Creek Hills on northern Coyote Ridge, just to the southeast of the City limits. A number of the serpentine seeps within the City limits support the special-status Mt. Hamilton thistle; this is the only habitat type in which this species occurs.

Riparian Forest and Scrub

Riparian communities immediately border permanent and ephemeral waterways and support an array of vegetation adapted to permanent or semi-permanent water sources. The three major types of riparian forest and scrub communities that occur within the City limits of San José are willow riparian forests, woodlands, and scrub; mixed riparian forest and woodland; and central California sycamore alluvial woodland.

Within San José, most riparian habitat is surrounded by development and has been degraded by a variety of urban activities. In some areas, channels are lined with concrete, riprap, or gabions[56] and are channelized (*e.g.*, Guadalupe River near Capitol Expressway). Although native trees dominate most riparian woodlands and forests within the City limits, non-natives abound as well, and exotic species such as eucalyptus, giant reed, tree-of-heaven, elms, and others occur frequently in these riparian systems. Riparian habitat has been protected, and in many areas restored (particularly along the larger streams such as Coyote Creek and the Guadalupe River) by the Santa Clara Valley Water District (SCVWD) and others.

[55] Source: California Department of Fish and Game. *Vegetation Classification and Mapping Program List of California Vegetation Alliances and Rarity Ranking.* 2007.
[56] A gabion is a rock-filled basket generally used for slope protection and erosion control.

Riparian habitats in California generally support exceptionally rich animal communities and even though they are a limited amount of the land cover (approximately two percent of the area within the San José City limits), these habitats contribute a disproportionately high amount to landscape-level wildlife species diversity. The presence of year-round water and abundant invertebrates provide foraging opportunities for many species, and the diverse habitat structure provides cover and nesting opportunities. The heavily urbanized setting of San José limits the value of these habitats somewhat due to the long history of human disturbance, isolation, and other urban-associated pressures on wildlife populations found in these habitats. As a result, riparian habitats are restricted to narrow corridors along streams, and many reaches of streams support little or no woody vegetation. Nonetheless, the riparian corridors in San José do provide important habitats for many wildlife species in the region, and support the most diverse bird communities.[57]

Among the numerous species of birds that use riparian habitats in San José for breeding are the Pacific-slope flycatcher, black-headed grosbeak, warbling vireo, yellow warbler, and black-chinned hummingbird. Raptors, such as red-shouldered hawks and Cooper's hawks, nest within riparian corridors and forage in adjacent habitats. Riparian habitats are also used heavily by migrants and wintering birds.

Several species of reptiles and amphibians occur in riparian corridors within San José. Leaf litter, downed tree branches, and fallen logs provide cover for the arboreal salamander, western toad, and Pacific treefrog. Several lizards may also occur here, including the western fence lizard, western skink, and southern alligator lizard. Small mammals such as the ornate shrew, California vole, and Audubon's cottontail use these riparian habitats. San Francisco dusky-footed woodrats occur, often at high densities, in riparian habitats in less developed areas, such as in Coyote Valley, but are absent from most heavily urbanized streams. Medium-sized mammals such as the raccoon, striped skunk, and non-native opossum are also common, urban-adapted species present in this riparian habitat. Non-natives such as the opossum, eastern fox squirrel, Norway rat, and feral cat may harass, compete with, or depredate eggs and young of native birds and small mammals, reducing the quality of this habitat for native riparian wildlife species.

The aquatic habitats within streams in San José were included within areas mapped as riparian. These aquatic habitats support several species of native fishes, such as the California roach, Sacramento sucker, and sculpins, as well as non-native fishes such as mosquitofish, bluegill, and inland silverside. The federally threatened Central California Coast steelhead (*Oncorhynchus mykiss*) and the Fall-run Chinook salmon (*Oncorhynchus tshawytscha*) are anadromous fish that spawn in several of these streams, such as Coyote Creek, Upper Penitencia Creek, the Guadalupe River, and Los Gatos Creek.[58] Amphibians such as the western toad, Pacific treefrog, and the non-native bullfrog are also present in these creeks. The native western pond turtle and several species of non-native turtles that have been released from captivity are present in low numbers in some reaches of these streams. Waterbirds such as the mallard, green heron, great egret, and belted kingfisher forage in these waters. Bats, including the Yuma bat and big brown bat, forage aerially on insects over these streams.

[57] Rottenborn, S. C. *The impacts of urbanization on riparian bird communities in central California*. Unpublished Ph.D. dissertation, Stanford University. 1997.
[58] Santa Clara Valley Water District. *Fish Functions and Values Analysis 2006*. 2007. Available at: <http://scv-habitatplan.org/www/site/alias__default/documents_science_advisors_report/336/science_advisors_report.aspx.>

California Sycamore Alluvial Woodland - a Sensitive Riparian Habitat

Central California sycamore alluvial woodland is considered a sensitive vegetation community by CDFG.[59] This habitat occurs on broad valley floors along low, braided riparian channels. Sycamore alluvial woodland stands have an open canopy dominated by California sycamore, often interspersed with white alder and willows. Winter flows typically scour the understory vegetation each season, and as such, herbaceous vegetation is spare and patchy. Central California sycamore alluvial woodland occupies only 47 acres within the City, all located in the southwestern reaches of Coyote Valley along Coyote Creek and outside of the City's UGB (refer to Figure 3.5-3).

Chaparral and Scrub

Within the City limits, chaparral and scrub communities are found in the Silver Creek Hills at the northern end of Coyote Ridge, to the southwest of Anderson Reservoir, in the Santa Cruz Mountain foothills near Llagas Creek, and in the Santa Teresa Hills. Only limited areas of these communities occur within the City's UGB, primarily in the Evergreen Planning Area in the Silver Creek Hills. Chaparral and coastal scrub communities are characterized by drought-tolerant, shrub-dominated landscapes that are exposed to intense sunlight. These habitat types form dense stands of shrubs with little understory and are prone to intense and regular fire cycles. However, after a fire event, these habitat types recover quickly and support extraordinary blooms of annual forbs adapted to fire in the understory. Typical species found in these communities are chamise, sage, manzanita, ceanothus, and scrub oak. Chaparral and coastal scrub communities include four habitat types: northern mixed chaparral/chamise chaparral, mixed serpentine chaparral, northern coastal scrub/Diablan coastal scrub, and coyote brush scrub.

Because chaparral and coastal scrub habitats are typically dry and provide relatively low and homogeneous structure, wildlife species diversity in these areas is often fairly low. Also, because the areas where these habitats occur within the City limits are small and often surrounded by other habitat types, such as annual grassland and oak woodland, wildlife utilization of these areas is largely determined by adjacent habitats. Nevertheless, a number of animal species occur in these habitats.

Amphibians are usually absent or scarce in these habitats due to their very dry conditions, and many other wildlife species occurring here either derive moisture directly from food or synthesize their water metabolically from seeds (e.g., the California pocket mouse). Mammals that use chaparral and coastal scrub habitats for cover include the coyote, bobcat, and brush rabbit, among others. Nests of San Francisco dusky-footed woodrats are often present where oaks and/or poison oak are mixed with coyote brush scrub. California mice, which occupy woodrat nests, are also present. Bird species that nest in chaparral and coastal scrub habitats include the California thrasher, California towhee, spotted towhee, California quail, wrentit, loggerhead shrike, lesser goldfinch, and Anna's hummingbird. Rufous-crowned sparrows often nest where these habitats are dominated by California sagebrush. Reptiles that occur in these habitats include the gopher snake, western rattlesnake, southern alligator lizard, striped racer, and western fence lizard.

Oak Woodland

Oak woodland communities in the South Bay typically occur at elevations from 300 to 3500 feet and are characterized by native California oak trees sparsely distributed within a relatively open

[59] California Department of Fish and Game. *Vegetation Classification and Mapping Program List of California Vegetation Alliances and Rarity Ranking*. 2007.

savannah/grassland. Oak woodlands are present at the urban edge of the City's UGB in the Evergreen and Almaden Planning Areas. Representative understory plants are weedy annual grasses, some native and introduced forbs, and occasional shrubs such as toyon, California coffeeberry, and common snowberry.

Many of the oak woodland habitats within the City limits and/or UGB have been fragmented by urban and suburban land uses. Nevertheless, they still support many of the common oak-associated wildlife species in the region. The western scrub-jay, acorn woodpecker, oak titmouse, Nuttall's woodpecker, chestnut-backed chickadee, spotted towhee, and white-breasted nuthatch are year-round residents in oak woodlands. Dusky-footed woodrats are also frequently found in oak woodlands. The deer mouse, California mouse, and the introduced eastern gray squirrel nest and forage in this habitat as well. Reptiles found in adjacent grassland and scrub habitats also occur regularly in oak woodland habitats. Bats, such as the pallid bat, may use hollows of larger, older oak trees for roosting in open-canopy oak woodland. The California myotis and long-eared myotis may occur in areas of oak woodland with a closed canopy.

Valley Oak Woodland – a Sensitive Natural Community

The CDFG considers valley oak woodland to be a sensitive vegetation community.[60] Valley oak woodland habitat occurs primarily on valley bottoms with easy access to groundwater. There are typically no other tree species present. Poison oak, California rose, and coyote brush occur sparsely within the understory. Within the City limits, valley oak woodland is found in the Coyote Valley area, along northern portions of Coyote Ridge, and in patches surrounding Anderson Reservoir.

Wetland

Throughout the past century, wetlands have been drained, filled, and diked for development, farming, and landfill use throughout the South San Francisco Bay and surrounding areas. These wetlands have been converted over time to more developed habitat types, from vast areas of urbanized land and drainages lined with concrete culverts to diked marsh protected by extensive levee systems. This has led to a rapid decline in these natural communities and the species that they support. All wetland communities are considered to be sensitive habitats due to this significant historical and on-going loss. Six wetland biotic habitats are found within the City limits: seasonal wetland, muted tidal/diked marsh, tidal salt marsh, tidal brackish marsh, tidal freshwater marsh, and non-tidal freshwater marsh.

Wetland-associated wildlife communities vary considerably depending on salinity, dominant plant species, and hydrology (e.g., duration and depth of ponding). *Tidal Brackish Marsh* habitat occurs in the upper intertidal reaches of sloughs and creeks draining into the Bay where vegetation is subject to tidal inundation diluted by freshwater flows from upstream. Within the City limits, tidal brackish/ freshwater marsh occurs only in limited areas along the tidal reaches of San Tomas Aquino Creek, the Guadalupe River/Alviso Slough near Alviso, middle reaches of Artesian Slough, and downstream reaches of Coyote Creek, all near San Francisco Bay. *Muted Tidal/Diked Salt Marsh* occurs outside the City's UGB in the northern portion of the City, north and west of the San José-Santa Clara Water Pollution Control Plant (WPCP) and landfill areas bordering the Bay. The muted tidal and diked salt marshes within the City limits provide important habitat for waterbirds. *Tidal Salt Marsh* occurs primarily along the outboard (tidal) side of the levees that separate managed saline ponds from San Francisco Bay. Tidal marshes within the City limits and the South Bay are remnants of their former

[60] Source: California Department of Fish and Game. *Vegetation Classification and Mapping Program List of California Vegetation Alliances and Rarity Ranking.* 2007.

extent, but support high densities of many wildlife species including several species that are endemic to San Francisco Bay. The state and federally endangered salt marsh harvest mouse and California clapper rail are found in tidal salt marsh habitats. Alameda song sparrows and savannah sparrows also nest in tidal marshes. *Tidal Freshwater Marsh* occurs in the upper reaches of tidal portions of Coyote Creek, Artesian Slough, Alviso Slough, and Guadalupe Slough where it transitions from tidal brackish marsh. Tidal freshwater marshes are typically only exposed to tidal influence during very high, spring tides, and for the rest of the year only convey freshwater from upstream reaches in the foothills and valley floor. Such marshes are hydrologically dynamic, and the water-surface elevation can vary by as much as ten feet depending on daily tidal activity and seasonal, freshwater flows from upstream.

Non-tidal Freshwater Marsh habitats are present primarily where perennial or near-perennial inundation by shallow, fresh water occurs in an open (i.e., not wooded) environment. Within the City limits, freshwater marsh habitat is present primarily in Coyote Valley and at a marsh restoration site north of State Route 237 between San Tomas Aquino and Calabazas Creeks. Smaller patches of freshwater marsh habitat not visible on the habitat maps occur along and within a number of streams. *Seasonal Wetland* is another freshwater habitat. Seasonal wetland habitat in the City primarily occurs within the Coyote Valley and in several locations in the Alviso area on the WPCP buffer lands. In addition, there are numerous small seasonal wetlands within agricultural lands, particularly in the Coyote Valley. These wetlands form during the rainy season because of underlying clay hardpan layers that prevent water from percolating into the ground water system. Wildlife use of seasonal wetlands depends largely on the duration and depth of ponding of the wetlands, the extent of open water, and the structure and type of emergent vegetation that is present.

Aquatic/Open Water

Aquatic or open water habitats are permanently or semi-permanently flooded, and support less than five percent vegetation in emergent or submerged states. The largest area of aquatic or open water habitats within the City limits are the *Saline Managed Ponds*, outside of the City's UGB (refer to Figure 3.5-1). They consist of active and inactive saline managed ponds originally created for salt production and commonly referred to as salt ponds. Most of the saline managed ponds within the City limits, typically referred to as the "Alviso Salt Ponds", are inactive, because they have been taken out of salt production in order to restore habitat that is more natural over time. However, these areas are still managed to achieve specific salinity and hydrologic circulation regimes. Management focuses primarily on meeting discharge requirements for salinity and dissolved oxygen and for selected habitat goals and conditions (e.g., shallow water for shorebirds, deeper water for waterfowl and diving birds) when this is feasible while still meeting water quality requirements. Generally, saline managed ponds contain expanses of non-tidal, highly saline open water, along with areas of bare mudflats, and are surrounded by mostly barren levees. Vegetation is sparse due to the high salinity levels, and where it does occur, it is limited primarily to levees. Thus, saline managed ponds provide little to no cover for small mammals or reptiles, and provide nesting habitat only for species that nest on the bare levees and the occasional islands that have been created (by breaching of levees or deposition of material dredged from borrow ditches) within the ponds.

Open water surfaces in San José consist of isolated ponds, canals/ditches, and two small reservoirs, as well as percolation ponds, also referred to as off-stream groundwater recharge ponds (refer to Figures 3.5-1, 3.5-2, 3.5-3 and 3.5-4). Very few naturally occurring ponds exist within the City. Laguna Seca, located at the north end of Coyote Valley, is the most obvious example of a natural pond that still remains, although it is in an altered condition. There are a number of man-made

ponds, including stock ponds or ornamental ponds associated with golf courses and parks that occur within the City limits. Waterbodies within the UGB include reservoirs such as Almaden Lake, the Parkway Lakes, Lake Cunningham, and percolation ponds along Guadalupe Creek and Coyote Creek. Reservoirs or man-made ponds outside the UGB and within the City limits include Cherry Flats Reservoir near Alum Rock Park, Calero Reservoir, portions of Anderson Reservoir and the Coyote Creek Reach 1A pond along lower Coyote Creek, which was created and is managed specifically for waterbird use.

A number of fish and amphibian species use the aquatic habitats in the City. Those listed previously as occurring within streams and rivers (see *Riparian Forest and Scrub* above) also occur in the instream ponds, such as Almaden Lake and the Parkway Lakes. Most of the fish occurring in off-channel ponds and lakes are non-natives, such as the green sunfish, mosquitofish, and golden shiner. Lake Cunningham is stocked with rainbow trout and channel catfish, and also contains bass, common carp, sunfish, and bluegill.[61] Since the late 1990s, small heron rookeries have become established on islands in inland reservoirs in the South Bay (e.g., Lake Cunningham and Almaden Lake); these herons and egrets forage largely on fish in these waterbodies. Amphibian species that breed in ponds and reservoirs throughout the area include the Pacific treefrog, the bullfrog, and the western toad. Western pond turtles are known to occur in ponds on the Santa Teresa Golf Course, in Almaden Reservoir, in Calero Reservoir, and in other small ponds. California tiger salamanders are known to breed in several ponds in the southern part of the City (generally outside the UGB), and near Communications Hill, where upland aestivation habitat is available and non-native aquatic predators such as bullfrogs, green sunfish, mosquitofish, and crayfish are absent. California red-legged frogs may also occur in pond habitats and along streams at the periphery of the City limits, but they have apparently been extirpated from the Santa Clara Valley floor. A variety of mammals come to ponds and reservoirs to drink, and non-native muskrats occur regularly in some areas.

Other aquatic habitats include *Mudflats* and *Tidal Aquatic* in the northernmost area of the City. The tidal sloughs and channels in the Alviso area, including Guadalupe Slough, Artesian Slough, and Alviso Slough, provide important habitat for large numbers of invertebrates and fish. These channels, which are rich in detritus, serve as important nurseries and feeding areas for estuarine fish species, and for the California bay shrimp. Approximately 135 acres of intertidal mudflat habitat are found within the City limits but outside the City's UGB in the sloughs and below marshes in the Don Edwards National Wildlife Refuge. Mudflats are generally covered by shallow water during high tide, and are exposed during low tides. These are dynamic depositional features, changing in extent and location depending on erosion and deposition of sediments. This habitat typically supports less than 10 percent cover of emergent vegetation, typically in the form of cordgrass and annual pickleweed that is too sparse to map as distinct salt marsh habitat. Mudflats located on the bayside of ponds in the Alviso area provide important habitat for resident and migratory bird populations, as well as for fishes and invertebrates. Approximately 133 acres of tidal aquatic habitat is present along downstream reaches of Coyote Creek where it meets the Bay, Guadalupe Slough, Artesian Slough, and Alviso Slough, although most tidal aquatic habitat within San Francisco Bay is outside of the City limits. Such areas have fully tidal estuarine influence and are too deep to support low tidal salt marsh and cordgrass species. Wildlife in these areas is somewhat similar to that described above in the mudflats section (mudflats are regularly inundated with tidal waters), but these habitats are not exposed, even during very low tides and are utilized differently by wildlife.

[61] Source: Geocities. "Fishing Bytes". Available at: <http://www.geocities.com/lakecunninghamregionalpark/fishingx/fishing.htm.> Accessed March 9, 2009.

3.5.1.2 *Native Fish and Wildlife Movement*

Overview

Wildlife movement takes many forms, and is different for the various types of species associated with lands in the City of San José. Bird and bat species move readily over the landscape, foraging over and within both natural lands and landscaped areas of the City. Fish species move along the stream corridors, some as residents, some as anadromous[62] species migrating upstream into streams for spawning and rearing and downstream to marine foraging areas. Mammals of different species move within their home ranges, but also disperse between patches of high-quality habitat. Generally, reptiles and amphibians similarly settle within home ranges, sometimes moving to central breeding areas, upland refugia, or places where they hibernate in a predictable manner, but also dispersing to new areas. Some species, especially among the birds and bats, are migratory, moving into or through the City during specific seasons. Aside from bats, there are no other mammal species in the vicinity of the City that are truly migratory.[63]

For large mammals with the ability to move long distances in short periods of time (e.g., over a single night), a corridor can be relatively narrow if it supports good cover and suitable habitat exists on both ends of the corridor. For smaller animals, dispersal may take much longer, and the success of dispersal depends upon suitable habitat that provides food and shelter. In other cases, animals within the corridor are within home ranges, and individual animals may never move the entire distance between larger patches of core habitat; rather, smaller local movements and breeding activities allow for genetic exchange between more distant populations over time. The width of corridors necessary to maintain habitat connectivity between two core habitat areas depends on a number of factors, including the length of the corridor, habitat quality within the corridor, and the species in question. However, there is very little information on the specific minimum widths of corridors necessary for maintaining connectivity for individual species. For mountain lions in southern California, it has been estimated that juveniles required corridors at least 0.25 miles wide if the corridors were more than 0.62 miles long.[64] Others have suggested corridor widths of 1.2 miles or more.[65]

The following general overview on wildlife movement within the City limits focuses on existing conditions where future growth may either impede the kinds of movements discussed above, or areas where movement can be enhanced through planning and policies. As a result, the following sections focus on wildlife movement through relatively undeveloped portions of San José that link larger areas providing core habitat for wildlife. Some relatively natural areas, such as the land within the City limits located at the northern end of Anderson Reservoir, on Coyote Ridge, west of Calero Reservoir, and along upper Llagas Creek, represent relatively small components of much more extensive core habitat areas rather than providing linkages or corridors between core habitat areas. Although wildlife species certainly move through such core areas, the discussion that follows focuses

[62] Anadromous fish migrate from the sea to fresh water to reproduce.
[63] Introduced tule elk, which occur on Coyote Ridge, around Anderson Reservoir, and in areas east of the City limits, disperse through portions of the City, and black-tailed deer shift habitat use somewhat between the breeding and calving seasons. The young of many mammal species disperse from their natal home ranges, sometimes moving over relatively long distances, in search of new areas to establish themselves within home ranges.
[64] Source: Beier, P. *Dispersal of Juvenile Cougars in Fragmented Habitat*. Journal of Wildlife Management 59:228-237. 1995.
[65] Source: South Coast Wildlands. *South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion.* Produced in cooperation with partners in the South Coast Missing Linkages Initiative. 2008.

instead on areas that provide relatively natural habitat closer to areas of existing or proposed urban development.

Movement Along Streams and Riparian Corridors

Major streams and associated riparian habitat corridors extending through the City include Coyote Creek, the Guadalupe River, and their tributaries. Both major waterways support anadromous fish runs, and have been identified as important landscape linkages.[66] Habitat along riparian corridors is also useful for migrating birds, which cue on the corridor during their movements and stop to rest and forage in riparian woodlands along these streams. Areas within the urban setting support a suite of medium-sized (e.g., raccoons, skunks, and opossums) and small mammals (e.g., California voles, pocket gophers, and house mice). In the more suburban areas of the City (e.g., Almaden Valley and Evergreen Valley), larger mammals such as black-tailed deer are common and move along riparian corridors and out into residential areas. The stream and riparian corridors in the rural residential, agricultural, and grassland areas within the City limits are rich habitats for wildlife, supporting dozens of species of mammals, reptiles, and amphibians and hundreds of species of birds. They are important corridors of movement, especially in areas such as the Coyote Valley where these intact linear habitats can connect broader open space preserves, as described below.

Wildlife Movement in Alviso

Remaining open space within Alviso consists of the agricultural lands and fields of the WPCP buffer lands, and the fringes of the managed pond complexes, as well as a few other smaller parcels. The WPCP buffer lands, while supporting native wildlife, do not function as a major movement corridor, based on an assessment of the habitats adjoining the buffer lands (which are largely developed) and species habitat preferences. In addition to the riparian corridors that border Alviso, one important movement corridor has long been recognized in this area. It consists of the non-tidal salt marshes at the City's fringe that connect a major population center for the endangered salt marsh harvest mouse in New Chicago Marsh with the marshes of Coyote Creek. The Coyote Creek Flood Control Project designed in the 1980s included a managed site for this species; this muted tidal salt marsh, coupled with marsh restoration at the north end of the Zanker Road Landfill, and City and WPCP property along the southern edge of Pond A-18 all comprise a corridor for dispersal for the salt marsh harvest mouse. Without that corridor, the population south of Coyote Creek would be effectively isolated from areas north of the creek. Within the Don Edwards San Francisco Bay National Wildlife Refuge, the recently designed portion of the South Bay Salt Pond Restoration Project incorporates a shoreline levee with a broad transition zone specifically to ensure connectivity for this species.

Wildlife Movement in Evergreen

Within the City's UGB, the remaining undeveloped parcels in the Evergreen area are primarily grasslands at the base of the foothills. Within the City limits, the largest open habitat areas are east of the Evergreen Valley at the base of the Diablo Range and south of the developed areas of the Evergreen Planning Area at the northern tip of Coyote Ridge. Animals are resident in these grasslands and those with larger home ranges may move into the grasslands during foraging. Historically, movement across the Evergreen Valley, between Coyote Ridge and the Diablo Range foothills to the north, occurred regularly. However, the Evergreen Valley is now almost entirely

[66] ICF Jones & Stokes. *Santa Clara Valley Habitat Plan 2nd Administrative Draft*. Prepared for the County of Santa Clara Planning Office. June 2009. Available at: <http://www.scv-habitatplan.org/www/site/alias__default/documents_draft_hcp_chapters/292/draft_hcp_chapters.aspx.>.

developed, precluding use by wildlife not adapted to urban/suburban habitats. There are no longer avenues for broad-scale wildlife movement through the Evergreen Valley area due to the presence of development.

Black-tailed deer, grey foxes, coyotes, and other mammals from surrounding, relatively undeveloped areas still move into the Evergreen Valley and lower foothill area in small numbers. Thompson Creek and minor tributaries flow the length of the Evergreen Valley and provide avenues for dispersal of animals into the surrounding development. However, such movement would occur primarily along the creek, and no suitable corridors connecting two or more open space areas are present in the Evergreen Valley area. As a result, most wildlife species are not expected to make regular movements through the developed Evergreen Valley. The existing Evergreen Valley area as a whole is not important for wildlife movement other than for local movements. Wildlife moving between open space areas in the hills east of the developed areas of Evergreen and open spaces on northern Coyote Ridge might move across perimeter parcels within the City, but most animals moving successfully between these open spaces likely do so by moving around the most developed areas using less developed habitats beyond the City limits.

Wildlife Movement in Coyote Valley

Coyote Valley is primarily an agricultural area, but it is positioned between large tracts of open land that lie to the east and west. The serpentine grasslands of Coyote Ridge, rich stream and riparian areas that feed into Anderson Reservoir, and oak woodlands and other habitats of the Mt. Hamilton Range are found east of Coyote Valley. To the west, the grassy ridgeline of the foothills transitions to oak woodlands and riparian corridors on the Santa Cruz Mountains. Habitats on both sides of the Coyote Valley support an abundance of wildlife. Deer, bobcats, mountain lions, grey foxes, coyotes, and badgers are some of the large and medium-sized mammals of hillside and mountain habitats, and there are abundant populations of California ground squirrels in the Coyote Valley foothills. Tule elk regularly use Coyote Ridge, particularly south of Metcalf Canyon, and can be seen at times along US 101. This species was reintroduced to the Mt. Hamilton Range in the 1970s and 1980s and has been slowly expanding in that area. Pools and ponds on both sides of the Coyote Valley support California tiger salamanders as well as a suite of more common amphibians.

This valley in the past supported a broad sycamore alluvial riparian forest along Coyote Creek, a large perennial freshwater pond (Laguna Seca) and its associated marshes, wet meadows, valley oak savannah, and dry grassland. Laguna Seca, which once was the terminus of Fisher Creek, is still a prominent feature of the landscape. Movement of mammals, amphibians, and reptiles was relatively unobstructed, impeded only by the high winter flows of Coyote Creek, which in most years was dry in the summer. This connectivity changed as the Santa Clara Valley developed. Anderson and Coyote Reservoirs were developed, Monterey Highway was constructed, and the Coyote Canal was built to allow flows to bypass Coyote Creek and help keep groundwater low for agricultural development in Coyote Valley. Active agriculture dominated the landscape, golf courses were developed, and the US 101 Freeway was constructed. Now the area which once certainly served as an easy, short-distance crossing for wildlife to move between the Mt. Hamilton Range and the Santa Cruz Mountains is constrained by these developments, and even more so by the urban and residential developments of Morgan Hill, Gilroy, and South San José.

Roadway Barriers to Wildlife Movement

Monterey Highway is a formidable barrier to wildlife movement through most of the Coyote Valley. The center median is nearly continuous, with an approximately three-foot concrete barrier topped with metal mesh. The only openings in the barrier are at major intersections at Metcalf Road, Bailey Avenue, Coyote Ranch Road, and Palm Avenue and at the connection of Fisher Creek to Coyote Creek.

US 101 is another substantial barrier to wildlife movement, with fencing alongside the highway, another concrete median barrier, and only a few intersections providing potential access routes. Metcalf Road and Bailey Avenue provide overpasses over the highway, and Coyote Creek Golf Drive is an underpass. Using motion-sensing/infrared still and video cameras, over 100 records of animals moving under the freeway at the Coyote Creek Golf Club underpass have been made by the De Anza College Wildlife Corridor Stewardship Team. There also are a number of culverts that extend under the freeway that are used by mammals, reptiles, and amphibians for movement. There are at least 24 such culverts, varying in size from relatively small to approximately six-foot high tunnels.[67] Camera stations on seven of these culverts noted movement through six of these culverts by a variety of species, including raccoons, bobcats, skunks, opossums, coyotes, ground squirrels, deer, and mountain lions. These animals may have been foraging within home ranges, or they may have been dispersing. From these observations, there is clear evidence of the ability of wildlife to move under the freeway. Some animals do cross the roadway, although a number of animals, including badgers and a mountain lion, have been found dead on the freeway or on the overpasses.

Other barriers to movement within the Coyote Valley area include the large fenced Coyote Creek Golf Club, the electrical substation at Metcalf Road, and numerous small developed and fenced parcels, especially in Mid Coyote and South Coyote (see aerial photograph in Figure 3.1-6).

Movement Pathways West of US 101

West of US 101, animals have ready movement corridors along Coyote Creek in the parkway. This is a rich wildlife area, with resident deer, bobcats, badgers, small mammals of a wide variety, and an occasional mountain lion. A population of California tiger salamanders exists and is protected at the Coyote Creek Golf Club. California red-legged frogs are found on both sides of the valley, but have not been found in this section of Coyote Creek, although there was a recent report of a frog near the quarry ponds at the south end of the valley. Animals within this area still have the challenge of crossing Monterey Highway as described above.

Open agricultural fields dominate the landscape west of Monterey Road with no significant additional physical barriers. Santa Teresa Boulevard and the other roadways of the vicinity present risks for roadkill, but would not prevent the movement of mammals. The De Anza College Wildlife Stewardship Team has also been observing wildlife use of the agricultural fields and searching for mammal tracks along the public roadways. They have recorded badgers, bobcats, coyotes, and foxes moving alongside the agricultural fields. These animals may be moving on regular foraging routes within their home ranges, or may be dispersing. Several road-killed badgers have been observed, and badgers have been observed denning in hills near the IBM industrial campus north of Bailey Avenue and once along Laguna Avenue.

[67] Use of culverts under US 101 as documented by the CDFG, the De Anza College Wildlife Corridor Stewardship Team (unpublished data), and ICF Jones and Stokes (2008) as presented in the working draft HCP/NCCP.

The west side of the Coyote Valley is an area that included extensive seasonal and perennial wetlands in the past, with Fisher Creek and Laguna Seca as prominent features. During heavy rainfall years/periods, amphibians that live on both sides of the valley begin their movements. Adult California tiger salamanders emerge from their underground refugia and move in search of breeding pools. Young salamanders move away from these pools over the first several years of their lives before reaching reproductive age. While most of these salamanders stay within 1,000-2,000 feet of breeding areas, they can move a mile or more searching for breeding pools. Similarly, California red-legged frogs move across upland habitats, including agricultural fields, during the wet season, occasionally moving up to two miles or more from breeding habitat. However, the impediments to movement at Monterey Highway described above for mammals, as well as the impediments posed by vast expanses of agricultural fields containing no vegetation or burrows that provide refugia, are formidable obstacles to these amphibians, should they attempt to move across the valley floor.

Wildlife Movement in the South Almaden Valley Urban Reserve and Adjacent Hillside Areas

The South Almaden Valley Urban Reserve area is a combination of rural residential areas and agricultural fields, including pastureland. It lies north of Calero Reservoir, with the Santa Teresa Hills to the east and Almaden Quicksilver County Park and the base of the Santa Cruz Mountains to the west. This area does not have the major physical barriers to movement that characterize the Coyote Valley, but it is more developed overall, especially at its northern end.

The south end of the Santa Teresa Hills is characterized by extensive private open space at two industrial office facilities (IBM campuses on Harry Road and Bailey Avenue), Santa Teresa County Park, and the relatively undeveloped Calero Lake Estates. These areas are contiguous with Calero Lake County Park, thus providing ready movement into protected areas of the Santa Cruz Mountains.

Moving north from this area, the avenues for movement become more restricted. On the west side of the Almaden Valley there is considerable residential development along Old Almaden Road leading into New Almaden that impedes movement. The northeast side of the valley has pockets of development as well, which also would deter wildlife movements somewhat. While there is one relatively undeveloped section in the center of the valley, the southern limits of the valley are more suited for wildlife movement.

Deer are abundant in the Almaden Valley, moving freely in and out of the residential areas and along creeks. Coyotes and foxes move readily through many areas, as do other mammals. No California tiger salamanders are known from the immediate area, but red-legged frogs have been found in Alamitos Creek in the past. Wild turkeys are abundant, as are raptors.

3.5.1.3 *Special-Status Plants*

Special-status plants species are plants that are legally protected under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or species that are considered sufficiently rare under the California Environmental Quality Act that they may qualify for such listing (CEQA Guidelines Section 15380). Refer to Section 3.5.1.6 Regulatory Framework for a description of endangered species laws and regulations.

Special-status plants are species with one or more of the following characteristics:

- Listed under the federal Endangered Species Act (ESA) as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under the California ESA as threatened, endangered, rare, or a candidate species.
- Listed and considered by the California Native Plant Society as rare or endangered on Lists 1A, 1B, 2, or 3.[68]

The Biological Resources Report prepared for the *Envision 2040 San José General Plan* evaluated more than 35 special-status plants known to occur or potentially occurring within the City limits (refer to Appendix E). They are listed in Table 3 of Appendix E.

Thirteen special-status plants are known to occur within the City limits based on a review of California Natural Diversity Data Base records, work completed by the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan project, and biological resources reports previously prepared for various sites in the City of San José and vicinity (refer to *Methodology* in Appendix E). These species and their habitats are listed in Table 3.5-2 and indicated by an asterisk ("*").

In addition, the following six special-status plant species were historically mapped in the area, but are currently considered to be extirpated (i.e., locally extinct), although the possibility exists that several of these species could be found where suitable habitat remains.

- **Robust spineflower** (*Chorizanthe robusta* var. *robusta*) was located on stabilized dunes in the Santa Cruz Mountains.

- **Contra Costa goldfields** (*Lasthenia conjugens*) found in vernal pool habitat and saline-alkaline seasonal wetlands (similar to some areas in Alviso southwest of the City's water pollution control plant).

- **San Joaquin spearscale** (*Atriplex joaquiniana*) was historically found near Alviso.

- **San Francisco collinsia** (*Collinsia multicolor*) reported in Edenvale in an area that was subsequently developed. A population on the east slope of the Santa Cruz Mountains in Santa Clara County is believed to still be extant.

- **Point Reyes bird's beak (***Cordylanthus maritimus* ssp. *paulstris*) is reported in a historic occurrence within the marshes in Alviso.

- **Hairless popcorn-flower** (*Plagiobothrys glaber*) is recorded in alkaline meadows, although this population is believed extirpated from the County and surrounding areas near San Francisco Bay.

Other CNPS listed species not known to occur within the City for which suitable habitat may be present include: bent-flowered fiddleneck (*Amsinckia lunaris*) in chaparral and oak woodland habitats; brittlescale (*Atriplex depressa*) in moist, alkaline, clay habitats such as those near the bay;

[68] Two CNPS List 4 species are also identified in this analysis due to their restricted range: Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*) and Satan's goldenbush (*Isocoma menziesii* var. *diabolica*).

round-leaved filaree (*Erodium macrophylla*) with possible habitat in cismontane woodland, grassland in the Santa Teresa and Almaden Hills; pink creamsacs (*Castilleja rubicundula* ssp. *rubicundula*) in chaparral openings, grassland, meadows, and serpentine; smooth lessingia (*Lessingia micradenia* var. *glabrata*) on serpentinite in chaparral and woodlands; Davidson's bush-mallow (*Malacothamnus davisonii*) in a range of chaparral, scrub and woodland habitats such as those found within the Almaden Hills and Santa Teresa Hills; Hall's bush mallow (*Malacothamnus hallii*) in chaparral and coastal scrub; Mt. Diablo cottonweed (*Micropus amphibolus*) within rocky oak woodland habitat, and Robust monardella (*Monardella villosa* ssp. *globosa*) in forest and chaparral openings or a range of habitats in the Santa Teresa and Almaden Hills. Additional detail on these species is provided in Appendix E.

Habitats where special-status plants occur generally are outside the City's UGB. Special-status plants such as Metcalf Canyon jewelflower and Santa Clara Valley dudleya are found in developing areas where serpentine rock is present and Congdon's tarplant is found in the Alviso area. Although special-status plant species typically do not occur in developed areas of San José, it is possible that small, vestigial populations of special-status plant species could occur in several areas mapped as *Developed* on Figures 3.5-1, 3.5-2, 3.5-3 and 3.5-4. In particular, such species could potentially occur on serpentine soils in the vicinity of the Silver Creek Valley Country Club in the Edenvale Planning Area or Communications Hill in the South Planning Area.

Table 3.5-2
Special-Status Plant Species Potentially Occurring within the City Limits
(*=Known to Occur within San José City Limits)

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CNPS List/ HCP	Occurrence
Federally or State-Listed Threatened or Endangered Species					
Castilleja affinis ssp. *neglecta**	Tiburon Indian paintbrush	Valley and foothill grassland/serpentine bunchgrass grassland	FE, ST	1B, 2 HCP	Coyote Ridge between Anderson Reservoir and US 101 and potentially in the Santa Teresa Hills
*Ceanothus ferrisiae**	Coyote ceanothus	Chaparral, coastal scrub, valley and foothill grassland on serpentinite/serpentine bunchgrass grassland and mixed serpentine chaparral	FE	1B HCP	On Coyote Ridge; may also occur in the Santa Teresa Hills
*Dudleya setchellii**	Santa Clara Valley dudleya	Cismontane woodland, valley and foothill grassland on serpentinite, rocky/serpentine rock outcrop	FE	1B HCP	On serpentine outcrops in the Santa Teresa Hills, on Communications Hill, northern Coyote Ridge, near Anderson Reservoir, and in the upper Llagas Creek watershed.

Table 3.5-2
Special-Status Plant Species Potentially Occurring within the City Limits
(*=Known to Occur within San José City Limits)

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CNPS List/ HCP	Occurrence
Lasthenia conjugens	Contra Costa goldfields	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools in mesic areas/ California annual grassland, seasonal wetlands	FE	1B HCP	Presumed extirpated from Santa Clara County; no suitable vernal pool habitat exists within the City limits; although saline-alkaline seasonal wetlands between Disk Drive and Los Esteros Road in Alviso are very similar to habitats currently supporting this species in Alameda County.
Streptanthus albidus ssp. *albidus**	Metcalf Canyon jewel-flower	Valley and foothill grassland (serpentinite)/ serpentine bunchgrass grassland	FE	1B HCP	On serpentine soils along northern Coyote Ridge and near Anderson Reservoir; suitable habitat also present north of Alum Rock, in the Santa Teresa Hills, west of Coyote Valley and on Communications Hill.
Trifolium amoenum	showy Indian clover	Coastal bluff scrub, valley and foothill grassland (sometimes serpentinite)/ serpentine bunchgrass grassland.	FE	1B HCP	No records with the City limits; however suitable habitat is present within the serpentine grasslands located north of Alum Rock, in the Santa Teresa Hills, along Coyote Ridge, west of Anderson Reservoir, west of Coyote Valley, and on Communications Hill (although surveys of Communications Hill have never found the species.

Table 3.5-2
Special-Status Plant Species Potentially Occurring within the City Limits
(*=Known to Occur within San José City Limits)

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CNPS List/ HCP	Occurrence
Other CNPS and HCP Listed Species					
Allium peninsulare var. *franciscanum*	Franciscan onion	Cismontane woodland, valley and foothill grassland on clay, volcanic soils, often serpentinite/oak woodland	None	1B	No populations reported within the City limits. Closest known population occurs off Page Mill Road in Palo Alto, but suitable habitat exists within the City in oak woodland habitats, such as those in the Santa Teresa and Almaden Hills.
Amsinckia lunaris	Bent-flowered fiddleneck	Coastal bluff scrub, cismontane woodland, valley and foothill grassland/oak woodland and chaparral	None	1B	No known occurrences in the City limits. One population reported 1.1 miles north of Mt. Hamilton Road beyond the City limits. Suitable habitat is present at similar elevations in chaparral and oak woodlands, particularly near the Almaden Hills and near Llagas Creek.
Astragalus tener var. *tener*	alkali milk-vetch	Playas, valley and foothill grassland (adobe clay), vernal pools on alkaline soils/California annual grassland habitat on alkaline soil, seasonal wetlands	None	1B	One occurrence from New Chicago Marsh may be extirpated. Marginally suitable habitat still exists within the City limits in Alviso, south and southwest of the San José-Santa Clara Water Pollution Control Plant (WPCP).

Table 3.5-2
Special-Status Plant Species Potentially Occurring within the City Limits
(*=Known to Occur within San José City Limits)

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CNPS List/ HCP	Occurrence
Atriplex depressa	Brittlescale	Chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools on alkaline, clay soils/ California annual grassland habitat on alkaline soil, seasonal wetlands	None	1B	Although no occurrences are reported within the City limits, suitable habitat is present on low lying, moist, alkaline, clay soils near San Francisco Bay.
Atriplex joaquiniana	San Joaquin spearscale	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland on alkaline soils/ California annual grassland habitat on alkaline soil, seasonal wetlands	None	1B	Historical records of the species near Alviso, but extant occurrences also exist just outside of the City limits. Not known to currently occur within the City limits; however, suitable habitat is present south and southwest of the WPCP.
Balsamorhiza macrolepis var. *macrolepis**	big-scale balsamroot	Chaparral, cismontane woodland, valley and foothill grassland sometimes in serpentinite/ serpentine bunchgrass, mixed serpentine chaparral, and oak woodland	None	1B, HCP	Found at one location in the northern portion of Coyote Ridge, additional suitable habitat on serpentine soils along Coyote Ridge, near Anderson Reservoir, west of Coyote Valley, in the Santa Teresa Hills, Communications Hill, and near Alum Rock
California macrophylla	round-leaved filaree	Cismontane woodland, valley and foothill grassland/in California annual grassland and oak woodland habitat on clay soils	None	1B	One historical record from within the City limits; additional suitable habitat occurs in the Santa Teresa and Almaden Hills.

Table 3.5-2
Special-Status Plant Species Potentially Occurring within the City Limits
(*=Known to Occur within San José City Limits)

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CNPS List/ HCP	Occurrence
Castilleja rubicundula ssp. *rubicundula*	pink creamsacs	Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland on serpentinite/oak woodland, serpentine bunchgrass grassland	None	1B, HCP	The nearest recorded population occurs approximately 4.5 miles south of Gilroy. However, suitable habitat is present along Coyote Ridge, within the Santa Teresa Hills, near Anderson Reservoir, west of Coyote Valley, within Communications Hill (although it has not been found there in surveys), and within the area of serpentine north of Alum Rock
Centromadia parryi ssp. *congdonii**	Congdon's tarplant	Valley and foothill grassland on alkaline soils	None	1B	Found in Alviso.
Cirsium fontinale var. *campylon**	Mt. Hamilton thistle	Serpentine seeps in chaparral, cismontane woodland and valley and foothill grassland	None	1B HCP	Northern Coyote Ridge, near Anderson and Calero Reservoirs; suitable habitat in the Santa Teresa and Almaden Hills, and near Anderson and Calero Reservoirs.
Clarkia concinna ssp. *automixa*	Santa Clara red ribbons	Chaparral, cismontane woodland/chaparral, oak woodland	None	4	Historical records of the species within the City limits. Suitable habitat exists in chaparral and oak woodland habitats in the Santa Teresa Hills and along Coyote Ridge, near Anderson and Calero Reservoirs, and within the Almaden Hills.

Table 3.5-2
Special-Status Plant Species Potentially Occurring within the City Limits
(*=Known to Occur within San José City Limits)

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CNPS List/ HCP	Occurrence
Eryngium aristulatum var. *hooveri**	Hoover's button celery	Vernal pools/ California annual grassland habitat on alkaline soil, seasonal wetland	None	1B	One known occurrence reported from New Chicago Marsh in Alviso and may be on other lands in the Alviso area.
*Fritillaria liliacea**	Fragrant fritillary	Cismontane woodland, coastal prairies, coastal scrub, valley and foothill grassland, often in serpentinite/ oak woodland, serpentine bunchgrass grassland	None	1B HCP	Found near Coyote Ridge and in Alum Rock Park. Additional suitable habitat is found along Coyote Ridge, near Anderson and Calero Reservoirs, west of Coyote Valley, in the Santa Teresa Hills, on Communications Hill (although not found in surveys) and on serpentine north of Alum Rock Park.
*Hoita strobilina**	Loma Prieta hoita	Chaparral, cismontane woodland, riparian woodland, usually serpentinite/mesic mixed serpentine chaparral, serpentine seeps	None	1B HCP	Recorded on serpentine soils in the Santa Teresa Hills and suitable habitat is present at other hillside locations with serpentine soils.
Isocoma menziesii var. *diabolica**	Satan's golden bush	Cismontane woodland/oak woodland	None	4	Occurs in the Almaden Hills; suitable oak woodland habitat also in the Santa Teresa Hills, near Anderson Reservoir and along Coyote Ridge.

Table 3.5-2
Special-Status Plant Species Potentially Occurring within the City Limits
(*=Known to Occur within San José City Limits)

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CNPS List/ HCP	Occurrence
Lessingia micradenia var. *glabrata*	smooth lessingia	Chaparral, cismontane woodland on serpentinite, often roadsides/mixed serpentine chaparral and oak woodland	None	1B, HCP	Numerous records near the City limits, mostly within the Santa Teresa Hills the Almaden Reservoir, east of Llagas Creek, and Almaden Quicksilver County Park. Suitable habitat is present within the City limits in the Santa Teresa Hills and along Coyote Ridge.
Malacothamnus arcuatus	arcuate bush-mallow	Chaparral, cismontane woodland/chaparral and oak woodland	None	1B	One record in the City near Alum Rock and several others south of the City limits. Suitable habitat exists within the City limits in the Santa Teresa Hills.
Malacothamnus davidsonii	Davidson's bush-mallow	Chaparral, cismontane woodland, coastal scrub, riparian woodland/ chaparral, oak woodland, mixed riparian forest and woodland	None	1B	All known records near Stanford and Los Altos; suitable habitat within the City limits in the Almaden Hills and Santa Teresa Hills.
*Malacothamnus hallii**	Hall's bush-mallow	Chaparral, coastal scrub/chaparral	None	1B, HCP	Numerous records in the Santa Teresa Hills and along Coyote Ridge. Additional suitable habitat within the City limits is present in the Almaden Hills and the foothills of the Santa Cruz Mountains.

Table 3.5-2
Special-Status Plant Species Potentially Occurring within the City Limits
(*=Known to Occur within San José City Limits)

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CNPS List/ HCP	Occurrence
Micropus amphibolus	Mount Diablo cottonweed	Broad-leafed upland forest, chaparral, cismontane woodland, valley and foothill grassland in rocky habitat/oak woodland, chaparral, California annual grassland.	None	3	One record of the species within the City limits, west of Campbell. Suitable habitat occurs within rocky oak woodland habitat in the Santa Teresa Hills and near Calero Reservoir.
Monardella villosa ssp. *globosa*	robust monardella	Broad-leafed upland forest (openings), chaparral (openings), cismontane woodland, coastal scrub, valley and foothill grassland/ chaparral, oak woodland, and California annual grassland	None	1B, HCP	Three records of this species just outside the City limits in Almaden Quicksilver County Park and Furtado Open Space Preserve. Suitable habitat within the City limits present particularly in the Santa Teresa Hills and Almaden Hills.
Streptanthus albidus ssp. *peramoenus**	Most-beautiful jewelflower	Chaparral, cismontane woodland, valley and foothill grassland in serpentinite/ serpentine bunchgrass grassland, mixed serpentine chaparral	None	1B HCP	Found along Coyote Ridge, near Anderson and Calero Reservoirs, and in the Santa Teresa Hills. Suitable habitat on Communications Hill and serpentine areas near Alum Rock.

Key to Abbreviations:
FE = Federal Endangered, SE = State Endangered, ST = State Threatened
CNPS = California Native Plant Society, HCP = Covered Species in the draft Santa Clara Valley HCP/NCPP.
Two CNPS List 4 species are listed above due to their restricted range: Santa Clara red ribbons and Satan's goldenbush (refer to Appendix E)
Source: H.T. Harvey & Associates. *Envision San José 2040 General Plan Update Biological Resources Report.* August 18, 2010. (Refer to Appendix E of this EIR).

3.5.1.4 *Special-Status Animals*

Special-status animal species are animals that are protected under the provisions of the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or species that are considered sufficiently rare under the California Environmental Quality Act that they may qualify for such listing (CEQA Guidelines Section 15380). Refer to *Section 3.5.1.6 Regulatory Framework* for a description of endangered species laws and regulations.

Special-status animals are species with one or more of the following characteristics.

- Listed under the federal Endangered Species Act (ESA) as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under the California ESA as threatened, endangered, rare, or a candidate species.
- Designated by the CDFG as a California Species of Special Concern (CSSC).
- Listed in the California Fish and Game Code (CFG Code) as a fully protected species [CFG Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians) and 5515 (fish)]

The Biological Resources Report prepared for the *Envision 2040 San José General Plan* evaluated over 50 special-status animal species known to occur or potentially occurring within the City limits (refer to Appendix E). Special-status animal species that are know to breed or potentially could breed within the City limits and those that commonly occur are listed in Table 4 of Appendix E.

Special-status animals known to occur within the City limits were identified based on a review of California Natural Diversity Data Base records, work completed by the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan project, and biological resources reports previously prepared for various sites in the City of San José and vicinity (refer to *Methodology* in Appendix E). These species and their habitats are listed in Table 3.5-3

In addition, the following special-status animal species may have been present historically but are currently considered to be extirpated (i.e., locally extinct) or no longer breed in the area, although the possibility exists that they could be found where suitable habitat remains.

- **Central California coast coho salmon** (*Oncorhynchus kisutch*) may have been present in Coyote Creek and possibly the Guadalupe River and Los Gatos Creek.

- **Bank swallow** (*Riparia riparia*) a colonial nester on vertical banks or cliffs near water has no recent breeding records in Santa Clara County and occurs only as a rare migrant.

- **California condor** (*Gymnogyps californianus*) was likely historically present as a nonbreeder in the area. Reintroduced individuals from Pinnacles National Monument in San Benito County may range into the City limits.

- **San Joaquin kit fox** (*Vulpes macrotis mutica*) reported near Coyote Valley and along Metcalf Road, although not currently expected to occur within the City limits.

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
Federally or State-Listed Threatened or Endangered Species					
Euphydryas editha bayensis	Bay checkerspot butterfly	Native grasslands on serpentine soils.	FT	HCP	Serpentine bunchgrass grasslands and outcrops along Coyote

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
					Ridge, Santa Teresa County Park, and near Calero Reservoir.
Acipenser medirostris	Green sturgeon	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.	FT	CSSC	San Francisco Bay, rarely a nonbreeding visitor in the South Bay (such as tidal sloughs in the Alviso area).
Spirinchus thaleichthys	Longfin smelt	Spawns in fresh water in the upper end of the San Francisco Bay; occurs year-round in the South Bay.	ST	None	Occurs year-round
Oncorhynchus mykiss	Central California coast steelhead	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	FT	HCP	Known to occur in Coyote Creek, Upper Penitencia Creek, Los Gatos Creek, Alamitos Creek, Calero Creek, Guadalupe Creek and the Guadalupe River. Also present in Alviso Slough, Coyote Slough and estuarine habitats during migration.
Ambystoma californiense	California tiger salamander	Vernal or temporary pools in annual grasslands or open woodlands.	FT, SC	CSSC HCP	Breeding locations on Communications Hill, near Metcalf Road, northwestern Coyote Valley, around Calero Reservoir, NW of Guadalupe Reservoir; may also be present in undeveloped portions of the Almaden Valley/Santa Teresa Hills. Presumed extirpated throughout the remainder of San José.

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
Rana draytonii	California red-legged frog	Streams, freshwater pools and ponds with emergent or overhanging vegetation	FT	CSSC HCP	Near Metcalf Road, Cherry Creek (upstream of Calero Reservoir), west of Anderson Reservoir, east of Anderson Reservoir (Twin Lakes and Tule Lake), Las Animas Creek, in stock ponds in open grasslands east of the City limits of San José, in San Felipe Creek, Joseph D. Grant County Park and Alum Rock Park. Possibly present in southern Almaden Valley or the outskirts of the UGB in the Evergreen area. Apparently extirpated from much of the valley floor. Individuals from breeding populations may occasionally disperse, or be washed, downstream into the upper reaches of streams such as Guadalupe Creek, Calero Creek, and Thompson Creek.
Haliaeetus leucocephalus	Bald Eagle	Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or in cliffs, occasionally on electrical towers.	ST (nesting)	None	Small numbers forage at Calero and Anderson Reservoirs and in Coyote Valley during the nonbreeding season; likely that breeding will occur in or close to the City limits at these reservoirs in the future.

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
Rallus longirostris obsoletus	California clapper rail	Salt marsh habitat dominated by pickleweed and cordgrass.	FE, SE, SP	None	Suitable breeding habitat in Guadalupe Slough, Alviso Slough, and tidal areas of Coyote Creek.
Charadrius alexandrinus nivosus	Western snowy plover	Sandy beaches on marine and estuarine shores and salt pans in San Francisco Bay saline managed ponds.	FT	CSSC	Nests on levees, islands, and salt flats in saline managed ponds. Has bred in managed ponds within the City limits and New Chicago marsh in the past.
Sterna antillarum browni	California least tern	Nests along the coast on bare or sparsely vegetated, flat substrates. In San Francisco Bay, nests in salt pannes and on an old airport runway. Forages for fish in open waters.	FE, SE, SP	None	Does not breed within the City limits. The South Bay is an important post-breeding staging area for least terns. Although most such staging has occurred in ponds outside the City limits in the Mountain View/ Sunnyvale area, post-breeding least terns forage and roost in managed ponds in the Alviso area to some extent as well.
Reithrodontomys raviventris	Salt marsh harvest mouse	Salt marsh habitat dominated by common pickleweed.	FE, SE, SP	None	Known from marshes in the Alviso area, along Coyote Creek and the Coyote Creek Flood Control Channel in pickleweed habitat.
Other CSSC, State Fully Protected, and Draft HCP Listed Species					
Lampetra tridentata	Pacific lamprey	Spawns in gravel-bottomed streams or rivers upstream of riffle habitat; adults forage in marine areas.	None	HCP	Currently known from the Guadalupe River, Coyote Creek, and Upper Penitencia Creek. May be present in other

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
					accessible portions of streams during migration between spawning areas and marine foraging habitat.
Oncorhynchus tshawytscha	Central Valley fall-run Chinook salmon	Cool rivers and large streams that reach the ocean and have shallow partly shaded pools, riffles and runs.	None	CSSC, HCP	Known to occur in Coyote Creek, Los Gatos Creek, and the Guadalupe River. Uses the lower reaches of Coyote Creek and Alviso Slough during migration.
Rana boylii	Foothill yellow-legged frog	Partially shaded shallow streams and riffles with a rocky substrate in the coast ranges.	None	CSSC, HCP	Known to occur in Guadalupe Creek near Guadalupe Reservoir, Llagas Creek, and Rincon Creek.
Actinemys marmorata	Western pond turtle	Permanent or nearly permanent waterbodies.	None	CSSC, HCP	Creeks, rivers, lakes, and ponds. Habitat quality is reduced throughout most of the city due to the absence of suitable upland nesting habitat along ponds and creeks
Phyrnosoma coronatum frontale	California horned lizard	Open habitats (such as chaparral, coastal scrub, grassland and woodland clearings) with sandy, loosely textured soils with the presence of native harvester ants (*Pogonomyrmex barbatus).*	None	CSSC	Reported near Calero Reservoir and may occur in chaparral habitats the Santa Teresa Hills and near Alum Rock Park.
Aquila chyrsaetos	Golden Eagle	Breeds on cliffs or in large trees, forages in open areas.	None	SP, HCP	Known to nest on an electrical tower below Calero Reservoir, in the Santa Teresa Hills, on Coyote Ridge, near

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
					Alum Rock Park and Anderson Reservoir.
Circus cyaneus	Northern harrier	Nests in marshes and moist fields and forages over open areas.	None	CSSC (nesting)	Nesting habitat is present primarily in diked tidal salt marsh in the Alviso area and fallow fields in Coyote Valley, although nesting in some of these areas is limited by predators.
Elanus caeruleus	White-tailed kite	Nests in tall shrubs and trees, forages in grasslands, marshes and ruderal habitats.	None	SP	Fairly common resident in less developed areas; most abundant in the vicinity of Coyote Valley, the Santa Teresa Hills and Coyote Ridge. Also reported in the Alviso area.
Falco peregrinus anatum	American peregrine falcon	Nests on cliffs and tall bridges and buildings	None	SP	Known to nest at City Hall and on an electrical tower in Alviso managed saline ponds. Regular winter forager in the Alviso area and Coyote Valley.
Rynchops niger	Black skimmer	Nests on abandoned levees and islands in saline ponds and marshes	None	CSSC (nesting)	Uncommon resident, approximately 20 birds in the South Bay area. A few pairs breed and forage on islands in saline managed ponds in the Alviso area.
Asio otus	Long-eared owl	Riparian bottomlands with dense woody vegetation; forages in adjacent open areas.	None	CSSC (nesting)	Rare resident and occasional winter visitor in Santa Clara County. Possible breeder, though likely only in very low numbers.

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
Athene cunicularia	Burrowing owl	Open grasslands and ruderal habitats with suitable burrows.	None	CSSC, HCP	Present year-round in open, agricultural or grassland areas where active California ground squirrel burrows are present. Nests in areas such as the WPCP buffer lands, the VTA's Cerone facility near SR 237, San José International Airport, and Reid-Hillview Airport/Lake Cunningham area. Where occurring in Coyote Valley and Coyote Ridge, primarily as a nonbreeder.
Chaetura vauxi	Vaux's swift	Nests in snags in coastal coniferous forests or occasionally in chimneys.	None	CSSC (nesting)	Breeds in residential chimneys in the foothills of the Santa Cruz Mountains and could breed in chimneys in the western area of the City. Forages over residential areas.
Lanus ludovicianus	Loggerhead shrike	Nests in tall shrubs and dense trees; forages in grasslands, marshes and ruderal habitats.	None	CSSC (nesting)	Breeds at a number of locations in the city where open grassland, ruderal, or agricultural habitat with scattered brush or trees provides perches and nesting sites.
Contopus cooperi	Olive-sided Flycatcher	Breeds in mature forests with open canopies, along forest edges and in recently burned forest habitats.	None	CSSC (nesting)	Known to nest along Upper Penitencia Creek in Alum Rock Park and around Calero Reservoir. Few pairs likely to breed within the City limits.

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
Dendroica petechia	Yellow warbler	Nests in riparian woodlands.	None	CSSC (nesting)	Uncommon breeder in riparian habitats within the City limits. An abundant migrant throughout the Valley during the spring and fall.
Geothlypis trichas sinuosa	San Francisco common yellowthroat	Nests in herbaceous vegetation, usually in wetlands or moist floodplains	None	CSSC	Common resident, breeding in fresh and brackish marshes and weedy riparian habitats in northern areas of the City including the edge of the Bay (Alviso Slough and San Tomas Aquino Creek) lower Coyote Creek and the Guadalupe River.
Icteria virens	Yellow-breasted chat	Nests in dense stands of willow and other riparian habitat.	None	CSSC (nesting)	Rare breeder in willow-dominated riparian habitats; Coyote Creek and possibly Coyote Valley.
Melospiza melodia	Alameda song sparrow	Nests in salt marsh, primarily in marsh gumplant and cordgrass along channels.	None	CSSC	Resident in tidal salt marshes; breeds along tidal sloughs.
Ammodramus savannarum	Grasshopper sparrow	Breeds and forages in grasslands, meadows, fallow fields, and pastures.	None	CSSC (nesting)	Within the City limits, breeds primarily in serpentine grasslands in the Santa Teresa Hills and Coyote Ridge.
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	Nests in pickleweed dominated salt marsh and adjacent ruderal habitat	None	CSSC	In the Alviso area, breeds primarily in or near diked/muted tidal salt marsh habitat. May forage throughout the city outside of the breeding season.

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
Agelaius tricolor	Tricolored blackbird	Nests near freshwater in dense emergent vegetation, such as bulrush and cattails.	None	CSSC (nesting colony)	Habitat is very limited within the City limits. Most recent records of breeding (in the 1990s) are along Coyote Creek in the Alviso area and at the base of Calero Dam.
Sorex vagrans halicoetes	Salt marsh wandering shrew	Salt marsh with pickleweed and driftwood (6-8 feet above sea level)	None	CSSC	Typically occurs in tidal salt marsh habitat and may be present in the Alviso area.
Antrozous pallidus	Pallid bat	Forages over many habitats; roots in caves, rock outcrops, buildings, and hollow trees.	None	CSSC	Individuals could forage within the City limits in open areas within several miles of colonies in the Diablan Range.
Corynorhinus townsendii	Townsend's big-eared bat	Roots in caves, mine tunnels, and occasionally deep crevices in trees or in abandoned buildings	None	CSSC	This species could occur near southern Coyote Ridge, northern Anderson Reservoir or in the Guadalupe Mines area. Present in Santa Clara County; breeding and roosting not known within the City limits, however.
Lasiurus blossevillii	Western red bat	Roots in foliage or forest or woodlands, especially in or near riparian habitat	None	CSSC	May root in trees within the City limits, occasional migrant or winter resident. Does not breed in the area.
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	Nests in a variety of habitats including riparian areas, oak woodlands and scrub.	None	CSSC	Occurs in less developed areas such as the upper reaches of Thompson, Coyote, Calero, and Guadalupe Creeks and in the Santa Teresa Hills. Also known from Coyote Valley and the lower reaches

Table 3.5-3
Special-Status Animal Species Known to Occur within the City Limits

Scientific Name	Common Name	Habitat	Federal/ State Listing Status	CSSC and Other Listings	Occurrence
					of Coyote Creek in the Alviso area.
Taxidea taxus	American badger	Burrows in grassland and occasionally in disked agricultural areas.	None	CSSC	Occurs in grasslands in the Santa Teresa Hills, edges of Coyote Valley, Coyote Ridge, and Tulare Hill. May also be present in extensive grasslands outside heavily developed areas.
Bassariscus astutus	Ringtail	Cavities in rock outcrops and talus slopes and hollows of trees and logs in riparian habitats and dense woodlands.	None	SP	May be present in small numbers in less developed, wooded areas such as around the north end of Anderson Reservoir and south and west of Calero Reservoir.
Poca vitulina richardsi	Pacific harbor seal	Throughout the northern Atlantic and Pacific Oceans, along coastal waters, bays, and river mouths.	None	MM-PA	Resident of San Francisco Bay, suitable haul-out sites are present in tidal sloughs in the Alviso area. No pupping sites are currently known within the City limits.

Key to Abbreviations:
FE = Federal Endangered, SE = State Endangered, ST = State Threatened, SC = State Candidate, SP = State Fully Protected Species, CSSC = California Species of Special Concern; MMPA = Species Protected under Marine Mammal Protection Act, HCP = Covered Species in the draft Santa Clara Valley HCP/NCCP
Source: Biological Resources Report (Appendix E)

There are also a number of special-status bird species that are uncommon or occasional migrants or visitors, such as the black rail, willow flycatcher, common loon, and short-eared owl, which are not known to breed within the City limits. These species are described in Appendix E.

3.5.1.5 *Native and Non-native Trees within the Community Forest*

The City of San José supports established and new plantings of trees that comprise an urban forest within the developed areas of the city. The urban forest consists primarily of planted landscape trees along residential and commercial streets and in landscaped areas at residences, local parks, in parking lots, and the perimeter of commercial and industrial developments. Stands of native trees, such as

coast live oak, Western sycamore, Fremont cottonwood, and box elder, are found scattered throughout the city, primarily near riparian areas. Remnant plantings of orchard trees, often walnut trees from the City's agricultural past, are found in vacant lots and residential yards. Outside the UGB, native and non-native trees are found in natural areas (e.g., along riparian corridors and in oak woodlands) and associated with residential, industrial park campus, and park development.

3.5.1.6 *Regulatory Framework*

Federal

Clean Water Act and the Rivers and Harbors Act

Areas meeting the regulatory definition of "Waters of the U.S." (jurisdictional waters) are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under provisions of Section 404 of the 1972 Clean Water Act and Section 10 of the 1899 Rivers and Harbors Act. Construction activities and the placement of fill within jurisdictional waters are regulated by the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards [RWQCBs]) charged with implementing water quality certification in California.

Jurisdictional waters that support sensitive habitats in the City of San José include waterways such as Coyote Creek, Los Gatos Creek and the Guadalupe River, as well as smaller perennial and intermittent drainages and wetlands. Modifications of aquatic habitats such as lakes, ponds, reservoirs, saline managed ponds and mudflats within the city may also be subject to requirements of the federal Clean Water Act. Construction of structures or placement of fill in the major tidal waterways near San Francisco Bay, such as Guadalupe, Coyote, Artesian and Alviso Sloughs, and associated mudflats, may be subject to regulations under the Rivers and Harbors Act.

Other key components of the Clean Water Act include Sections 303 and 304 that call for the establishment of water quality standards, criteria, and guidelines, including for wastewater effluent. Under Section 303(d) States are required to identify impaired surface water bodies and develop total maximum daily loads (TMDLs) for contaminants of concern. EPA's regulations, as called for under Section 402 of the Clean Water Act, also include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into waters of the United States (e.g., streams, lakes, bays, etc.). These regulations are implemented at the regional level by water quality control boards and are designed to control pollutants in sensitive aquatic habitats.

Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects listed wildlife species from harm or "take" which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that directly results in death or injury to a listed wildlife species. An activity can be defined as "take" even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the ESA if they occur on federal lands or if the project requires a federal action, such as a Clean Water Act Section 404 fill permit from the USACE.

Federally listed plant species known from areas within the City limits of San José are the Santa Clara Valley dudleya, Tiburon Indian paintbrush, Coyote ceanothus, robust spineflower, Contra Coasta goldfields, and Metcalf Canyon jewel-flower (refer to Table 3.5-2). Federally listed wildlife species that are found within the City limits include the salt marsh harvest mouse, bay checkerspot butterfly, Central California Coast steelhead, California tiger salamander and California red-legged frog. Other listed animals may also occasionally occur within the city (refer to Table 3.5-3).

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the 200 nautical mile limit of the United States. Federal agencies that fund, permit, or implement activities that may adversely impact an Essential Fish Habitat (EFH) established by the National Marine Fisheries Service (NMFS) in fishery management plans under the Act are required to consult with NMFS and respond in writing to their recommendations.

Tidal waters within the City of San José may support fish species subject to a fisheries management plan. Coyote Creek and San Francisco Bay are listed as EFH for Chinook salmon. Chinook salmon also occur within Los Gatos Creek and the Guadalupe River. Other fish species regulated by fisheries management plans may also disperse into reaches of Alviso Slough and San Tomas Aquino Creek and projects in these waterways may be subject to consultation with NMFS under the Act.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., §703, Supp. I, 1989) prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses issues related to the MBTA is the U.S. Fish and Wildlife Service (USFWS). Migratory birds protected under this law include all native birds and certain game birds (e.g., turkeys and pheasants). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA protects active nests from destruction and all nests of species protected by the MBTA, whether active or not, cannot be possessed. An active nest under the MBTA, as described by the Department of the Interior in its April 15, 2003 Migratory Bird Permit Memorandum, is one having eggs or young. Nest starts, prior to egg laying, are not protected from destruction. All native bird species in the city are protected under the MBTA.

State of California

Porter-Cologne Water Quality Control Act

The State of California's Porter-Cologne Water Quality Control Act provides the basis for water quality regulation within California and the Act assigns primary responsibility for the protection and enhancement of water quality to the State Water Resources Control Board (SWRCB) and the nine regional water quality control boards. The SWRCB provides state-level coordination of the water quality control program by establishing state-wide policies and plans for the implementation of state and federal laws and regulations. The RWQCBs are responsible for protecting surface, ground, and coastal waters within its boundaries.

Many wetlands fall into RWQCB jurisdiction, including some wetlands that are not subject to federal USACE jurisdiction. RWQCB jurisdiction of other waters, such as streams and lakes, extends to all areas below the ordinary high water mark.

Under the Porter-Cologne Water Quality Control Act, the SWRCB and nine regional boards also have the responsibility of granting Clean Water Act National Pollutant Discharge Elimination System permits, commonly known as NPDES permits, and waste discharge requirements (WDRs) for certain point-source and non-point discharges to waters. These regulations limit impacts to aquatic and riparian habitats from a variety of urban sources.

California Endangered Species Act and California Native Plant Protection Act

The California Endangered Species Act (CESA) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered (California Fish and Game Code, Chapter 1.5, Sections 2050-2116). In accordance with the CESA, the CDFG has jurisdiction over state-listed species. The CDFG regulates activities that may result in "take" of individuals listed under the Act (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the Fish and Game Code. The CDFG, however, has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification." The California Native Plant Protection Act (CNPPA) preserves, protects, and enhances endangered and rare plants in California. It specifically prohibits the importation, take, possession, or sale of any native plant designated by the California Fish and Game Commission as rare or endangered, except under specific circumstances identified in the Act.

The only state-listed plant species known to occur within the City limits is the Tiburon Indian paintbrush in the Coyote Ridge area. State-listed animal species that regularly occur within wetland, grassland, and other habitats within the City limits include the California tiger salamander, California clapper rail, black rail, bald eagle, California least tern, and salt marsh harvest mouse.

Other Provisions of the California Fish and Game Code

The California Fish and Game Code includes regulations governing the use of, or impacts to, many of the state's fish, wildlife, and sensitive habitats.

The CDFG exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of Sections 1601 - 1603 of the Fish and Game Code. The Fish and Game Code requires a

Streambed Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or waterbody and for the removal of riparian vegetation. Provisions of these sections may apply to modifications of sensitive aquatic habitats and riparian habitats within the city.

Other regulations in the Fish and Game Code provide protection for native birds, including their nests and eggs (Sections 3503, 2513, and 3800). These regulations prohibit all forms of take, including disturbance that causes nest abandonment and/or loss of reproductive effort. Raptors (i.e., eagles, falcons, hawks, and owls) are specifically protected under Fish and Game Code Section 3503.5. Take of non-game mammals is limited under Fish and Game Code Section 4150 and take of mountain lions is restricted under Fish and Game Code Section 4800. In addition to its' status as a state-listed species, the salt marsh harvest mouse is also a fully protected species under Section 4700 of the Fish and Game Code.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is a state law that requires state and local agencies, such as the City of San José, to document and consider the environmental implications of their actions. CEQA and the CEQA Guidelines provide guidance in evaluating impacts of projects to biological resources and determining which impacts will be significant. CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Under CEQA Guidelines Section 15065, a project's effects on biotic resources are deemed significant where the project would affect any of the following:

- substantially reduce the habitat of a fish or wildlife species;
- cause a fish or wildlife population to drop below self-sustaining levels;
- threaten to eliminate a plant or animal community; or
- reduce the number or restrict the range of a rare, endangered or threatened plant or animal.

In addition to the Section 15065 criteria that trigger mandatory findings of significance, Appendix G of the CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. These impacts include substantial adverse effects on special status species, sensitive habitats or natural communities, and fish or wildlife movement.

Section 15380(b) and (c) of the CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. The CDFG has produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists". Species on these lists either are of limited distribution or the extent of their habitats has been reduced substantially, such that a threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA Guidelines Section 15380(b).

The California Native Plant Society (CNPS), a non-governmental conservation organization, has developed lists of plant species of concern in California. Vascular plants included on these lists are defined as follows:

List 1A	Plants considered extinct.
List 1B	Plants rare, threatened, or endangered in California and elsewhere.
List 2	Plants rare, threatened, or endangered in California but more common elsewhere.
List 3	Plants about which more information is needed - review list.
List 4	Plants of limited distribution-watch list.

These CNPS listings are further described by the following threat code extensions:

.1—seriously endangered in California;
.2—fairly endangered in California;
.3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing on List 1B or List 2 are, in general, considered by the California Department of Fish and Game to meet the CEQA's Section 15380 criteria, and adverse effects to these species may be considered significant. Impacts to plants that are listed by the CNPS on List 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those on List 1B or List 2, impacts to them are less frequently considered significant.

San Francisco Bay Conservation and Development Commission Permit Program

The San Francisco Bay Conservation and Development District (BCDC) is a state agency created in 1965 to regulate development in the Bay and along its shoreline for the purpose of limiting and controlling the amount of fill placed in the Bay. It is necessary to obtain a BCDC permit prior to undertaking most work in the Bay or within 100 feet of the shoreline, including filling, dredging, shoreline development and other work. There are several different types of permit applications, depending on the size, location, and impacts of a project.

In response to climate change and the challenges that it will present to the Bay Area, BCDC developed a Climate Change Planning Program to focus on developing strategies to reduce the region's vulnerability to the impacts of climate change, including sea level rise.

BCDC permitting activities are guided by an adopted San Francisco Bay Plan, which is amended periodically to keep it current. The BCDC currently is considering amendments to the Bay Plan that address tidal marshes, climate change, and safety of fills.

Regional Programs

Habitat Conservation Plan /Natural Community Conservation Plan (HCP/NCCP)

A HCP/NCCP is currently being prepared for the Santa Clara Valley. The Santa Clara Valley HCP/NCCP is a regional partnership between six local partners (the County of Santa Clara, Santa Clara Valley Transportation Authority, Santa Clara Valley Water District, and the Cities of San José, Gilroy, and Morgan Hill) and two wildlife agencies [the California Department of Fish and Game and the U.S. Fish and Wildlife Service]. One of the primary purposes of the HCP/NCCP is to

provide a framework for the local partners and landowners to complete projects while protecting at-risk species and their essential habitats, some of which occur only in Santa Clara County.

The Gilroy City Council voted on March 28, 2011 to notify the other partners that they would withdraw from the Santa Clara Valley HCP/NCCP process but on May 16, 2011 at a subsequent Gilroy City Council meeting, voted to resume participation in the plan process. The City of Gilroy occupies approximately 12,700 acres of the area addressed in the December 2010 Draft HCP/NCCP circulated for public review.

The HCP/NCCP seeks to protect and enhance ecological diversity and function in southern Santa Clara County. Adoption of a final HCP/NCCP is anticipated no earlier than late 2012.

If adopted, the HCP/NCCP plans to address listed species and species that are likely to become listed during the plan's proposed 50-year permit term and associated habitats. The species of concern include, but are not limited to, the California tiger salamander, California red-legged frog, western burrowing owl, Bay checkerspot butterfly, and a number of species endemic to serpentine grassland and scrub.

The Draft Santa Clara Valley HCP/NCCP also recognizes the preservation and, if possible, enhancement of the linkage between the Santa Cruz Mountains and the Diablo Range as an important conservation objective and analyzes potential connections through the Coyote Valley.

It is anticipated that projects that could be covered by the HCP/NCCP would be subject to a number of measures concerning avoidance and minimization of impacts to covered species and habitats through project design or construction or measures (such as preconstruction species surveys and seasonal restrictions on construction activities) to directly protect species. There are anticipated to be several "no take" species that, due to their rarity or regulatory status (e.g., state fully protected species), would not be able to be "taken" by a project that is covered by the HCP/NCCP.

Santa Clara Valley Water District Permits

The SCVWD requires permits for all well construction and destruction work, most exploratory boring for groundwater exploration, and projects or work that occurs within 50 feet of any watercourse in Santa Clara County. Permits are required under the SCVWD's Water Resources Protection Ordinance (06-1) and the District Well Ordinance (90-1).

City of San José

San José 2020 General Plan

Existing policies in the City of San José General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Relevant General Plan Policies that directly address reducing and avoiding biological resources impacts include the following:

- Greenline/Urban Growth Boundary Goals Policy #1
- Woodlands, Grasslands, Chaparral and Scrub Policies #1, 2, and 4-8
- Riparian Corridors and Upland Wetlands Policies #1-6 and 8
- Bay and Baylands Policies #1-6

- Species of Concern Policies #1-4
- Urban Forest Policies #2, 3, and 7-9
- Trails and Pathways Policy #3
- Soils and Geologic Conditions Policy #4

Tree Removal Ordinance

The City of San José Tree Removal Controls (San José Municipal Code, Sections 13.31.010 to 13.32.100) serve to protect all trees having a trunk that measures 56 inches or more in circumference (18 inches in diameter) at the height of 24 inches above the natural grade of slope. The ordinance protects both native and non-native tree species. A tree removal permit is required from the City of San José for the removal of ordinance-sized trees. On private property, tree removal permits are issued by the Department of Planning, Building and Code Enforcement. Tree removal or modifications to all trees on public property (e.g., street trees within a parking strip or the area between the curb and sidewalk) are handled by the City Arborist (with the City's Department of Transportation). In addition, any tree found by the City Council to have special significance can be designated as a heritage tree, regardless of tree size or species. It is unlawful to vandalize, mutilate, remove, or destroy such heritage trees. In 2010, there were over 200 trees listed on the City of San José's Heritage Tree list (refer to Appendix E).

Post-Construction Urban Runoff Management Policy (City Council Policy 6-29)

The purpose of the City Council's Post-Construction Urban Runoff Management Policy, is to reduce storm water pollution in aquatic habitats, i.e., in streams, creeks, and rivers, including those within the City limits that flow into San Francisco Bay. It establishes an implementation framework, consistent with Santa Clara Valley Urban Runoff Pollution Prevention Program National Pollutant Discharge Elimination System MS4 Permit requirements, for incorporating storm water runoff pollution control measures into new and redevelopment projects to reduce storm water runoff pollution from such projects to the maximum extent practicable in compliance with the federal Clean Water Act. The Policy requires all new, redevelopment, and expansion projects to implement post-construction best management practices (BMPs) and treatment control measures (TCMs) to the maximum extent practicable. This policy also establishes specified design standards for post-construction TCMs for applicable projects.

Any new development or redevelopment project in the City that creates, adds, or replaces 10,000 square feet or more of impervious surface area, or new streets, roads, highways and freeways built under the City's jurisdiction that create 10,000 square feet or more of impervious surface area, are required to comply with this policy.

Post-Construction Hydromodification Management Policy (City Council Policy 8-14)

The purpose of this policy is to control hydromodification impacts from new and redevelopment projects where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams, and creeks. It establishes implementation framework, consistent with the NPDES Municipal Permit requirements, for incorporating measures into the City's development review and approval process to control hydromodification impacts from new and redevelopment. The policy establishes specified performance criteria for Post-Construction hydromodification control measures (HCMs) and identifies projects that are exempt from HCM requirements. Any new or redevelopment project in the City that creates or replaces one (1) acre or

more of impervious surface ("Group 1 Projects") must be designed and built to control project-related hydromodification, where such hydromodification is likely to cause increased erosion, silt pollutant generation, or other impacts to beneficial uses of local rivers, streams, and creeks.

City of San José Riparian Corridor Policy

The Riparian Corridor Policy sets guidelines on how areas along natural streams should be treated and establishes development guidelines for general site design, as well as guidance for the design of buildings, landscaping, and public recreation facilities related to their interface with riparian corridors. It also provides guidelines for operational activities within natural stream areas, such as vegetation removal, erosion control, flood control, and construction. The riparian policy indicates that "all buildings, other structures (with the exception of bridges and minor interpretative structures that provide information to visitors), impervious surfaces, outdoor activity areas (except for passive or intermittent activities) and ornamental landscaped areas should be separated a minimum of 100 feet from the edge of the riparian corridor (or top of bank, whichever is greater)." The City's policy allows for exceptions based on adjacent land uses and setbacks, existing setbacks, and other factors. The setback for a particular project is typically determined on a case-by-case basis.

3.5.2 Thresholds of Significance

For the purposes of this PEIR, a biological resources impact is significant if implementation of the proposed *Envision San José 2040 General Plan* would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; or
- Have a substantial adverse effect on any aquatic, wetland, or riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; or
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act, including, but not limited to marshes, vernal pools, or shorelines through direct removal, filling, hydrological interruption, or other means; or
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.5.3 Biological Resources Impacts

3.5.3.1 *Overview*

Activities that will occur as a result of the proposed General Plan will ultimately result in conversion of some of the City's remaining natural habitats into structures, pavement (roadway and parking areas), landscaping, and other habitats that will not be as suitable for sensitive species as existing habitats. General Plan-related activities will also increase the number of people and vehicles within the City, which will also affect biological resources.

In assessing impacts to biological resources, two general sets of activities were considered as a part of the project:

- General Plan activities, which include new development, new and modified General Plan goals and policies, and any other activities that could impact biological resources within the City's existing Urban Growth Boundary (UGB).

- Additional activities and development that are not currently ongoing or in place, but that are reasonably foreseeable in the future as a result of land-use designations or goals and policies that apply to areas in the City limits but outside the UGB (*i.e.*, Alum Rock Park). Examples of such activities include development of buildings and infrastructure outside the UGB in accordance with General Plan land use designations and zoning (*e.g.,* rural residential, park, cemetery or golf course developments).

This assessment of impacts to biological resources is mainly dependent on the overall footprint of development, the amount of such development that will occur in or adjacent to natural areas, the

amount of additional development occurring outside the UGB, and the increase in the number of people visiting natural areas for recreational purposes. The footprint of the development occurring in natural areas or in areas with biological resources determines the amount of habitat that will be directly lost due to such impacts as clearing, grading, and tree removal. The footprint of future development is also related to the amount of hardscape and associated storm water runoff. Increased storm water runoff can result in accelerated erosion, downcutting of streams, sedimentation in aquatic habitats, and transport of contaminants.

An increase in the number of people residing in the area may lead to an increase in the number of people accessing and utilizing nearby natural areas, resulting in more indirect impacts from trampling, soil compaction, vegetation damage, increased erosion, and disturbance, including pets (e.g., disturbance of nesting birds and other sensitive wildlife species). Increases in human occupancy, concentration, or activity also leads to increases in urban-associated, native and non-native predators, increases in predation by pets or feral animals, increases in wildlife mortality as a result of vehicle strikes on new roads or from increased traffic on existing roads, and potentially a reduction in the quality of habitat from the introduction of invasive non-native vegetation, replacement of natural vegetation with ornamental (frequently exotic) vegetation, use of pesticides, herbicides and rodenticides, increased water use that is accompanied by changes in local humidity and ground moisture, and increased potential for hazardous material spills reaching waterways.

The *Envision San José 2040 General Plan* directs housing and job growth to areas within the City's existing Urban Growth Boundary and excludes new development within the Coyote Valley Urban Reserve and the South Almaden Valley Urban Reserve. In general, the greatest impacts to biological resources within the UGB could occur where future development is proposed in the Planning Areas with the largest areas of natural habitats and biological resources; these are concentrated in three areas within the UGB:

- The northern part of San José, including the North San José Planning Area and the Alviso Planning Area;
- The southern part of San José in the Coyote Planning Area; and
- In eastern San José in the Evergreen Planning Area.

In each of the three Planning Areas mentioned above, the parts within those areas designated as Employment Lands also have the largest amount of remaining natural habitat. A discussion of specific impacts within the City follows.

3.5.3.2 *Direct Impacts to Natural Communities and Habitats*

Natural communities and habitats that may be impacted by future development and redevelopment within the urbanized areas of San José are identified for the 13 Planning Areas and each of the planned growth areas (Villages, Employment Lands, and Specific Plan areas) in Appendix E (refer to pages 142-196). These habitats and relevant proposed General Plan policies that would avoid or minimize impacts are described below.

Impacts to Developed Habitats

Developed areas comprise the most abundant habitat type within the City limits and are by far the most abundant habitat found within the UGB. Most direct impacts, involving construction-related

and added development effects, are expected to occur within urban and suburban developed habitat where biological resources are more limited than in less developed areas.

The vast majority of the planned growth areas are dominated by developed habitats. There are several types of developed habitat, representing a range of suitability for and ability to support biological resources. Within developed habitats, urban and suburban uses are the most abundant (particularly within planned growth areas) and also represent the most intensive land use, although some areas mapped within this category contain vacant, grassy, infill lots that provide lower-quality and fragmented habitat for native species. Of the developed habitat types, rural residential typically is the least intensively developed and the most likely to provide relatively abundant resources for native species.

Direct, development-related impacts to developed habitat may lead to land use changes but will not result in a loss of developed habitat. Rather, developed habitat may be converted from one type to another (*e.g*., commercial to mixed use), or undergo a change in intensity of development. Typically, both of these changes will result in less intensively developed areas becoming more intensively developed, although in some cases, parks may be installed where more intensive development is currently located. While developed habitats largely provide sparse, fragmented, disturbed, or minimal biological resources compared to more natural habitats, some loss of biological resources due to changes in developed habitat can occur where urban adapted species or remnants of natural habitats and populations are still present (see *Impacts to Special Status Animals*, below). Biological impacts due to conversion of developed habitats to more intensive uses also may include a temporary reduction or permanent loss of mature trees from an area (see Impacts to Community Forest, below); an increase in hardscape, particularly in job-related development, resulting in an increase in urban runoff, perhaps with increased contamination due to an increase in roadways, parking areas, and traffic, and decreased groundwater infiltration (see also Impacts to Aquatic and Wetland Habitats, below); a reduction in foraging or nesting/breeding habitat for wildlife; and possibly a loss of marginally suitable habitat for, or even individuals of, rare plant species at the urban edge. It is likely that a reduction in biotic diversity will be one outcome, with fewer bird and reptile species occupying urban spaces as the trees, fields, and natural spaces become fewer.

In the Alviso Planning Area, the use of some developed habitats, such as levees, landfills, and wastewater treatment plants may be intensified. For example, if landfill uses are intensified with greater areas of waste exposed, secondary impacts could occur, such as increased predation in other habitat areas by an increased number of gulls that are attracted to the landfill. It is currently proposed that landfill sites would contain more related activities on top of inactive waste burial areas, adding to general activity on the landfills and decreasing inactive open spaces. If levees receive more recreational use or are improved, wildlife that uses these areas may be disturbed by increased human presence. Levees may require repair which would temporarily remove established habitat uses (e.g., by blocking existing burrows used by burrowing owls and small mammals or eliminating nesting habitat used by shorebirds).

Outside of the UGB and within the City limits developed habitat is limited. Impacts to currently developed habitat outside of the UGB are likely to mainly involve increased development density within some rural residential, suburban, and park areas as already existing developments are further developed or redeveloped.

Additionally, increases in structures, conversion of quarries on Communications Hill, or intensification of use of existing landfills or waste treatment facilities may occur due to increasing population pressure within the UGB.

Impacts to developed habitats resulting from proposed development under the General Plan are expected to be less than significant because of the relatively low value of these habitats for biological resources compared to more natural habitats, their abundance within the region and state, and the proportionately low magnitude of impacts to native plants and animals likely to occur as one already developed land-use type is converted to another.

Impacts to Agricultural Habitat

Agricultural habitats comprise five percent of the land within the City limits, and most of this is located within the UGB, mostly in the the two existing urban reserves, and outside the UGB in the Coyote Greenbelt. Direct impacts would occur to agricultural habitats in the North San José, Edenvale, Berryessa, Evergreen, and Coyote[69] Planning Areas due to loss of habitat and habitat conversion resulting from development.

Agricultural habitats include a wide range of management regimes, vegetation structure, and level of anthropogenic disturbance, from semi-natural hayfields that are grazed and/or annually mowed to highly controlled, monocultural row crops that are subject to intense levels of planting, tending, agricultural chemical applications, and harvesting disturbance annually. Also included in this category are orchards of fruit and nut trees spaced in rows with varying levels of herbaceous management in between rows, as well as outbuildings, greenhouses, and agricultural facilities. While the quality of such habitats is often relatively low compared to more natural or native-dominated habitats, these areas are some of the largest non-developed lands in and near the urban areas of San José. This fact alone makes them attractive to wildlife within the Santa Clara Valley, particularly in allowing movement, migration, and dispersal (See *Impacts to Wildlife Movement* below). Furthermore, pastureland and fallow agricultural fields often support grassland-associated species, potentially providing relatively high-quality, grassland-like habitat in areas (such as portions of Coyote Valley).

Most of the impacts would be to hayfields and row crops within Employment Land Areas. With the exception of agricultural habitats in north Coyote Valley and portions of the Edenvale and Evergreen Planning Areas that are located at the boundaries of the UGB, impacts to agricultural habitats would occur at urban infill sites. A large area of agricultural land in central and southern Coyote Valley and smaller parcels in the South Almaden Valley within the City limits and outside the UGB are not proposed for urban development under the *Envision San José 2040 General Plan* (refer to Figure 3.5-1 for locations of agricultural habitat) and would remain open lands adjacent to grassland, oak woodland and developed habitat.

As previously described, intensively cultivated agricultural lands support relatively few wildlife species due to the frequent disturbance associated with farming, the low stature of the crops produced in most of these areas, and the lack of structural diversity in the vegetation in these areas. Rodent control is practiced throughout many of the orchards and agricultural fields where crops are grown, reducing the abundance of small mammals and the suitability of these fields as foraging habitat for raptors and larger mammals that prey on smaller mammals. Some agricultural areas can experience

[69] Impacts to agricultural land could occur from build-out of previously approved development in the North Coyote Valley Employment Lands area.

fairly heavy wildlife use along the margins of croplands and orchards, at least by some raptor, small mammal, and reptile species that also use grassland habitats.

Due to the relatively high levels of disturbance associated with already existing agricultural habitats that could be developed under the proposed General Plan, the relative abundance of suitable habitat for species such as raptors, other birds, and small mammals that use agricultural habitats both within the region and the state (e.g., when grassland availability in the vicinity in the Diablo Range and Santa Cruz Mountains is considered), impacts of development allowed by the General Plan to agricultural habitats within San José would be less than significant.

Impacts to Grassland Habitats

Grasslands comprise the most abundant natural habitat within the City limits of San José. This designation encompasses a wide range of habitat quality and ability to support special-status plant and animal species, with occurrences ranging from more disturbed areas of California annual grassland adjacent to developed habitat to extensive, high-quality serpentine bunchgrass grassland habitat. As shown on Figures 3.5-1, 3.5-2, 3.5-3, and 3.5-4, these habitats are found along San José's eastern and southern edges, as well as in Alviso in northern San José, at San José International Airport and on Communications Hill near SR 85 in central San José, and in the Silver Creek Hills and Coyote Ridge in southern San José.

Within each of these grassland habitats, development impacts may result in a direct, permanent loss of habitat or the habitat areas may be used for construction staging, access, and other construction related activities (such as stockpiling and materials storage). Impacts may also occur in grassland areas not directly lost to or affected by development due to an increase in human presence and population numbers leading to increased public use of these habitats. These effects include trampling, soil compaction, increased erosion, and vegetation impacts associated with hiking, horseback riding, off-highway vehicle (OHV) use, off-road biking, and other such recreational activities. Grasslands located adjacent to new developments may experience land use changes such as maintenance of new fire breaks, leading to increased levels of disturbance related to mowing and herbicide use. Grasslands adjacent to new development will also be affected by drift of pesticides and herbicides from application areas, increased fire events, increased numbers of urban predators, spill of night lighting into grasslands, increased noise from developed areas, and invasion or spread of exotic plant species all of which will change the composition of vegetative cover and the species associated with the habitat.

<u>California Annual Grassland</u>

California annual grassland is common throughout the state and within the South Bay, and can occur on a variety of landforms and soil types. Depending on the level of past disturbance due to mowing, spraying, non-native plant invasions, and grazing, California annual grassland can still provide high habitat values for a variety of common native plant and wildlife species, and it may also support special-status plant and wildlife species. However, in the San José area this habitat type generally supports a lower abundance of most special-status plants and animals than grasslands dominated by native plants, such as serpentine grassland. Small areas mapped as California annual grasslands occur within growth areas in the Alviso Planning Area, Communications Hill Specific Plan in the South Planning Area, and North Coyote Valley Employment Lands in the Coyote Planning Area. In addition, in some planned growth areas, areas mapped as developed golf courses/urban parks also support large, natural grassy expanses, and in some cases provide wildlife habitat adjacent to riparian

corridors. Large, relatively natural grassland areas within parks are found in the Berryessa, Cambrian/Pioneer, Central, Edenvale, Evergreen, and the North Planning Areas. No parcels mapped as California annual grassland occur within any proposed corridors and villages. Development of vacant lands and entitled parcels also would impact California annual grasslands where they occur on hillsides and in lowlands within the UGB.

Impacts to California annual grassland from future development allowed under the General Plan would be relatively limited compared to the vast extent of such habitat within the state and region; particularly, impacts within the UGB would have a minimal impact on the distribution of this habitat, and the plant and animal species it supports regionally because growth would occur within the UGB as urban infill and not fragment large existing areas of grassland in surrounding hillside areas of the Diablo Range and Santa Cruz Mountains. Non-serpentine rock outcrops in grasslands are less common, but known outcrops are steep and remote, outside the limits of proposed urban development, and are not expected to be subjected to development and direct loss under the General Plan for that reason. Impacts to California annual grassland from future development allowed under the General Plan, therefore, would be less than significant.

Serpentine Grasslands (Sensitive Grassland Habitats)

As shown in Table 3.5-2, serpentine grasslands (including serpentine bunchgrass grassland, serpentine outcrops, and serpentine seeps) tend to support a higher concentration of native plant species than observed in California annual grasslands. They also are more fragile and susceptible to direct and indirect impacts because plants and animals are adapted to the unique geologic, soil, and biotic conditions associated with serpentine soils. As previously described, serpentine grasslands are reported to have extremely high levels of magnesium, chromium, and nickel, low concentrations of nutrients such as calcium and nitrogen, and low water-holding capacity soils. A unique group of vascular plant species, which can tolerate the relatively high magnesium to calcium ratio, has evolved in response to these conditions.

Many exotic species in California, including the non-native grasses that have become established in much of the non-serpentine grasslands in the state, are not able to tolerate, or at least do not thrive in, the extremely dry conditions and infertility of serpentine soils. As a result, serpentine grasslands support high-quality native plant communities, including rare plants such as the federally listed Santa Clara Valley dudleya and Metcalf Canyon jewel-flower. In turn, several invertebrate species, including the federally threatened Bay checkerspot butterfly, depend on serpentine grasslands because their host food plants are found primarily in these habitats.

Construction-related impacts in California annual grassland that would typically be classified as minor, temporary impacts (such as disturbance within construction zones adjacent to roadways or development areas), are not likely to be so easily overcome in serpentine areas and may even permanently degrade high-quality serpentine grassland habitat due to physical disturbance of surface soil and plant materials. Additionally, serpentine grasslands are much more susceptible to indirect impacts such as those occurring from increased recreational use and trampling, increases in non-native grass cover, and habitat deterioration resulting from increased nitrogen deposition (see Indirect Impacts to Serpentine Communities from Increased Nitrogen Deposition, below). While most invasive species do not invade serpentine habitats due to the chemical composition and fertility of serpentine soils, a small suite of plants, such as barbed goatgrass, do tolerate serpentine soils and can exclude native species and degrade serpentine habitat.

Within the UGB, planned growth areas containing serpentine grasslands occur in the North Coyote Valley Employment Lands in the Coyote Planning Area, New Edenvale in the Edenvale Planning Area, and in the Communications Hill Specific Plan in the South Planning Area (refer to Figures 3.5-1 through 3.5-3). Outside the UGB and within the City limits, limited new development, such as park improvements or hillside development in or near Alum Rock Park and foothill areas, as allowed in the General Plan and zoning ordinance, could occur in areas supporting serpentine grasslands.

Due to the sensitivity of serpentine grassland habitats, their relative rarity within the region and state, and their ability to support many special-species endemic to these habitats (see Impacts to Special Status Plants and Impacts to Special Status Animals, below), development allowed by the General Plan could result in substantial adverse impacts to all three types of serpentine grasslands (serpentine bunchgrass grasslands, serpentine rock outcrop/barrens, and serpentine seep).

Impacts to Riparian Forest and Scrub Habitats

Riparian habitats occupy approximately two percent of the land within the City limits, with much of this occurring within the UGB. Riparian habitats are important natural habitats for wildlife that still occurs within the City. Within the UGB, riparian forests, woodlands, and scrub occur in linear bands along waterways through the surrounding dense neighborhoods that dominate the Santa Clara Valley floor. Such urban riparian areas offer natural cover, nest sites for a variety of birds and mammals, and food and watering resources, and they protect, cool, and enrich adjacent and downstream aquatic habitats. More natural types of riparian habitat that are much less disturbed are found outside the UGB. An example is California sycamore alluvial woodland, a sensitive habitat type that occurs within the City limits but outside the UGB, mostly in and near the Coyote Planning Area.

Localized impacts to riparian habitat may occur due to roadway bridge improvements such as the Senter Road Interchange at I-280, which is a proposed improvement to the City's roadway network. In planned growth areas, as well as within any vacant lands or entitled parcels inside and outside the UGB, direct impacts to riparian habitats such as soil disturbance, placement of structures (such as outfalls), temporary dewatering, trampling, and tree removal, could also occur during construction of future development.

Increasing development and population also could result in indirect impacts to riparian habitats in the City. For example, additional population pressure is expected to lead to greater recreational use, ad hoc or planned, of rural and especially urban riparian corridors. This may lead to increases in vegetation trampling, soil compaction, and soil erosion. Increasing populations will lead to greater predation pressure on wildlife within riparian areas, as urban adapted predators and feral and outdoor pet cats utilize these corridors to hunt birds and small mammals (see Impacts to Special-Status Animals, below). Additionally, homeless persons often live or camp in urban riparian corridors, trampling large areas, disrupting wildlife with their presence, and even catching fish and other wildlife within the corridors for food. As the City expands, it is uncertain whether homeless populations will increase as some function of increasing overall population size, or if new jobs and employment opportunities expected to occur under the General Plan will lead to an increase in average employment rates and a subsequent decrease in use of riparian corridors by homeless persons. Another indirect impact that may occur is increased channel erosion (downcutting) and more extreme flash flow regimes within riparian corridors due to an increase in storm water runoff from surrounding hardscaped areas, eroding away riparian vegetation/habitat. Such an impact will be particularly problematic if it occurs in areas that have not experienced much downcutting previously, or within habitat types that only occur on low, shallow, braided channels because soil materials and

plant cover would be removed and could also damage habitat downstream due to increased sediment loads. Water quality within the streams will be affected if additional contaminants enter the watershed such as increases in petrochemicals, brake dust, pesticides, herbicides, and fertilizers use, soil erosion from construction, and other contaminants (see Impacts to Aquatic and Wetland Habitats, below). Increased night lighting and increased noise from developed areas may also affect the quality of riparian habitats in areas close to new development in that the behavior of wildlife could change (e.g., avoiding well-lighted areas) and there could be an increase in predation on some species. Finally, some riparian areas may experience serious invasions of common landscaping species from nearby developments, such as iceplant, ivies, and periwinkle. This is a problem where it occurs because these plants are lower quality sources of food and tend to limit the growth of other plants in the understory that are good sources of food and cover for wildlife.

Historically, urban growth has occurred along creeks and waterways within the City. Because streams flow through heavily urbanized areas, there are many planned growth areas that either contain riparian habitats or are adjacent to them (refer to Figures 3.5-1 through 3.5-3). In most cases, riparian habitats within the UGB are perennial or long-period intermittent streams mapped as willow riparian forests, woodlands, and scrub, although within the outer hills some areas of intermittent or even ephemeral mixed riparian forest and woodlands occur.

A number of unmapped, typically unforested and/or channelized creeks, which are often higher-order, tributaries of larger creeks, also enter the area within the City limits and would be considered low quality riparian habitat due to limited plant cover and food sources. Planned growth areas adjacent to or containing such features include several within the Almaden, Alum Rock, Cambrian/Pioneer, Edenvale, Evergreen, and South Planning Areas.

Due to the sensitivity of riparian habitats and their ability to support special-species (see Impacts to Special Status Plants and Impacts to Special Status Animals, below), development allowed by the General Plan could result in substantial adverse impacts to these habitats.

Impacts to Chaparral and Scrub Habitats

Chaparral and coastal scrub habitats comprise a fairly low proportion of the area within the City limits (approximately two percent), with only approximately a quarter of this occurring within the UGB. These habitats include the sensitive mixed serpentine chaparral habitat type. Scrub and chaparral habitats tend to be located in foothill areas on the edges of the UGB and in outer foothills outside the UGB, and no scrub or chaparral is mapped as occurring within any planned growth areas or specific plan areas. Sensitive mixed serpentine chaparral occurs along the eastern periphery of the New Edenvale Employment Land Area.

Direct impacts to this habitat type can occur from development and construction staging, access, or other construction-related activities. Indirect impacts may occur to this habitat due to an increase in recreational usage of scrub and chaparral areas on the edges of the area within the UGB and in the more extensive stands of chaparral and scrub found elsewhere within the City limits, but outside the UGB. As with other natural habitats, such increased usage may lead to increased trampling, an increase in spread of noxious weeds, soil compaction, and soil erosion.

Chaparral and scrub habitats are often adapted to specific fire regimes, with representative species sprouting or germinating after overlying vegetation is removed by fire. Increases in human usage, or expansion of human development into such area, may alter fire frequency, which can affect these

habitats if weed invasions increase or are more frequent. Fire suppression can lead to the development of a greater fire fuel load in these areas due to reduced fire frequency in a particular areas. During the period of fire suppression, the number of native plants and wildlife may decrease in the area due to a thickening canopy and subsequent changes in vegetation structure. Native plants adapted to scrub habitats are often fire adapted and show the greatest abundance following fires as well, so these species may be reduced when the period between fires is increased. When fires finally do occur, they may be hotter than normal due to the greater fuel load that has developed, potentially killing shrubs that would have resprouted after a less intense fire. Increased human usage can also lead to an increase in fire initiation events in some areas, due to sparks, campfires, cigarettes, and hot motor vehicle tail pipes.

The vast majority of the direct impacts to chaparral and scrub habitats under the General Plan, such as occurring from development and construction staging, access, or other construction-related activities, are expected to be located in vacant lands and entitled parcels, due to road expansion, or due to growth occurring outside the UGB.

In general, impacts to scrub and chaparral habitats resulting from allowable development under the General Plan are expected to be less than significant due to the very limited extent of projected impacts compared to the regional and statewide abundance of these habitats. However, due to the rarity and sensitivity of serpentine habitats, impacts to mixed serpentine chaparral habitat from future development could be significant.

Impacts to Oak Woodland Habitat

Oak woodlands provide ample, high-quality, and structurally varied habitat for wildlife and contribute greatly to the aesthetic character of the natural areas surrounding San José. Oak woodlands comprise a substantial portion of the area within the City limits (seven percent), but most of the stands (95 percent of oak woodlands mapped within the City limits) are located outside the UGB in the eastern and southern foothills.

No oak woodlands are mapped within any planned growth areas such as villages, corridors, or employment land areas. Most direct impacts to and loss of these habitats under the General Plan within the UGB will occur through development of vacant lands and entitled parcels (such as the *Valley Oak Woodland* within the North Coyote Valley Employment Lands in the Coyote Planning Area) or due to roadway improvements or similar activities in areas outside of the UGB.

Development in proximity to oak woodlands can also result in indirect impacts. Several types of indirect impacts may occur due to the increased population growth and subsequent increased use of native habitats within the City limits. Increases in resident population density may lead to an increased usage of these habitats, resulting in more invasive weed spread, trampling impacts, soil compaction, increased erosion, and vegetation impacts associated with hiking, horseback riding, off-road vehicle use, off-road biking, and other recreational activities. Additionally, more human activities in these areas may contribute to an increase in the spread of *Phytophthora ramorum*, the organism responsible for sudden oak death, which could impact oak stands within oak woodlands.[70]

[70] *P. ramorum* is known to spread through infected plants and wind-blown rain, as well as contaminated irrigation water, soil, or gravel substrates. The fungus can also be moved unknowingly in used pots or contaminated potting mix. (Source: U.S. Department of Agriculture. *Phytophthora ramorum Stopping the Spread.* Available at: <http://www.aphis.usda.gov/publications/plant_health/content/printable_version/SBR_StopTheSpread.pdf>.

Due to the typical high quality of oak woodlands in Santa Clara County, and continuing loss and increasing rarity of this habitat type within the state, impacts to valley oak woodlands, blue oak woodlands, foothill-pine oak woodlands, and coast live oak woodlands and forests could be significant. Future impacts to mixed oak woodland and forest and mixed evergreen forests also could be significant, depending on the density of mature oak stands and general habitat quality in such areas subject to direct loss or other intensive impacts.

Impacts to Aquatic and Wetland Habitats

Fish, amphibians, reptiles, aquatic insects and certain mammals need wetlands as a place for their young to be born and grow. Seasonal wetlands, freshwater marshes, ponds, reservoirs, and other aquatic habitats have significant wildlife benefits and values and many animals depend on wetlands for food, nesting or breeding, and resting spots. Fish, amphibians, reptiles, aquatic insects and certain mammals require wetlands and aquatic habitats for their survival and development. Aquatic habitats and wetlands, through trapping sediment and other constitutalso improve and control overall water quality and watershed functions within the City. Additionally, wetlands are a relatively uncommon feature on the landscape. Together, aquatic and wetland habitats comprise approximately seven (7) percent of the area within the City limits. While large amounts of these habitats occur outside the UGB, near San Francisco Bay in the northern portion of the City and within and surrounding Calero and Anderson Reservoirs, smaller and/or isolated areas of both wetland and aquatic habitats occur scattered throughout the areas within the UGB. Some of these smaller wetlands within the UGB may be unmapped, particularly bench wetlands in riparian corridors and small, isolated seasonal wetlands in grassy infill parcels. Also, aquatic habitat within streams was typically mapped as riparian habitat.

Aquatic and wetland habitats within the City vary widely in their sources of hydrology and degree of anthropogenic disturbance, and range from natural, tidal marshes to man-made freshwater ponds and reservoirs. Wetlands serve an important function within the watershed by sequestering pollutants and protecting water quality. They are a rare and sensitive habitat. Both wetlands and aquatic habitats present unique and important habitats for many species of native plants and wildlife. These areas provide water for drinking, green vegetation and thick cover during seasons when surrounding vegetation is dormant, and necessary habitat for water-dependant insects (such as dragonflies, caddisflies, and mayflies), amphibians, fish, and waterbirds. Additionally, such habitats are often easily invaded by exotic invertebrates such as the New Zealand mud snail.

Loss of wetlands may occur due to shading impacts (such as when a bridge is widened) or by drainage or filling. Aquatic habitats are typically lost due to fill placement where aquatic vegetation or the bed of a channel, including associated organisms such as macroinvertebrates, are covered. Temporary impacts to wetlands could occur as a result of construction activities and need for access , while temporary impacts could occur to aquatic habitats as a result of dewatering for construction. For example, vegetation and soils in an aquatic or wetland habitat could be removed or flattened by construction equipment installing bridge piers or other supports within a waterway or wetland area.

Indirect impacts may occur to both aquatic and wetland habitat types as a result of increased hardscape within uplands leading to an increase in runoff, a decrease in infiltration and groundwater recharge, and possible increases in anthropogenic contaminants such as petrochemicals, brake dust, fuel, fertilizer, pesticides, herbicides, mercury, and unmetabolized drug compounds. Increasing population pressure may also lead to a greater demand being placed on reservoirs for either recreation (e.g., boating) or for water supply, while increased well installation in expanding rural

residential areas (if vacant lands or entitled parcels are developed in such areas) may contribute to decreased groundwater reserves. Increased night lighting and increased noise from developed areas may also affect the quality of wetland and aquatic habitats in areas close to new development.

Direct impacts to wetland and aquatic habitats may occur within developments or associated with infrastructure improvements planned in the North, Coyote, Cambrian/Pioneer, and Central/ Downtown Planning Areas (for example, the proposed Senter Road Interchange) and in smaller unmapped wetlands in other areas. While indirect impacts resulting from such changes such as hardscape increases are expected to be concentrated within planned growth areas within the UGB, these may affect aquatic and wetland habitats throughout the City, particularly in the north, where the majority of such habitats are located downstream of direct impact areas. Impacts related to indirect impacts such as recreational usage are likely to occur within reservoirs, such as Calero and Anderson Reservoir. Outside the UGB, impacts may occur to aquatic and wetland habitats due to land use changes or intensification and development of additional parks, agriculture, other recreational facilities, or rural residential areas. Due to the substantial wildlife functions and values and the relative rarity of aquatic habitats, loss of any of these habitats or reduction of water quality in wetland and aquatic habitats would be significant. In addition, any loss due to construction impacts (unless for restoration purposes) of tidal salt marsh and mudflats is potentially significant due to the rarity of these habitats and their extreme importance for special-status plant and wildlife species. However, few if any impacts to such sensitive tidal habitats are expected to occur during the proposed General Plan horizon, because these habitats are located outside of the planned growth areas, including the Alviso Specific Plan area, and outside the UGB in areas where no vacant lands or entitled parcels exist.

Proposed General Plan Policies and Actions That Reduce or Avoid Possible Adverse Impacts to Natural Communities and Wildlife Habitats

The proposed *Envision San José 2040 General Plan* includes updated policies that address reducing or avoiding impacts to natural communities and wildlife habitats. Revisions to existing policies clarify that mitigation or avoidance measures for impacts to sensitive natural communities are required as part of the City's development review process. Proposed General Plan Policies and Actions (from Chapters 3, 4, and 6) that provide program-level mitigation for impacts to sensitive natural communities and habitats within the City are identified below.

Balanced Resource Conservation Policy	
Policy ER-1.1	Continue to maintain the Greenline/Urban Growth Boundary and focus development and redevelopment within the existing urban envelope of the City.
Grassland, Oak Woodlands, Chaparral, and Coastal Scrub Habitats	
Policy ER-2.2	Prohibit the use of motorized off-road vehicles for recreation purposes in oak woodland, grassland, and hillside areas within the City to protect these limited resources.
Policy ER-2.4	Minimize the removal of ecologically valuable vegetation such as serpentine and non-serpentine grassland, oak woodland, chaparral, and coastal scrub during development and grading for projects within the City.
Policy ER-2.5	Preserve and protect oak woodlands, and individual oak trees. Any loss of oak woodland and/or native oak trees must be fully mitigated.

Policy ER-2.7	Preserve, protect, and manage serpentine grasslands and serpentine chaparral, particularly those supporting sensitive serpentine bunchgrass communities providing habitat for sensitive plant and animal species. Development will not be permitted on serpentine grasslands or chaparral supporting state or federal candidate or listed threatened or endangered plant or animal species. Appropriately managed grazing is encouraged on serpentine grasslands.
Policy ER-2.8	Prohibit planting of invasive non-native plant species in oak woodlands, grasslands, chaparral and coastal scrub habitats, and in hillside areas.
Riparian Corridors	
Policy ER-3.1	Ensure that new public and private development adjacent to riparian corridors in San José are consistent with the provisions of the City's Riparian Corridor Policy Study and any adopted Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP).
Policy ER-3.2	Ensure that the 100-foot setback from riparian habitat is the standard to be achieved in all but a limited number of instances, only where no significant environmental impacts would occur.
Policy ER-3.3	Design new development to protect adjacent riparian corridors from encroachment of lighting, exotic landscaping, noise and toxic substances into the riparian zone.
Policy ER-3.4	When disturbances to riparian corridors cannot be avoided, implement appropriate measures to restore, and/or mitigate damage and allow for fish passage during construction.
Bay and Baylands	
Policy ER-4.1	The baylands ecosystem shall be protected, preserved and restored in a manner consistent with the fragile environmental characteristics of this area and the interest of the citizens of San José in a healthful environment.
Policy ER-4.4	Avoid new development which creates substantial adverse impacts on the Don Edwards San Francisco Bay National Wildlife Refuge or results in a net loss of baylands habitat value.
Policy ER-4.5	Prohibit planting of invasive non-native plant species in or near baylands habitats.
Special Status Plants and Animals	
Policy ER-5.1	Preserve and restore habitat areas that support special-status species. Avoid development in such habitats unless no feasible alternatives exist and mitigation is provided of equivalent value.
Policy ER-5.2	Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.
Policy ER-5.3	Prohibit planting of invasive non-native plant species in natural habitats that support special-status species.
Urban Natural Interface	
Policy ER-7.2	Design development at the urban/natural community interface of the Greenline/Urban Growth Boundary (UGB) to minimize the length of the shared boundary between urban development and natural areas through clustering of

	development and locating development closest to existing development. Key areas where natural communities are found adjacent to the UGB include the Baylands in Alviso, the Santa Teresa Hills, Alum Rock Park, and Evergreen.
Policy ER-7.3	Lighting in developed areas adjacent to natural areas will consist of low-glare lighting. Any high-intensity lighting used near natural areas will be placed as close to the ground as possible and directed downward or away from natural areas.
Policy ER-7.4	Public facilities such as ballparks and fields that require high-intensity night lighting will be sited at least 0.5 mile from sensitive habitats to minimize light pollution, unless it can be demonstrated that lighting systems will not substantially increase lighting within natural areas (e.g., due to screening topography or vegetation).
Policy ER-7.5	Prohibit use of invasive species, citywide, in required landscaping as part of the discretionary review of proposed development.
Policy ER-7.8	Design and construct development to avoid changes in drainage patterns across adjacent natural areas and for adjacent native trees, such as oaks.
Sustainable Parks and Recreation	
Policy PR-6.5	Design and maintain park and recreation facilities to minimize water, energy and chemical (e.g., pesticides and fertilizer) use. Incorporate native and/or drought-resistant vegetation and ground cover where appropriate.
Policy PR-6.8	Encourage development of public and private recreational uses in rural and hillside areas that is low intensity and sensitive to geologic hazards, water resources, natural habitats, and visual impacts.
Community Forest	
Policy MS-21.8	For Capital Improvement Plan or other public development projects, or through the entitlement process for private development projects, require landscaping including the planting of new trees to achieve the following goals: 1. Avoid conflicts with nearby power lines. 2. Avoid potential conflicts between tree roots and developed areas. 3. Avoid use of invasive, non-native trees. 4. Remove existing invasive, non-native trees. 5. Incorporate native trees into urban plantings in order to provide food and cover for native wildlife species. 6. Plant native oak trees and native sycamores on sites which have adequately sized landscape areas and which historically supported these species.
Policy MS-21.9	Where urban development occurs adjacent to natural plant communities (e.g., oak woodland, riparian forest), landscape plantings shall incorporate tree species native to the area and propagated from local sources (generally from within 5-10 miles and preferably from within the same watershed).
Policy MS-21.10	Prohibit London plane trees from being planted in the Coyote Planning Area, which is located near the most significant stands of sycamore alluvial woodland in the City. Planting of this species is discouraged elsewhere, particularly near riparian areas. Prohibit holly-leaved oaks from being planted in areas containing stands of native oaks or in proximity to native oak woodland habitat.

General Provision of Infrastructure	
Policy IN-1.11	Locate and design utilities to avoid or minimize impacts to environmentally sensitive areas and habitats.
Water Supply, Sanitary Sewer and Storm Drainage	
Policy IN-3.11	The "modified floodplain design" is the preferred design for future flood protection facilities. Use the "widen-one-bank" and "trapezoidal channel" designs only when funding or right-of-way limitations make the use of the modified flood plain design impractical. For future development, consider factors such as flooding risks, proximity to waterways, and potential for implementing flood protection measures.
Accessible, Safe, and Well-Functioning Trails	
Policy TN-1.3	Design trail system alignments to minimize impacts and enhance the environment within sensitive riparian and other natural areas. Follow Riparian Corridor Goals, Policies, and Actions regarding trail design and development in proximity to riparian areas.
Urban Growth Boundary	
Policy LU-19.6	Use the Urban Service Area (USA) boundary as a tool to preserve the non-urban character of development on lands outside of the Urban Growth Boundary. To this end, limit all new development on lands outside of the USA as follows. a) Do not provide urban services to new development outside of the USA. b) Require that new development projects cause no significant increase for public services or infrastructure and are non-urban in terms of 1. Waste water generation rates. 2. Traffic generation rates. 3. Extent of grading, vegetation removal, drainage modifications or other alteration of the natural environment. 4. Noise or other nuisance potential. 5. Growth inducing potential. 6. Water consumption, excluding the environmentally beneficial use of recycled water. c) Distinguish between urban and non-urban uses in terms of water usage by limiting water consumption for new development to use of non-urban sources, including on-site well water and rainfall catchment. Use of one type of urban water source, recycled water, may be allowed. Irrigation of Open Hillside Areas with these water sources may be allowed provided that its use would not result in a substantial direct or indirect environmental impact upon sensitive habitat areas, special status species, geologic hazard avoidance or the visual environment.

Existing Regulations and Adopted Plans and Policies

Existing local, state and federal laws and regulations that would reduce or avoid impacts to sensitive natural communities and habitats such as aquatic habitats, riparian habitats and wetlands from

development allowed under the *Envision San José 2040 General Plan* and Greenhouse Gas Reduction Strategy include:

- Clean Water Act, including Sections 401, 404 (ACOE Permit program)
- Rivers and Harbors Act
- Porter-Cologne Water Quality Control Act
- California Fish and Game Code
- City of San José Riparian Corridor Policy
- City of San José City Council Policies
  - Post Construction Urban Runoff Management
  - Post Construction Hydromodification Management

Discussion of Direct Impacts to Natural Communities and Habitats

To be consistent with the proposed General Plan policies and existing regulations and adopted plans and policies noted above, any development that occurs outside the UGB, where sensitive riparian, oak woodland and serpentine habitats are found, will need to be carefully sited and designed. Allowed uses outside the UGB, such as retreat centers, golf courses, and cemeteries, are required to include measures that avoid direct and indirect impacts to the mosaic of habitats found in hillside areas. In particular, tree removal and the introduction of irrigation in or near oak woodlands has greater impacts on habitat than similar actions in urban parks or suburban areas. Changes in surface grades and increased runoff from impervious surfaces or irrigation can result in indirect adverse effects for oaks. Properties most suitable for larger scale uses outside the UGB are those located in or adjacent to previous disturbed or developed areas where riparian, oak woodland and serpentine grassland habitats are not present.

The analysis in this PEIR assumes that future projects in the City of San José, both within and outside of the UGB, will avoid or reduce impacts to biological resources to a less than significant level through measures included in project design or as conditions of approval, consistent with the policies for protecting environmental resources in the proposed General Plan. In the event a future project proposes features that would directly or indirectly affect sensitive biological resources, additional environmental review and detailed evaluation of resources will be required prior to approval or implementation and mitigation of impacts would be necessary in order for the project to have General Plan consistency.

Impact BIO -1: New development and redevelopment allowed under the proposed General Plan could affect natural communities and sensitive wildlife habitat, especially at the urban edge and adjacent to riparian corridors. Implementation of proposed policies and existing regulations and adherence to adopted plans and policies would limit or preclude impacts to sensitive habitats and natural communities in and adjacent to the City of San José. **(Less Than Significant Impact)**

3.5.3.3 *Indirect Impacts to Sensitive Serpentine Habitats*

Atmospheric nitrogen deposition is a complex process by which reactive chemical forms of nitrogen (N) – nitrogen oxides (NO_X), ammonia (NH_3), and other compounds – are deposited onto plant and soil surfaces. These forms of nitrogen can enter ecosystems and act as nitrogen fertilizer to plants.

Some nitrogen deposition is a normal part of the "nitrogen cycle" of nitrogen compounds between water, soil, and the atmosphere. Development allowed under the General Plan, as well as other urban and rural development in the County, are expected to increase air pollutant emissions due to an increase in passenger and commercial vehicle trips and other new industrial and nonindustrial sources, such as boilers and backup generators. Emissions from these sources are known to increase airborne reactive nitrogen compounds, of which a certain amount is converted into forms that can fall to the ground as depositional nitrogen.

Indirect impacts associated with development under the General Plan include the deposition of atmospheric nitrogen-containing compounds on serpentine grasslands within and outside of the City limits, mostly from air pollutant emissions associated with increased levels of traffic.

Indirect impacts from nitrogen deposition associated with human activities may include decreasing habitat suitability for native plants in serpentine grasslands. This would be due to an increase in non-native grass growth in these areas, which could lead to decreasing population size and density of such native forb species as dwarf plantain, dudleya, and lessingia, and subsequent decreases in population size and density of species that depend on these species, such as the Bay checkerspot butterfly. These impacts are less likely to occur under specific grazing regimes designed to remove additional non-native grass cover.

These indirect impacts could occur in any area containing serpentine grassland or serpentine outcrop habitats. Within the City limits, this includes planned growth areas within the UGB containing lands mapped as serpentine grasslands, which occur in the North Coyote Valley Employment Lands in the Coyote Planning Area, New Edenvale Employment Lands in the Edenvale Planning Area, and within the Communications Hill Specific Plan in the South Planning Area. Outside the UGB but within the City limits, Coyote Ridge, the Santa Teresa Hills, Tulare Hill, and the hills on the west side of Coyote Valley and in the Calero Reservoir area contain a significant amount of serpentine grassland habitats, all of which could be impacted indirectly. Nitrogen deposition effects are also not confined to habitats within these areas. Serpentine areas throughout the air basin, such as those along Coyote Ridge that are within the US 101 corridor, are likely to be subjected to substantial amounts of vehicular-based nitrogen deposition resulting from an increase in commuter traffic into the City due to job development.

The amount of nitrogen deposited due to emissions associated with "existing" development and future development in San José are difficult to accurately estimate because the atmospheric chemistry of nitrogen compounds is complex and dynamic. One analysis estimates that the total nitrogen deposited annually upon the serpentine grasslands located within Santa Clara County as six (6) kg-N/ha/year (kilograms of nitrogen per hectare per year). This value was reported in a recent study undertaken as part of the Santa Clara Valley HCP/NCCP planning process. This study also reports that total nitrogen deposition in the serpentine habitat areas could increase to 8 kg-N/ha/y in 2035 and almost 10 kg-N/ha/y in 2060. From these data it is anticipated that the total annual nitrogen deposition in 2040 will be approximately 8.25 kg-N/ha/y. Currently, 63 percent of the annual nitrogen deposited in Santa Clara County derives from mobile and stationary sources located within the County (of which the San José area is expected to contribute a significant amount), with the remaining deposited nitrogen derived from sources outside the County. This relative contribution, estimated from modeling based on assumed growth projections,[71] is expected to grow over the next

[71] The assumed growth projections in the Draft Santa Clara Valley HCP/NCCP are based on ABAG's *Projections 2005*. For the year 2035, population growth in San José, Santa Clara County and the Bay Area in *Projections 2005*

few decades as local populations increase. The San José contribution to nitrogen deposition in the habitat areas is estimated to be 38 percent in 2035.[72]

Indirect impacts to serpentine grasslands resulting from increased nitrogen deposition from development allowed by the proposed General Plan could be substantial because of the extreme rarity and sensitivity of serpentine grassland habitats, and the number of special-status species that depend on the integrity and quality of such habitats.

Proposed General Plan Policies and Actions
That Reduce or Avoid Possible Indirect Adverse Impacts to Serpentine Habitats

The proposed *Envision San José 2040 General Plan* includes a number of updated policies that address direct impacts from development in sensitive serpentine habitats. Two actions would provide for a program of setting up preserves managed to reduce the indirect effects of nitrogen deposition on serpentine grasslands, either through an HCP/NCCP process or by the City directly. Proposed General Plan Policies and Actions that could provide program-level mitigation for indirect impacts to serpentine grasslands are identified below.

Grassland, Oak Woodlands, Chaparral and Coastal Scrub	
Action ER-2.9	Continue to work with Local Partners (the County of Santa Clara, Santa Clara Valley Transportation Authority, Santa Clara Valley Water District, and the Cities of Gilroy and Morgan Hill) and three Wildlife Agencies (the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service (NMFS-NOAA Fisheries) on completion of the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) project. Once completed and adopted, implement an HCP/NCCP that both mitigates for land and stream development impacts and provides additional conservation, restoration, and enhancement efforts.
Action ER-2.10	In the event an HCP/NCCP which includes measures to offset indirect impacts to serpentine grassland habitats is not adopted, as City resources allow, develop and implement a comparable City of San José program for the preservation of serpentine grasslands based upon the strategies developed through the HCP/NCCP project.

In addition to the measures above, transportation control measures designed to increase the use of multi-modal transportation (e.g., transit, bicycling and walking) and decrease vehicle miles traveled could reduce nitrogen oxide emissions and indirect impacts to serpentine grasslands. These measures are identified in Table 3.4-9 in Section 3.4 Air Quality.

was referenced directly. The average rate of population change from 2010 to 2035 in *Projections 2005* was used for extrapolations out to the year 2060.

[72] Santa Clara Valley HCP/NCCP. December 2010. *Draft Santa Clara Valley Habitat Plan Appendix E (Nitrogen Deposition Analysis)*, available at <http://www.scv-habitatplan.org/>.

Existing Regulations and Adopted Plans and Policies

Existing federal, state, and local regulations that would reduce or avoid possible indirect impacts of nitrogen deposition include:

- National Low-Emission Vehicle and fuels regulations
- California Low-Emission Vehicle (LEV) regulations for new passenger vehicles and regulations for heavy-duty vehicles
- California Air Resources Board emission reduction programs for off-road sources, such as stationary diesel engines, locomotives, and ground support equipment at airports.

Discussion of Indirect Impacts to Sensitive Serpentine Habitats

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions would reduce nitrogen oxide emissions associated with vehicle trips through planned multi-modal improvements, trip reduction programs, and local land use strategies; however, with the projected increase in vehicle miles traveled, beyond or above the growth in population and employment, overall emissions are anticipated to increase.

The timeline for adoption of an HCP/NCCP that covers southern Santa Clara County, including portions of San José, has been delayed and the scope of the draft HCP/NCCP may be modified. While it is the City's intent to address nitrogen deposition impacts from development within the City (refer to Actions ER 2.9 and ER 2.10 above), given current resources, the City cannot commit to designing and implementing an independent system of serpentine grassland preserves. Therefore, this impact, and the City's contribution to it with build-out of the draft *Envision San José 2040 General Plan,* is significant because there is no assurance that a program of managed serpentine preserves will be established as a part of implementation of an adopted Santa Clara Valley HCP or an independent program designed and implemented by the City of San José.

Impact BIO-2: New development and redevelopment allowed under the proposed General Plan would result in emissions of nitrogen compounds that could affect the species composition and viability of sensitive serpentine grasslands. Implementation of the proposed policies and existing regulations would substantially reduce or offset indirect effects from nitrogen oxide deposition from vehicular trips within the region upon serpentine grassland communities; however, there currently is no assurance that the HCP/NCCP program or other system of managed preserves would be established to offset new nitrogen deposition impacts from vehicular emissions. **(Significant Impact)**

3.5.3.4 *Impacts to Natural Communities and Habitats in Combination with Climate Change and Sea Level Rise*

Various studies predict that sea level will rise by 12 to 18 inches by 2050, compared to 2000 levels, as a result of global climate change (refer to Section 3.7.1.7 Hydrology and Water Quality). As sea level rises, there is some potential for habitats subject to tidal fluctuations (such as tidal marshes) to change as a result of increased tidal flooding, and for habitats that are currently not subject to tidal flooding but located at elevations within 12 to 18 inches of tidal areas to come under tidal influence.

As sea levels rise, lower-elevation areas may become inundated more frequently and/or a longer duration to support existing vegetation, and new areas at the upper edge of the marsh become subjected to tidal action (typically being converted from upland vegetation dominated by peripheral halophytes, upland grasses, or ruderal vegetation to tidal marsh vegetation such as pickleweed). Thus, the vegetation profile moves vertically upward, and laterally inward (farther inland), as sea levels rise. However, because most of the marshes within the City limits are backed by steep levees separating tidal and non-tidal areas, most marsh "migration" as a result of sea level rise is expected to occur vertically, with relatively little opportunity for inland migration of salt marshes as long as levees are maintained and remain intact.

If sediment accumulation within the marshes did not occur, sea level rise in levee-backed marshes could result in the loss of tidal marsh due to the "drowning" of lower-elevation areas without an associated increase in marsh at the upland edge. However, a geomorphic assessment performed for the South Bay Salt Pond Restoration Project predicted that sedimentation is expected to keep pace with sea level rise even as many of the saline managed ponds in the South Bay are restored to tidal action.[73] As a result, the relative elevation of the marsh plain (compared to mean sea level) is likely to be able to remain relatively unchanged as sea levels rise, minimizing the loss of tidal marsh.

The greatest potential impact to tidal marshes from sea level rise may be the loss of upland transitional habitat. This habitat, which consists of the interface between tidally influenced marshes and upland habitat, may be very broad where tidal marsh borders on natural grassland or other habitats, but typically consists of a narrow band of habitat on the outboard side of levees surrounding virtually all of the tidal habitats. In some existing marshes, even where backed by levees, upland transitional habitat consists of well vegetated, gently sloping areas. As sea level rises, such areas may be converted to narrower, steeper bands of habitat at the toe of the levee. Upland transitional habitat is important to marsh species such as salt marsh harvest mice, salt marsh wandering shrews, California clapper rails, and California black rails during extremely high tides. During such tides, vegetation within upland transitional zones provides cover for these animals, which otherwise would suffer high rates of predation from raptors, gulls, corvids, egrets, and herons. Loss of upland transitional habitat will result in increased predation due to lack of cover, and could potentially lead to fragmentation of populations of the harvest mouse and wandering shrew due to extirpation of these species from marshes lacking adequate upland transitional habitat.

The South Bay Salt Pond (SBSP) Restoration Project is planning the phased restoration of tidal marsh within several existing managed ponds. This project would restore thousands of acres of vegetated tidal marsh, channels, and mudflats (in addition to upland transitional habitat) to the South Bay, including many of the managed ponds within the Alviso Planning Area. The SBSP Restoration Project incorporates a monitoring and adaptive management program to monitor sediment accumulation and marsh development, thereby ensuring that the restored marshes do not become such large sediment "sinks" that they prevent sediment accumulation in South Bay marshes from keeping pace with sea level rise. The SBSP Restoration Project will also enhance and manage some ponds specifically for pond-associated birds, including shorebirds that forage extensively on mudflats. In this way, the SBSP Restoration Project will ensure that suitable habitat is managed for these birds in the event that sea level rise reduces the extent of valuable intertidal mudflat habitats. The related U.S. Army Corps of Engineers Shoreline Study will assist with tidal marsh restoration while ensuring appropriate flood control; the two issues are strongly interrelated because restoration

[73] Philip Williams & Associates, Ltd. 2006. *South Bay Salt Ponds Restoration Project South Bay Geomorphic Assessment.*

of tidal marsh in a number of areas, including Alviso managed ponds, requires the construction or augmentation of flood control levees on the upland edge of the restored areas.

The City of San José's General Plan will not be responsible for sea level rise, and sea level rise will not be within the City's control. In the event that sea level rise impacts the distribution of marshes or upland transitional habitats within the City limits, there are few feasible options for actions that the City might take to maintain such habitat at its current location.

A question arises whether future development of land within the Alviso Planning Area under the General Plan could exacerbate the effects of sea level rise by precluding the movement of tidal marsh inland as sea level rises. A key consideration is the identification of areas that are potentially suitable sites for marsh habitat in the light of predicted sea level rise. It is assumed that areas that are currently developed within the UGB generallywould not be suitable for conversion to new marsh habitat because of existing ground surface elevations and existing structures or materials beneath the ground surface. The built environment includes existing residential, commercial and light industrial development and infrastructure in the Alviso Village area and two landfills and the WPCP on Los Esteros Road and a tall, former landfill area west of Gold Street that are at higher elevations than surrounding lands. Some areas within the UGB in Alviso that are currently undeveloped, such as portions of the WPCP bufferlands and the area around the Coyote Creek Reach 1A waterbird pond, are within the appropriate elevation range for future marsh development assuming sea level rise of 12 to 18 inches by 2050. In these areas, the City could choose to avoid development and restore or facilitate tidal action to allow for tidal marshes to "migrate" inland as sea level rises (though some road realignment would be required, and additional flood control levees would likely be required to protect developed areas from tidal flooding).

As recognized in General Plan Policy ER-4.3, the opportunities for the creation of new marsh and upland transitional area are greatest in the Alviso Planning Area outside the UGB within existing saline managed ponds and levee areas. Because there are long-term opportunities for marsh restoration outside the UGB within existing levees and the restoration and maintenance of tidal marsh in the South Bay by the SBSP Restoration Project have already begun, retaining the existing WPCP buffer lands south of Los Esteros Road and west of Zanker Road for future marsh or upland habitat is not required and, development in areas within the UGB would not result in a substantial loss of potential marsh habitat sites.

Impact BIO-3: Future development planned within the UGB in the Alviso Planning Area would not preclude the formation of new marsh habitat in the South Bay or substantially worsen impacts to marsh habitat associated with predicted sea level rise. **(Less Than Significant Impact)**

3.5.3.5 *Impacts to Native Fish and Wildlife Movement*

Native Fish Passage

Aquatic habitats within San José provide habitat used by native fish during various life phases, such as breeding, rearing, foraging and migrating. In particular, there are several native Special-status fish species that occur within the City. The green sturgeon and longfin smelt may occur in tidal reaches of sloughs in the Alviso area. The Pacific lamprey, Central California Coast steelhead, and Chinook salmon occur in the larger streams flowing into South San Francisco Bay and their tributaries.

Downstream and tidal reaches are used for migration between the ocean and spawning areas. Other native species found in local waterways include California roach, Sacramento sucker, and sculpins.

Migration and movement of these species could be affected directly by temporary or permanent barriers placed in streams and indirectly by impacts to water quality, including sedimentation. Development of new bridges or in-stream structures (e.g., culverts, check dams) associated with roadway improvements have the greatest potential to directly impact fish passage by blocking or affecting movement and stream flows during migration.

Wildlife Movement

New development in existing natural or agricultural areas can inhibit wildlife movement both by providing physical impediments to movement and by requiring animals to move longer distances around such development. Construction of new roads and increases in traffic on existing roads may reduce wildlife movement by deterring more sensitive animals from crossing roads, fragmenting habitat, and reducing successful dispersal attempts as a result of increased traffic noise and vehicular strikes and mortality. Increased recreational activities in natural areas may reduce movement by deterring more sensitive animals from moving through areas of increased human use.

Although the effects of new development and increases in traffic and recreational activities may adversely affect wildlife movement throughout much of the City, these effects are expected to be relatively minor, in terms of effects on regional populations and movements. Within the UGB, most development will consist of infill development that occurs in areas that are not important for regional movement of reptiles, amphibians, mammals, or other wildlife species. Although some new development will occur at the edges of the UGB, such as in the Evergreen area, most development will be within the existing urban areas; wildlife will still be able to move freely within natural areas immediately outside the limits of new and existing development. Even with increased traffic and recreational activities, only low density development will be allowed in those portions of the City outside the UGB (see Figures 2.2-19 to 2.2-26). Land use designations outside the UGB include *Open Space, Park and Habitat (the Baylands located within Alviso)*, *Open Hillside,* and *Agriculture.* As a result, ample opportunities for wildlife movement within and along Coyote Ridge, the Diablo Range, and the Santa Cruz Mountains will still be able to occur. Development of the two Urban Reserves in Coyote and Almaden is not proposed within this General Plan horizon and so substantial impacts on wildlife movement in these areas under the proposed General Plan are unlikely.

The one location with the greatest potential for substantial impacts to wildlife movement is Coyote Valley. As described previously in Native Fish and Wildlife Movement, US 101 and Monterey Highway represent considerable impediments to wildlife movement across the valley. However, multiple crossings (particularly culverts) of US 101, and a few locations where breaches in the median barrier within Monterey Highway occur, do allow mammals to cross Coyote Valley, thereby allowing for dispersal between the Santa Cruz and Diablo ranges.

Future development and infrastructure improvements allowed under the General Plan would make it more difficult for mammals to move across Coyote Valley in a west-east or east-west direction. This would be a result of new development on both sides of Bailey Avenue from the west side of Coyote Valley east to Monterey Road, increased traffic from new development in North Coyote Valley, and widening of Santa Teresa Boulevard on either side of the Fisher Creek crossing. Road widening will allow for both more traffic and a broader swath of developed area that must be crossed by animals attempting movements across Coyote Valley.

In addition, increases in human population within the City and in the number of people working in North Coyote Valley will result in increased recreational use of the Coyote Creek Trail, potentially inhibiting wildlife movements along this trail during the daytime due to increased human activity.

Future development activities in Coyote Valley will not completely preclude the ability of wildlife to move across the valley. Many animals are most active at night, when traffic, recreational activities, and human presence within commercial/office development are at their lowest. As a result, some animals are expected to continue to move through Coyote Valley, find means of crossing impediments such as Monterey Highway, and eventually make a successful crossing of the valley.

The importance of the landscape linkage across northern Coyote Valley in supporting regional populations of animals has been recognized within the last 10 years, as documented in the draft HCP/NCCP. Even though development allowed under the General Plan will not completely eliminate wildlife movement across Coyote Valley, new impediments to successful dispersal across the valley, including development allowed by this General Plan, could result in a substantial impact to regional wildlife movements in the vicinity of Bailey Road.

Collision Impacts to Birds

The City is located along the Pacific Flyway for migratory birds and the mosaic of habitats at the edge of the Bay and surrounding the City results in large-scale movements of birds during both migration and as a part of daily movements between roosting and foraging areas.

Many birds migrate at night when it is difficult for them to see structures such as buildings and power lines in their path. In addition, birds migrating at night are often attracted to sources of artificial light, particularly during inclement weather. As a result, bright lights on buildings can result in bird collisions with the buildings. Even during the day, birds may collide with windows or with tall, glass-covered buildings.

Intensification of development within established urban areas, may result in additional bird collisions with new structures by urban-adapted bird species that are currently using habitats within these urban areas. These species are regionally abundant and adapted to urban development and their possible collisions with new buildings in central areas of the city would not result in substantial impacts on regional bird populations.

In Alviso near the San Francisco Bay, there is a potential for collisions by large numbers of birds with new structures. The presence of saline managed ponds, tidal marsh, grassland, WPCP settling ponds, and riparian habitat along lower Coyote Creek provide attractive conditions for breeding, wintering and migrating birds. In addition, migrating waterfowl and shorebirds may either leave San Francisco Bay heading southward or arrive at the Bay during their northbound migrations through the Alviso area. Songbirds also travel in and out of the Alviso area during migration, using the riparian habitat along lower Coyote Creek. In most cases birds will fly higher than new buildings or powerlines that would be constructed in the Alviso area; however structures may become obstacles as birds are ascending from or descending to habitats in the Alviso area. Tall and/or well-lit buildings or high powerlines could pose substantial collision hazards to birds in the area north of State Route 237.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Wildlife Movement

The proposed *Envision San José 2040 General Plan* includes updated policies that address wildlife movement. Revisions to existing policies clarify that consideration of wildlife movement is required as a part of the City's development review process, particularly near riparian corridors, at the urban interface with natural communities, and in the North Coyote Valley and Alviso areas. Proposed General Plan Policies and Actions that provide program-level mitigation for impacts to fish and wildlife movement within the City are identified below.

Fish and Wildlife Movement Along Riparian Corridors

Balanced Resource Conservation	
Policy ER-1.1	Continue to maintain the Greenline/Urban Growth Boundary and focus development and redevelopment within the existing urban envelope of the City.
Riparian Corridors	
Policy ER-3.1	Ensure that new public and private development adjacent to riparian corridors in San José are consistent with the provisions of the City's Riparian Corridor Policy Study and any adopted Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP).
Policy ER-3.2	Ensure that the 100-foot setback from riparian habitat is the standard to be achieved in all but a limited number of instances, only where no significant environmental impacts would occur.
Policy ER-3.3	Design new development to protect adjacent riparian corridors from encroachment of lighting, exotic landscaping, noise and toxic substances into the riparian zone.
Policy ER-3.4	When disturbances to riparian corridors cannot be avoided, implement appropriate measures to restore, and/or mitigate damage and allow for fish passage during construction.
Urban Natural Interface	
Policy ER-7.7	Include barriers to animal movement within new development and, when possible, within existing development, to prevent movement of animals (e.g., pets and wildlife) between developed areas and natural habitat areas where such barriers will help to protect sensitive species.
Wildlife Movement	
Policy ER-8.2	In areas important to terrestrial wildlife movement, design new or improved existing roads so that they allow wildlife to continue to move across the roads (e.g., either over the road surface or through undercrossings or overcrossings designed for the animals moving through the areas). Enhance undercrossings used for wildlife movement (e.g., by enlargement) when roads are improved.
Policy ER-8.3	Where new road crossings of streams are constructed, or existing culverts are replaced or improved, design all culverts to allow movement of aquatic species present in any watercourse crossed by the road. Use clear-span bridges in place of culverts where feasible.

Action ER-8.4	To facilitate the movement of wildlife across Coyote Valley, work with the appropriate transportation agencies to replace portions of the median barrier on Monterey Road with a barrier that maintains human safety while being more permeable to wildlife movement and implement other improvements, to benefit wildlife movement.

Wildlife Movement in Coyote Valley

Balanced Resource Conservation	
Policy ER-1.1	Continue to maintain the Greenline/Urban Growth Boundary and focus development and redevelopment within the existing urban envelope of the City.
Urban Natural Interface	
Policy ER-7.7	Include barriers to animal movement within new development and, when possible, within existing development, to prevent movement of animals (e.g., pets and wildlife) between developed areas and natural habitat areas where such barriers will help to protect sensitive species.
Wildlife Movement	
Policy ER-8.2	In areas important to terrestrial wildlife movement, design new or improved existing roads so that they allow wildlife to continue to move across them (e.g., either over the road surface or through undercrossings or overcrossings designed for the animals moving through the areas). Enhance undercrossings used for wildlife movement (e.g., by enlargement) when roads are improved.
Action ER-8.4	To facilitate the movement of wildlife across Coyote Valley, work with the appropriate transportation agencies to replace portions of the median barrier on Monterey Road with a barrier that maintains human safety while being more permeable to wildlife movement and implement other improvements, to benefit wildlife movement.

Discussion of Impacts to Wildlife Movement

Providing for wildlife roadway crossings in addition to the median break at the existing Monterey Road and Bailey Avenue intersection would facilitate movement around future development allowed in the North Coyote area.

Bird Movement Through the Alviso Area

Wildlife Movement	
Policy ER-8.1	In the area north of Highway 237 design and construct buildings and structures to reduce the potential for bird strikes for species associated with the baylands or the riparian habitats of lower Coyote Creek.

Discussion of Impacts to Bird Movement Through the Alviso Area

Design review that provides for avoiding construction of tall, glass-covered buildings, towers or wind turbines with guy-wires or other hazards, and using reduced night lighting (to avoid alteration of flight paths and/or attract birds to the light source) would reduce substantial impacts to birds that move through the Alviso area.

Existing Regulations and Adopted Plans and Policies

Existing local, state and federal regulations that would reduce or avoid possible impacts to fish and wildlife movement include:

- Federal Clean Water Act
- Porter-Cologne Act, California Water Code

Impact BIO-4: New development and redevelopment allowed under the proposed General Plan could affect the movement of native fish and wildlife, particularly in the Alviso and Coyote Planning Areas. Implementation of proposed policies and existing regulations and adopted plans and policies would substantially reduce impacts to existing fish and wildlife movement corridors. **(Less Than Significant Impact)**

3.5.3.6 *Impacts to Special-Status Plants*

Overview

Federally and state-listed plant species that occur or may occur within the City limits are primarily serpentine endemics found in serpentine bunchgrass grasslands, serpentine rock outcrops, and mixed serpentine chaparral plant communities. Planned growth areas where these habitats may occur include the New Edenvale and North Coyote Valley Employment Lands and the Communications Hill Specific Plan in the South San José Planning Area. Several special-status plant species also may occur in vernal pools or alkaline seasonal wetlands near San Francisco Bay and in scrub, oak woodland and grassland habitats in the southern and eastern foothills. Special-status plants are not expected to occur in areas of the City that are already urbanized due to previous land modifications and removal of native plants, and because they do not support natural plant communities. Growth areas in the following Planning Areas that do not provide suitable habitat for special status plants include: Alum Rock, Berryessa, Cambrian/Pioneer, Central/Downtown, Evergreen, North San José, West Valley, and Willow Glen.

Special-Status Plants Found in Scrub, Oak Woodland and Grassland Habitats

No federally or state-listed species are expected to occur in the non-serpentine scrub, oak woodland and grassland habitats within the City limits of San José (refer to Serpentine and Wet Alkaline discussions, below and Table 3.5-2).

Special-status plants that are not federally or state-listed (e.g., CNPS-listed plant species) that could occur in non-serpentine scrub, chaparral, oak woodland and grassland habitats within the City limits include bent-flowered fiddleneck, round-leaved filaree, Santa Clara red ribbons, Satan's goldenbush, arcuate bush-mallow, Davidson's bush-mallow, Hall's bush-mallow, Mount Diablo cottonweed, and

robust monardella (refer to Table 3.5-2). Direct impacts to these species could occur from the loss of habitat or individual plant populations through allowed development or human activities on vacant land that supports natural habitat both within and outside the UGB.

Within planned growth areas, these habitats are present in portions of the Coyote, Edenvale, Evergreen, North San José, and South Planning Areas. Impacts to populations of CNPS-listed special-status plants in these areas could be significant due to the rarity of these species.

Special-Status Plants Found in Serpentine Habitats

Federally and state-listed plant species that could occur within serpentine habitats in the City include Tiburon Indian paintbrush, Coyote ceanothus, Santa Clara dudleya, Metcalf Canyon jewel-flower, and showy Indian clover. These species are most likely to be located in areas outside the UGB where serpentine habitats are still intact. Planned growth areas that may provide suitable habitat for these species include the New Edenvale and North Coyote Employment Lands and the Communications Hill Specific Plan Area due to the presence of remnant areas of grassland on serpentine soils.

Special-status plants that are not federally or state-listed that could occur within serpentine habitats in the City include Franciscan onion, big-scale balsamroot, pink creamsacs, Mt. Hamilton fountain thistle, fragrant fritillary, Loma Prieta hoita, smooth lessingia, and most beautiful jewelflower. Planned growth areas that may provide suitable habitat for these species include New Edenvale and North Coyote Employment Lands, and the Communications Hill Specific Plan due to the presence of remnant areas of grassland on serpentine soils. Other locations within the City limits but outside the UGB that contain substantial amounts of serpentine habitat include portions of Coyote Ridge, Tulare Hill, the Santa Teresa Hills, Alum Rock Park and serpentine habitats on the west side of Coyote Valley in the Edenvale and Coyote Planning Areas. Serpentine adapted special-status plants are not expected to be found within the UGB in other planned growth areas of the City, since soils derived from serpentine bedrock are generally not present on the alluvial soils of the valley floor.

Direct impacts could occur to these species from development of residential or industrial development or infrastructure. Indirect impacts to serpentine adapted species are discussed in Section 3.5.3.3.

Special-Status Plants Found in Wetland and Wet Alkaline Habitats

Contra Costa goldfields is a federally-listed plant species. Although it has not previously been reported in San José, it could potentially be found in seasonal wetlands, including vernal pool-like habitat and alkaline seasonal wetlands near the Bay in the Alviso Planning Area.

Special-status plants that are not federally or state-listed that could occur within wetland habitats include alkali milk vetch, brittlescale, San Joaquin spearscale, Congdon's tarplant and Hoover's button celery. Of these species, only Congdon's tarplant could occur in season wetlands not affected by salinity due to habitat and soil substrate requirements. These species are only expected to be found in open areas within the Alviso Planning Area, both within and beyond the UGB, since suitable habitats are only present in this area.

Development of vacant parcels within the Alviso area could result in direct impacts to these species because that have been reported or have a potential to occur at these locations. Intensification of development outside the UGB near the Bay is not proposed under the General Plan, although

infrastructure modifications or salt pond restoration activities could occur in this area and affect one or more of these special status plants.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Special-Status Plants

The proposed *Envision San José 2040 General Plan* includes policies that address avoiding, minimizing or reducing impacts to special-status plants found within the City limits of San José. Proposed General Plan Policies and Actions that provide program-level mitigation for impacts to special-status plants within the City are identified below.

Grassland, Oak Woodlands, Chaparral, and Coastal Scrub	
Policy ER-2.2	Prohibit the use of motorized off-road vehicles for recreation purposes in oak woodland, grassland, and hillside areas within the City to protect these limited resources.
Policy ER-2.4	Minimize the removal of ecologically valuable vegetation, such as serpentine and non-serpentine grassland, oak woodland, chaparral, and coastal scrub during development and grading for projects within the City.
Policy ER-2.7	Preserve, protect, and manage serpentine grasslands and serpentine chaparral, particularly those supporting sensitive serpentine bunchgrass communities providing habitat for sensitive plant and animal species. Development will not be permitted on serpentine grasslands or chaparral supporting state or federal candidate or listed threatened or endangered plant or animal species. Appropriately managed grazing is encouraged on serpentine grasslands.
Policy ER-2.8	Prohibit planting of invasive non-native plant species in oak woodlands, grasslands, chaparral and coastal scrub habitats, and in hillside areas.
Bay and Baylands	
Policy ER-4.5	Prohibit planting of invasive non-native plant species in or near baylands habitats.
Special Status Plants and Animals	
Policy ER-5.1	Preserve and restore habitat areas that support special-status species. Avoid development in such habitats unless no feasible alternatives exist and mitigation is provided of equivalent value.
Policy ER-5.2	Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.
Policy ER-5.3	Prohibit planting of invasive non-native plant species in natural habitats that support special-status species.
Policy ER-5.4	Require that development projects incorporate mitigation measures to avoid and minimize impacts to individuals of special-status species.

Existing Regulations and Adopted Plans and Policies

Existing federal and state laws that would reduce or avoid possible impacts to special-status plants include:

- Federal Endangered Species Act
- California Endangered Species Act
- Public Resources Code Section 15380 (CEQA Guidelines)

Discussion of Impacts to Special Status Plant Species

To be consistent with the proposed General Plan policies and existing regulations and adopted plans and policies noted above, development outside the UGB, where special status plants are found, will need to be carefully sited and designed. Allowed uses outside the UGB, such as retreat centers, golf courses, and cemeteries, will need to include measures that avoid direct and indirect impacts, especially to serpentine habitats found in seeps and hillside areas. Properties most suitable for these uses may be located in previously disturbed or developed areas where special status plants are not present.

Proposed HCP/NCCP

One of the proposed Actions under the General Plan (Action ER-2.9) is for the City to continue to work with local partners on completion of a Santa Clara Valley HCP/NCCP. An HCP/NCCP, if adopted, will provide mechanisms for mitigating direct and indirect impacts to special status plants from development within the City. In the event the HCP/NCCP is not adopted prior to new development proceeding under the proposed General Plan, then avoidance, minimization and mitigation measures will be required for individual projects that have the potential to substantially impact populations of special status plants.

Impact BIO-5: New development and redevelopment allowed under the proposed General Plan would be concentrated in existing developed areas that do not support habitats for special-status plants; however, some infill development at the urban edge, in parklands, and elsewhere within the City limits could occur in localized areas, such as serpentine or oak woodland habitats, where special-status plants may occur. Implementation of proposed policies and existing regulations and adopted plans and policies would substantially reduce direct impacts to special-status plants. **(Less Than Significant Impact)**

3.5.3.7 *Impacts to Special Status Animals*

Federally and state-listed animal species that occur or may occur within the City limits are primarily found in aquatic, salt marsh, tidal marsh, riparian, serpentine grasslands, open grasslands, oak woodland, and scrub habitats (See Table 3.5-4). Some are also found in agricultural habitats. Special-status animals are generally not expected to occur in areas of the City that are developed with structures and paving and that do not support natural plant communities since these areas do not meet their habitat requirements for nesting, foraging, or cover. Other than in riparian areas, vacant areas that support grassland and serpentine grassland vegetation, and agricultural habitats, special-status animal species are not expected to occur within most developed areas within the City's UGB.

In areas within the City limits where suitable habitat is present, impacts from future development allowed under the General Plan could affect a range of special status invertebrates, fish, amphibians, birds, and mammals. Direct impacts could occur during construction and through the loss of habitat, including breeding, nesting or roosting sites. Increases in human activity associated with development or recreational uses in the vicinity of suitable habitat may also result in an increase in native and non-native predators and increased predation of wildlife by pets or feral animals. Sedimentation, hazardous materials spills, and other human sources of pollutants also could adversely affect water quality in aquatic, wetland and riparian habitats, which could impact special status animals that rely on these habitats.

Special status animal species, including federal and state-listed Threatened and Endangered Species, that may be affected by future development are listed for each Planning Area in Table 3.5-4 (refer to Appendix E for listings for each Village and Employment Lands location). Several additional special-status animals could occur within the City limits; however, based upon a review of biological conditions and possible impacts by H.T. Harvey & Associates, substantial impacts to populations of Vaux's swift, olive-sided flycatcher, grasshopper sparrow, and ringtail from development allowed under the General Plan are unlikely (Appendix E).

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Special-Status Animals

The proposed *Envision San José 2040 General Plan* includes policies that address avoiding, minimizing or reducing impacts to special-status animals found within the City limits of San José. Proposed General Plan Policies and Actions that provide program-level mitigation for impacts to special-status plants within the City are identified below.

Grassland, Oak Woodlands, Chaparral, and Coast Scrub	
Policy ER-2.2	Prohibit the use of motorized off-road vehicles for recreation purposes in oak woodland, grassland, and hillside areas within the City to protect these limited resources.
Policy ER-2.4	Minimize the removal of ecologically valuable vegetation, such as serpentine and non-serpentine grassland, oak woodland, chaparral, and coastal scrub during development and grading for projects within the City.
Policy ER-2.7	Preserve, protect, and manage serpentine grasslands and serpentine chaparral, particularly those supporting sensitive serpentine bunchgrass communities providing habitat for sensitive plant and animal species. Development will not be permitted on serpentine grasslands supporting state or federal candidate or listed threatened or endangered plant or animal species. Appropriately managed grazing is encouraged on serpentine grasslands.
Policy ER-2.8	Prohibit planting of invasive non-native plant species in oak woodlands, grasslands, chaparral and coastal scrub habitats, and in hillside areas.
Bay and Baylands	
Policy ER-4.5	Prohibit planting of invasive non-native plant species in or near baylands habitats.

Special Status Plants and Animals	
Policy ER-5.1	Preserve and restore habitat areas that support special-status species. Avoid development in such habitats unless no feasible alternatives exist and mitigation is provided of equivalent value.
Policy ER-5.2	Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.
Policy ER-5.3	Prohibit planting of invasive non-native plant species in natural habitats that support special-status species.
Policy ER-5.4	Require that development projects incorporate mitigation measures to avoid impacts to individuals of special-status species.

Existing Regulations and Adopted Plans and Policies

Existing local, state and federal regulations and adopted plans and policies that would reduce or avoid possible impacts to special-status animals or their habitats include:

- Federal Endangered Species Act
- Federal Migratory Bird Treaty Act
- Clean Water Act Sections 404 and 401
- Bald and Golden Eagle Act
- California Endangered Species Act
- California Fish and Game Code (Sections 2513, 2802, 3503, 3503.5, 3800)
- Porter-Cologne Water Quality Control Act
- Public Resources Code Section 15380 (CEQA Guidelines)
- City of San José Riparian Corridor Policy
- City of San José Tree Removal Controls

Discussion of Impacts to Special Status Animals

To be consistent with the proposed General Plan policies and existing regulations and adopted plans and policies noted above, development outside the UGB, where special status animals are found, will need to be carefully sited and designed. Allowed uses outside the UGB, such as retreat centers, golf courses, and cemeteries, will need to include measures that avoid direct and indirect impacts to individual animals, such as an aestivating California tiger salamander, and their habitats. Properties most suitable for these uses may be located in previous disturbed or developed areas where riparian, wetland, pond, oak woodland, and serpentine grassland habitats are not present or nearby.

Table 3.5-4
Potential Impacts to Special Status Animals Within the City of San José

Species	Habitat(s)	Outside UGB	Planning Area												
			Almaden	Alum Rock	Alviso	Berryessa	Cambrian	Central	Coyote	Edenvale	Evergreen	North	South	West Valley	Willow Glen
Bay Checkerspot Butterfly	Serpentine grassland	X								X					
Pacific Lamprey, Green Sturgeon, Chinook Salmon, Steelhead and Longfin Smelt	Aquatic	X	X	X	X	X	X	X		X	X	X	X		X
California Tiger Salamander, California Red-Legged Frog, Foothill Yellow-Legged Frog	Aquatic, riparian, and surrounding grasslands.	X	X						X		X		X		
Western Pond Turtle	Aquatic and adjacent uplands (Guadalupe River and tributaries)	X	X	X		X	X	X	X	X		X	X		X
California Horned Lizard	Open habitats in chaparral, scrub and woodlands with sandy, loose textured soils	X													
Northern Harriers, White-Tailed Kite, Loggerhead Shrike1	Open grassland, ruderal, or agricultural habitats with brush or trees for nesting	X	X		X				X		X		X		
Golden and Bald Eagles[1]	Open habitats	X			Adjacent				Adjacent		Adjacent				
American Peregrine Falcon[1]	Nests on steep cliffs, tall buildings and electrical transmission towers	X						X							
California Clapper Rail, Alameda Song Sparrow and Bryant's Savannah Sparrow[1]	Salt marsh	X			X (direct and indirect)										
Western Snowy Plover and Black Skimmer[1]	Saline managed ponds	X			X (indirect; loss of buffering habitat)										
Burrowing Owl[1]	Open grassland and agricultural areas	X (primarily non-breeding)		X	X				X			X			

Table 3.5-4
Potential Impacts to Special Status Animals Within the City of San José

Species	Habitat(s)	Outside UGB	Planning Area												
			Almaden	Alum Rock	Alviso	Berryessa	Cambrian	Central	Coyote	Edenvale	Evergreen	North	South	West Valley	Willow Glen
Yellow Warbler and Yellow-breasted Chat[1]	Riparian (dense understory with open canopy)	X	X (warbler)						X	X	X				
San Francisco Yellowthroat[1]	Emergent vegetation in fresh and brackish marshes and moist floodplains near edge of SF Bay	X (Alviso)			X										
Tricolored Blackbird[1]	Tall, dense vegetation such as cattails and tules	X	X		X				X						
Salt Marsh Wandering Shrew and Salt Marsh Harvest Mouse	Tidal salt marsh	X (Alviso)			X										
San Francisco Dusky-footed Woodrat	Woodland, scrub, and riparian habitats with dense understory	X (Fisher, Thompson, Coyote, Calero, Guadalupe, Berryessa, and other creeks)			X		X (V17)		X	X	X, (V54 and V55)				
Pallid Bat, Townsend's Big-eared Bat and Western Red Bat1[2]	Various, including oak savannah, open habitats, buildings and bridges	X	X						X		X				
American Badger	Grasslands, oak woodland savannas, scrublands and agricultural habitats	X							X		X (Coyote Ridge, campus industrial)				
Harbor Seal	Tidal waters of SF Bay	X			X										

Notes: [1] = critical period is nesting and/or breeding
[2] = roosting and maternal colonies
Bold indicates federal or state listed Threatened or Endangered species.
Source: H.T. Harvey & Associates. *Envision San José 2040 General Plan Update Biological Resources Report.* 18 August 2010. (refer to Appendix E)

Proposed HCP/NCCP

One of the proposed Actions under the General Plan (Action ER-2.9) is for the City to continue to work with local partners on completion of a Santa Clara Valley HCP/NCCP. An HCP/NCCP, if adopted, will provide mechanisms for mitigating direct and indirect impacts to special status animals from development within the City. In the event the HCP/NCCP is not adopted prior to new development proceeding under the proposed General Plan, avoidance, minimization and mitigation measures will be required for individual projects that would impact special status animals.

Impact BIO-6: New development and redevelopment allowed under the proposed General Plan would be concentrated in existing developed areas; however, some infill development at the urban edge, on vacant or agricultural parcels or parklands could occur in localized areas, such as serpentine grasslands, grasslands, oak woodland, riparian or salt marsh habitats, where special-status animals may occur. Implementation of proposed policies and existing regulations and adopted plans and policies would substantially reduce impacts to species expected to occur within the City limits. **(Less Than Significant Impact)**

3.5.3.8 *Indirect Impacts from Procurement of Energy and Water Sources*

Indirect Impacts to the Bay and Delta Due to Procuring Water Supply

The demand for potable water will increase considerably as a result of the increase in jobs, residences, and residents of the City allowed by the General Plan. More than half of the water currently supplied by the SCVWD is imported from the Sacramento-San Joaquin River Delta. Much of the water flowing down the Sacramento and San Joaquin Rivers is diverted in the Delta into canals that carry the water southward to the San Joaquin Valley, southern California, and users such as the SCVWD in the South Bay.

The existing rates of water diversion from the Delta are having adverse effects on aquatic ecosystems in the Delta, San Francisco Bay, and even in the Pacific Ocean. Pumping of water as a result of the State Water Project (SWP) and Central Valley Project (CVP) has resulted in adverse effects on a number of listed fish, such as the Delta smelt (*Hypomesus transpacificus*). The effects of these pumping projects on the Delta smelt were the subject of a Biological Opinion issued by the USFWS in December 2008.[74] Similarly in June 2009, the NMFS issued a Biological Opinion regarding the effects of these pumping projects on three federally listed salmonid runs, the green sturgeon, and Southern Resident killer whales (*Orcinus orca*).[75] These Biological Opinions include strict monitoring requirements and conditions on pumping of water to minimize adverse effects of water diversions on these species. Restrictions imposed by the biological opinions affect the ability of the SWP and CVP to deliver imported water to multiple parts of the state, including Santa Clara Valley.[76]

[74] *Formal Endangered Species Act Consultation on the Proposed Coordinated Operations of the Central Valley Project (CVP) and State Water Project (SWP)*. 2008. <http://www.fws.gov/sacramento/es/documents/SWP-CVP_OPs_BO_12-15_final_OCR.pdf>, accessed July 14, 2010.

[75] U.S. Department of Commerce, National Oceanic and Atmospheric Administration. "Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project and State Water Project". 2009. Available at: <http://swr.nmfs.noaa.gov/ocap/NMFS_Biological_and_Conference_Opinion_on_the_Long-Term_Operations_of_the_CVP_and_SWP.pdf>

[76] CA Dept. of Water Resources, Bay-Delta Office *Draft State Water Project Delivery Reliability Report, 2009*. Available at http://baydeltaoffice.water.ca.gov/swpreliability/.

To address the biological impacts of continued Delta pumping by the SWP and CVP, the Bay Delta Conservation Plan (BDCP) is being prepared by State, federal and local agencies.[77] A final Plan is not currently available for public review. The BDCP's purpose is to provide for the conservation of at-risk species in the Delta and improve the reliability of the State's water supply system. The BDCP is being developed under the federal Endangered Species Act (ESA) and the California Natural Community Conservation Planning Act (NCCPA) and will:

- Identify conservation strategies to improve the overall ecological health of the Delta;
- Identify ecologically friendly ways to move fresh water through and/or around the Delta;
- Address toxic pollutants, invasive species, and impairments to water quality; and
- Provide a framework and funding to implement the plan over time.

The California Department of Water Resources is the lead agency for an EIR/EIS that is being prepared to evaluate the potential effects of the BDCP. The BDCP is scheduled to be delivered early in summer 2011and a draft EIR/EIS is expected to be ready for public review and comment by mid-2012.[78]

The SCVWD is currently updating its 2005 Urban Water Management Plan. The updated Plan will address sources of water and water conservation measures required to meet projected water demand in Santa Clara County, including the City of San José, through 2035. With the uncertainties inherent in future imported water supplies, the City currently plans to meet future growth demand by pumping additional groundwater, relying on more recycled water, and increased conservation. Water conservation is anticipated to occur through replacement of more water-efficient appliances (i.e. clothes washers, dishwashers, toilets) and programs to encourage drought-tolerant landscaping on private property and on city properties. Mandatory conservation during a multiple year drought may also require prohibitions on outdoor use (irrigation, car washing, washing down pavement, etc.) and water rationing.

It is anticipated that the agencies operating the Delta pumps will continue to adjust future water diversions to limit or reduce substantial adverse effects on listed species based upon planning efforts currently in progress. It is the adopted policy of the SCVWD to not increase the amount of imported water. As the City of San José does not have a guaranteed entitlement for an increasing water supply, additional impacts to aquatic species in the Delta are not anticipated to result from implementation of the proposed General Plan.

Indirect Impacts to Natural Habitats and Species from Alternative Energy Sources

As described for the water supply in the preceding section, demands for energy within the City of San José could increase as a result of General Plan-related growth. In 2007, the City adopted the Green Vision, a 15-year plan for implementing environmental sustainability along with economic growth in the City. In addition to setting a goal to reduce per capita energy use by 50 percent, the Green Vision set a goal of receiving 100 percent of electrical power from clean, renewable sources.

[77]Bay Delta Conservation Plan. "Bay Delta Conservation Plan". Accessed October 13, 2010. <http://baydeltaconservationplan.com/default.aspx >
[78] Bay Delta Conservation Plan. "Plan Development Schedule". 2010. Accessed November 15, 2010. <http://baydeltaconservationplan.com/Schedule/PlanDevelopmentSchedule.aspx>

Currently, San José receives most of its electricity from PG&E, which produces energy via nuclear, hydroelectric, wind, geothermal, biomass, and solar sources in addition to burning of natural gas and coal. With a City goal of converting its energy sources entirely to clean, renewable sources by 2022, it is expected that the City could employ sources such as wind, geothermal, biomass, and solar (and possibly tidal) to meet demands of General Plan-related growth.

Each of these renewable energy sources has a potential to create adverse effects on biological resources. For example, wind turbines may result in injury and mortality of birds and bats, and solar energy plants require large footprints that modify habitat within the solar arrays. Infrastructure associated with the capture, collection, and transmission of electricity is necessary for all energy sources, and the footprint occupied by such infrastructure can result in impacts to sensitive habitats and special-status species.

The City is not in control of the effects that energy production by others has on biological resources. Rather, the energy producer is responsible for environmental review, permitting, and environmental compliance for each individual energy source (such as a solar energy plant or a wind farm). As a result, it is expected that impacts to biological resources will be mitigated by individual energy producers, rather than by the City. As the location of future off-site energy sources are not currently known, a full assessment of possible impacts would be speculative. The CEQA Guidelines do not require speculation in environmental review but rather disclosure of facts currently known and the foreseeable environmental impacts from those facts. Therefore, what is known in connection with this issue is noted in this section and beyond that which is known or reasonably foreseeable will not be speculated upon.

3.5.3.9 *Impacts to Trees in the Community Forest*

Urban Forest Trees

The urban forest is an important biological resource within the UGB for the following reasons. It is comprised of all the native and non-native trees planted in yards and parks, along streets, and as landscaping in building complexes and parking lots. Together, these trees provide nesting, cover, and foraging habitat for a variety of birds (including raptors) and mammals that are tolerant of humans, as well as providing necessary habitat for beneficial insects such as honeybees. Some trees, such as fruit trees, also provide food in the form of nectar and pollen resources and edible fruit or seeds. While the resources the urban forest provides are typically not as favorable for native wildlife as those provided by more extensive tracts of native vegetation, and non-native trees do not typically provide resources for as many native animals as do native trees, trees in the urban forest are often the only or the best habitat commonly or locally available within urban areas. Additionally, the urban forest collectively contributes to mitigating temperature increases within urban areas, and it also collectively contributes to conversion of the greenhouse gas carbon dioxide to oxygen, dampening climate change effects to some extent.

Direct impacts due to loss of trees may occur to the urban forest whenever planned growth areas, vacant lands, entitled parcels, or roads are developed as allowed or required under the General Plan. While trees are often replanted during development, typically, larger, more mature trees are removed and replaced with smaller, less mature trees, effectively reducing the total tree canopy, at least temporarily and, in some cases, permanently. Temporary loss of tree canopy from mature trees generally is not a short-term loss due to the length of time required for trees to mature.

Indirect impacts to the urban forest in terms of the health and persistence of trees may also occur because many trees do not adapt to changed conditions during development or redevelopment, such as pavement covering roots or limiting water reaching roots. Construction activities may result in tree mortality or reduced health or conditions such that the canopy and wildlife value is reduced for individual trees or groups of trees.

As existing low intensity development (*e.g.,* an industrial "campus") is demolished to make way for new development with buildings that occupy a greater proportion of the site, the intensity of the urban forest is often diminished. Garden apartments and older houses are replaced with higher density housing that occupies an entire building site leaving little or no room for landscaping. Outdoor space is provided on an elevated platform with trees and plants in containers.

As discussed in Section 3.5.1.6 Regulatory Framework, the City of San José Tree Removal Controls (San José Municipal Code, Sections 13.31.010 to 13.32.100) serve to protect all trees having a trunk that measures 56 inches or more in circumference (18 inches in diameter) at the height of 24 inches above the natural grade of slope. The ordinance protects both native and non-native tree species. A tree removal permit is required from the City of San José for the removal of ordinance-sized trees. Tree removal or modifications to all trees on public property (e.g., street trees within a parkstrip or the area between the curb and sidewalk) are handled by the City Arborist (Department of Transportation).

It has been the practice of the City of San José to require replacement of mature trees (12 to 18 inches in diameter or greater) at a ratio greater than 1 to 1 to reduce effects related to the loss of mature tree canopy within the City. Where replacement trees cannot be planted on a development site, the City has required plantings elsewhere in the neighborhood or area, for example at school or park facilities.

<u>Heritage Trees</u>

As described in the Regulatory Framework*,* the City Council maintains the City of San José Heritage Tree List to provide official recognition and protection of trees on both private and public property that are of special significance to the community because of their history, girth, height, species or unique quality. There are currently over 200 trees on the City's Heritage Tree List. Heritage trees in established single-family neighborhoods, parks and community facilities (such as the Palm Haven Willow Glen, and Naglee Park neighborhoods, along University Avenue, and in St. James Park, William Street Park, Saratoga Creek Park, Luther Burbank School, and at the Hayes Mansion) generally would not be disturbed by development and redevelopment in growth areas identified in the General Plan. Where large trees are found on vacant properties or in identified growth areas or Employment Lands within the UGB, the potential for direct or indirect impacts would be increased. Heritage trees located within or adjacent to growth areas include Chilean wine palms (*Judea chilensis*) in the North San José Planning Area (HT-04-04-A and –B), a California sycamore (*Platanus racemosa*) in the Berryessa Planning Area (HT-04-03), a monkey puzzle tree (*Araucana araucana*) at the Santa Clara County Fairgrounds in the South San José Planning Area (HT-07-006), and several large valley and coast live oaks (*Quercus lobata* and *Q. agrifolia*) in the Edenvale Planning Area (HT-02-06, -13, and -14). Additional Heritage trees are located in the immediate vicinity of several other growth areas in the Central, Edenvale, and South San José Planning Areas (refer to Table 3.5-5). Keesling's Black Walnut Shade Trees planted along Monterey Highway in southern San José, including in the Coyote Planning Area, are a California Registered Point of Historical Interest (Number SCL-056) and on the County of Santa Clara's Heritage Tree List.

Table 3.5-5
Heritage Trees Within or Adjacent to Growth Areas Subject to Development

Planning Area	Growth Area	Tree Species	CSJ Heritage Tree Number(s)	Location
Berryessa	Berryessa Planned Community	California sycamore	HT-04-03	1550 Lundy Avenue
Central	CR20 (adjacent)	California bay	HT-03-13	730 Miller Street
Edenvale	Old Edenvale	Valley oak	HT-02-06	Great Oaks Blvd. and Via del Oro (NW corner)
	Old Edenvale	Coast live oak	HT-02-13	San Ignacio Avenue and Santa Teresa Blvd.
	C37	Valley oak	HT-02-14	San Ignacio Avenue, Bernal Road
	Old Edenvale (adjacent)	Eucalyptus (11 trees)	HG-02-01	Blossom Hill CalTrain parking lot
North San José	NSJ-14	Chilean wine palm	HT-04-04-A HT-04-04-B	1769 Oakland Road
South	C45	Monkey puzzle tree	HT-07-06	County Fairgrounds
	VR26 (adjacent)	Valley oak	HT-07-03	3067 Cray Court

Once Heritage Trees have been designated by the City Council, they have greatly increased protection from harmful illegal pruning or removal. Violation can result in a citation and fine of up to $10,000, which can increase for repeated violations up to $30,000. Under the City's Municipal Code Section 13.68 any pruning of Heritage Trees needs to be done in consultation with the City Arborist to insure that the work done on or around the tree will not endanger its health, structure or life. Under the City's Tree Removal Ordinance, specific criteria or findings must be made before a permit for removal of a live or dead Heritage Tree would be granted.

Native Trees in Natural Areas within the City

Outside the UGB and within the City limits, trees in the community forest may be affected by land use changes or intensification and development of additional parks or park facilities, agriculture, golf courses and other recreational facilities, rural residential areas, or other allowed uses. In general, native trees most susceptible to direct impacts from development include native riparian trees, which may be removed or heavily trimmed for trail construction and road and bridge improvements, and native oak trees that may be removed for development of parcels in oak woodlands. Trail construction in natural habitats will also result in greater usage of these areas, and thus, potentially impact individual trees through soil compaction, vandalism, or other effects. A substantial indirect impact that may occur to oaks associated with an increase in human activities is the spread of the pathogen responsible for Sudden Oak Death in Central California. Similarly, increased irrigation can change the conditions for native oaks accustomed to a dry climate such that the trees are more susceptible to a number of diseases and parasites.

Hybridization of Native Trees with Non-native Trees

Native trees may hybridize with non-native trees introduced for landscaping purposes. For example, oaks hybridize readily with other species within the same oak group, as do native California sycamore trees with non-native London plane trees (*Platanus hybrida*). Hybridized individuals can readily pollinate or cross with native trees and further dilute native gene combinations within that population. Hybrids can be very vigorous and outcompete native trees. They also can have a different form and structure that may have reduced habitat value to native wildlife.

The risk of detrimental hybridization is highest when extensive plantings of related non-native trees are located in close proximity to natural areas, such as riparian zones or oak woodlands. For example, holly-leaved oak (*Quercus ilex*) is a scrubby, fast-growing non-native oak species that has been extensively planted in local urban stream corridors, apparently for slope protection and revegetation purposes. Holly-leaved oak is in the same oak group as several native oak species that occur locally, including scrub oak, blue oak, leather oak, and valley oak. Such plantings pose a hybridization risk to nearby native oak populations of these species. Similarly, London plane trees are extensively planted as street and parking lot trees and are used in landscaping for their attractive leaves and bark. London plane trees that may be planted in the North Coyote Valley Employment Land Area, which is near to areas mapped as California sycamore alluvial woodland, an extremely rare and sensitive riparian habitat type, are of particular concern.

Impacts may occur throughout the UGB if non-native trees are used in landscaping, but will likely be greatest wherever non-native landscaping trees are planted near native habitats, including Employment Land Areas that are currently open space, rural, or agricultural in character, such as North San José, Evergreen Campus Industrial, New Edenvale, or North Coyote Valley, or in planned growth areas adjacent to riparian habitats.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Impacts to the Urban Forest

The proposed *Envision San José 2040 General Plan* includes updated policies that address the effects of development on the urban forest. Revisions to existing policies clarify that tree protection and tree replacement measures and reasoned selection of tree plantings are required as a part of the City's development review process. Proposed General Plan Policies and Actions that provide program-level mitigation for impacts to trees within the City limits are identified below.

Community Forest	
Policy MS-21.4	Encourage the maintenance of mature trees, especially natives, on public and private property as an integral part of the community forest. Prior to allowing the removal of any mature tree, pursue all reasonable measures to effectively preserve it.
Policy MS-21.5	As part of the development review process, preserve protected trees (as defined by the Municipal Code), and other significant trees. Avoid any adverse affect on the health and longevity of protected or other significant trees through appropriate design measures and construction practices. Special priority should be given to the preservation of native oaks and native sycamores. When tree preservation is not feasible, include appropriate tree replacement, both in number and spread of canopy.

Policy MS-21.6	As a condition of new development, require, where appropriate, the planting and maintenance of both street trees and trees on private property to achieve a level of tree coverage in compliance with and that implements City laws, policies or guidelines.
Policy MS-21.7	Manage infrastructure to ensure that the placement and maintenance of street trees, streetlights, signs and other infrastructure assets are integrated. Give priority to tree placement in designing or modifying streets.
Policy MS-21.8	For Capital Improvement Plan or other public development projects, or through the entitlement process for private development projects, require landscaping including the planting of new trees to achieve the following goals: 1. Avoid conflicts with nearby power lines. 2. Avoid potential conflicts between tree roots and developed areas. 3. Avoid use of invasive, non-native trees. 4. Remove existing invasive, non-native trees. 5. Incorporate native trees into urban plantings in order to provide food and cover for native wildlife species. 6. Plant native oak trees and native sycamores on sites which have adequately sized landscape areas and which historically supported these species.
Policy MS-21.9	Where urban development occurs adjacent to natural plant communities (e.g., oak woodland, riparian forest), landscape plantings should incorporate tree species native to the area and propagated from local sources (generally from within 5-10 miles and preferably from within the same watershed).
Policy MS-21.10	Prohibit London plane trees from being planted in the Coyote Planning Area, which is located near the most significant stands of sycamore alluvial woodland in the City. Planting of this species is discouraged elsewhere, particularly near riparian areas. Prohibit holly-leaved oaks from being planted in areas containing stands of native oaks or in proximity to native oak woodland habitat.
Community Design Policies – Attractive City	
Policy CD-1.25	Within new development projects, include preservation of ordinance-sized and other significant trees, particularly natives. Any adverse affect on the health and longevity of such trees should be avoided through design measures, construction, and best maintenance practices. When tree preservation is not feasible include replacements or alternative mitigation measures in the project to maintain and enhance our Community Forest.

Existing Regulations and Adopted Plans and Policies

Existing local and state regulations that would reduce or avoid possible impacts to urban trees include:

- California Fish and Game Code Section 1602 (applies to riparian areas only)
- City of San José Tree Protection Ordinance
- City of San José Heritage Tree List
- City of San José Tree Protections contained in San José Municipal Code Section 13.28.

Discussion of Impacts to Trees in the Community Forest

To be consistent with the proposed General Plan policies and existing regulations and adopted plans and policies noted above, development outside the UGB, where native oaks and sycamores are found, will need to be carefully sited and designed. Allowed uses outside the UGB, such as retreat centers, golf courses, and cemeteries, will need to include measures that avoid direct and indirect impacts to trees from irrigation and the introduction of landscape species that could cross-breed with trees in native stands. Properties most suitable for these uses may be located in previous disturbed or developed areas where riparian and oak woodland habitats are not present or nearby.

Impact BIO-7: Implementation of proposed policies and existing regulations would substantially reduce direct and indirect impacts to community trees, including City of San José Heritage Trees. **(Less Than Significant Impact)**

3.5.3.10 *Impacts of Rancho del Pueblo and iStar Residential Options*

As discussed in Section 2.2.8 in the Project Description, this PEIR also evaluates options for residential land use designations and anticipated future development on two properties; the Rancho del Pueblo Golf Course in the Alum Rock Planning Area and the iStar property in the Edenvale Planning Area (Residential Option Sites). Under these options one or both of these properties would be designated for residential uses instead of the industrial uses assumed on the iStar property and the park/open space on the existing Rancho del Pueblo Golf Course. Because these options also include changes to other Growth Areas to balance the jobs and dwelling units, the overall amount of development capacity assumed under the Preferred Scenario would not change citywide.

A comparison and summary of biological resources impacts for the residential options is shown in Table 3.5-6. Implementation of an updated General Plan that includes one or both of the residential options for the Rancho del Pueblo and iStar sites would have impacts similar to those from the proposed project.

Table 3.5-6
Biological Resources Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance [1]
BIO-1	Direct Impacts to Natural Communities and Habitats	Natural communities are not present on either site and both are within the UGB.	same (LTS)
BIO-2	Indirect Impacts to Sensitive Serpentine Habitats	Vehicle miles traveled citywide and associated air emissions would be about the same as the proposed project and measures included in the General Plan would reduce indirect impacts to serpentine habitats from new development. There is no assurance that managed serpentine grassland preserves would be established to offset impacts, however.	same (S)

Table 3.5-6
Biological Resources Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance [1]
BIO-3	Impacts to Natural Communities and Habitats in Combination with Climate Change and Sea Level Rise	Natural communities are not present on either site, nor are they close to tidal marsh habitat or waterways.	same (LTS)
BIO-4	Impacts to Native Fish and Wildlife Movement	Neither site is located outside the UGB, near waterways, in Coyote Valley or the Alviso Planning Area where effects on fish and wildlife movement (including bird collisions with structures) are more likely to occur.	same (LTS)
BIO-5	Impacts to Special Status Plants	Natural communities, alkaline habitats, and serpentine soils (e.g., areas known to support special status plants) are not present on either site.	same (LTS)
BIO-6	Impacts to Special Status Animals	Both sites are within urban areas and natural communities and habitats such as aquatic, salt marsh, riparian serpentine grassland and oak woodland that support special status animals are not present. Like other urban sites in the City, development could affect urban adapted raptors and other nesting birds.	same (LTS)
BIO-7	Impacts to Trees in the Community Forest	Trees are present on both sites. Trees on the iStar site would be affected by development under either the residential option or the proposed project. Trees on the Rancho del Pueblo site may include trees planted as mitigation for previous tree removal. Like the proposed project, implementation of proposed policies and existing regulations would substantially reduce direct and indirect impacts to community trees through avoidance or mitigation measures.	same (LTS)
Other	Indirect Impacts from Procurement of Energy and Water Sources	The overall amount of development capacity, demand for energy and water, and associated indirect impacts would be the same as the proposed General Plan. The location of future off-site energy sources are not currently known and a full assessment of possible impacts would be speculative	same

[1] S= Significant; LTS = Less Than Significant
The determination of significance assumes implementation of proposed General Plan policies and actions and existing regulations previously identified throughout Section 3.5.3 Biological Resources Impacts.
Bold = New Significant Impact

3.5.4 Mitigation and Avoidance Measures for Biological Resources Impacts

3.5.4.1 *Proposed General Plan*

Indirect Impacts to Sensitive Serpentine Habitats

The timeline for adoption of an HCP/NCCP that covers southern Santa Clara County, including portions of San José, has been delayed and the scope of the draft HCP/NCCP may be modified. While it is the City's intent to address nitrogen deposition impacts from development within the City (refer to Actions ER 2.9 and ER 2.10), given current resources, the City cannot commit to designing and implementing an independent system of serpentine grassland preserves. Therefore, this impact, and the City's contribution to it with build-out of the draft *Envision San José 2040 General Plan,* will be significant and unavoidable because there is no assurance that a program of managed serpentine preserves will be established as a part of implementation of an adopted Santa Clara Valley HCP or an independent program designed and implemented by the City of San José. **(Significant Unavoidable Impact)**

3.5.4.2 *Rancho del Pueblo and iStar Residential Options*

Like the proposed General Plan discussed above, there is no assurance that measures to offset nitrogen deposition impacts will be established as a part of implementation of an adopted Santa Clara Valley HCP or an independent program designed and implemented by the City of San José. **(Significant Unavoidable Impact)**

3.5.5 Significance Conclusions

3.5.5.1 *Proposed General Plan*

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions would result in less than significant direct impacts to natural communities and habitats (including impacts in combination with climate change and sea level rise), impacts to native fish and wildlife movement, impacts to special status plants and animals, and impacts to trees in the community forest. **(Less Than Significant Impacts)**

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions would reduce nitrogen oxide emissions associated with vehicle trips through planned multi-modal improvements, trip reduction programs, and local land use strategies; however, with the projected increase in vehicle miles traveled, beyond or above the growth in population and employment, overall emissions are anticipated to increase. While contribution of new development to nitrogen deposition impacts could be offset by the establishment of managed serpentine grassland preserves, there is not adequate assurance that the City of San José will be able to unilaterally ensure these preserves will be established as a part of implementation of an adopted Santa Clara Valley HCP or a comparable independent program designed and implemented by the City of San José. **(Significant Unavoidable Impact)**

3.5.5.2 *Rancho del Pueblo and iStar Residential Options*

Implementation of the proposed *Envision San José 2040 General Plan* with the Rancho del Pueblo and iStar Residential Options in accordance with proposed policies and actions would result in less than significant direct impacts to natural communities and habitats (including impacts in combination with climate change and sea level rise), impacts to native fish and wildlife movement, impacts to special status plants and animals, and impacts to trees in the community forest. **(Less Than Significant Impacts)**

Implementation of the proposed *Envision San José 2040 General Plan* with the Rancho del Pueblo and iStar Residential Options in accordance with proposed policies and actions would reduce nitrogen oxide emissions associated with vehicle trips through planned multi-modal improvements, trip reduction programs, and local land use strategies; however, with the projected increase in vehicle miles traveled, beyond or above the growth in population and employment, overall emissions are anticipated to increase. While contribution of new development to nitrogen deposition impacts could be offset by the establishment of managed serpentine grassland preserves, there is no assurance that these preserves will be established as a part of implementation of an adopted Santa Clara Valley HCP or an independent program designed and implemented by the City of San José. **(Significant Unavoidable Impact)**

3.6 GEOLOGY AND SOILS

The following discussion evaluates geologic, soils, and seismic conditions and the environmental effects of implementation of the *Envision San José 2040 General Plan*. The analysis in this section is based in part on the following technical report:

- *Current Conditions Soils, Geology, and Geologic Hazards Envision San José 2040 General Plan Update*, Cornerstone Earth Group, October 19, 2010.

A copy of the current conditions report is included in the Technical Appendices to this Draft PEIR (Appendix F).

3.6.1 Existing Setting

3.6.1.1 *Soils and Geologic Setting*

The City of San José's sphere of influence covers approximately 280 square miles in the northeastern portion of the Santa Clara Valley. The topography of the Santa Clara Valley rises from sea level at the south end of San Francisco Bay to elevations of more than 2,000 feet to the east. The average grade of the valley floor ranges from nearly horizontal to approximately two percent generally down to the northwest. Grades are steeper on the surrounding hillsides.

The Santa Clara Valley is located within the Coast Ranges geomorphic province of California; an area characterized by northwest-trending ridges and valleys, underlain by strongly deformed sedimentary and metamorphic rocks of the Franciscan Complex. Overlying these rocks are sediments deposited during recent geologic times. The Santa Clara Valley consists of a large structural basin containing alluvial deposits derived from the Diablo Range to the east and the Santa Cruz Mountains to the west. Alluvial deposits are interbedded with bay and lacustrine (lake) deposits in the north-central region. The San José Alluvial Plain is located on the flat-lying floor of the Santa Clara Valley. The valley sediments were deposited as a series of coalescing alluvial fans by streams that drain the adjacent mountains. These alluvial sediments make up the groundwater aquifers of the area. Soil types in the area include clay in the low-lying central areas, loam and gravelly loam in the upper portions of the valley, and eroded rocky clay loam in the foothills.

The Diablo Range of mountains extends along the eastern boundary of the Santa Clara Valley. This range consists of northwest-trending subparallel ridges with slopes varying between 20 to 60 percent, and small intervening valleys. The Santa Cruz Mountains extend along the southwest portion of the Santa Clara Valley. This mountain range consists of similar northwest-trending ridges with intervening valleys, and slopes ranging from 40 to 60 percent or greater. Topographic features within the City of San José include the Silver Creek Hills, an extension of the Diablo Range in the southeastern portion of the City, and the Santa Teresa Hills, an extension of the Santa Cruz Mountains located in the south central portion of the City.

Soils and geologic conditions which can effect development and other activities within the city are discussed below.

Landslides

Landslides occur when the stability of a slope changes from a stable to an unstable condition. In San José, the most common types of landslides are rock fall, rock slide, debris slide, debris flows triggered by excessive rainfall, earthslide, debris flow, earth flow, and complex slides. Most landslide activity has occurred in the Diablo Range on the east side of the City with lesser amounts in the Santa Teresa Hills and Santa Cruz Mountains to the southwest. A Special Geologic Hazard Study Area, which includes smaller, shallow landslides within areas of deep seated, slow moving landslides, has been identified in San José's eastern foothills from Penitencia Creek to the City of Milpitas boundary.[79] This is an area where landsliding poses a particular hazard to public infrastructure, such as roads, sanitary sewer lines, storm drains, and water delivery systems as well as buildings.

The stability of a slope is affected by the following primary factors: inclination, material type, moisture content, orientation of layering, and vegetative cover. In general, steeper slopes are less stable than more gently inclined ones. Slopes underlain by deeply weathered bedrock, unconsolidated deposits, or soils with a high content of expansive clay also have a greater tendency to fail. Increased moisture content decreases a slope's stability so landslides are more common in the winter months. Landslides triggered by seismic shaking are termed "Earthquake-Induced landslides" and these are discussed in Section 3.6.1.2. Activities that can increase landslide potential include poorly designed cuts or fills, inappropriate blockage or diversion of streams, and removal of protective vegetation. Active landslides are usually obvious and easily identified; however, recent or old landslides, or large-scale landslides that encompass entire hillslopes may require the perspective of aerial photographs or subsurface exploration to be identified.

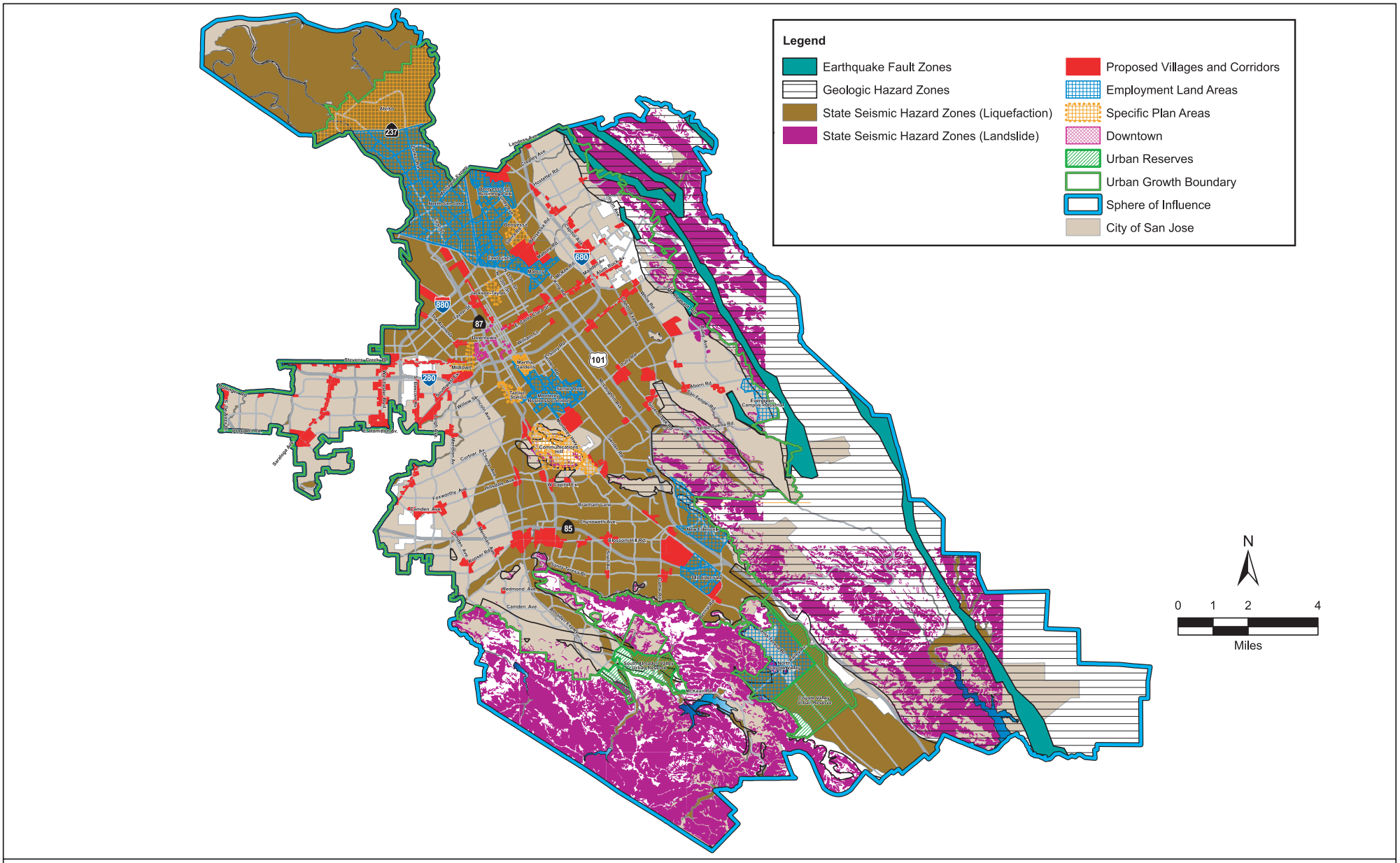
Landslide hazard zones identified by the State of California are shown on Figure 3.6-1. The City of San José also utilizes landslide susceptibility maps prepared by Cooper-Clark & Associates (1974) to identify areas where landsliding can occur.

Expansive and Weak Soils

Expansive soils have a high shrink-swell potential and occur where a sufficient percentage of certain clay materials are present in the soil. These soil conditions can impact the structural integrity of buildings and other structures. Much of the soil in San José is moderately to highly expansive. Moderately to highly expansive soils are found both on the valley floor and in hillside areas. Expansive soils on sloping hillsides are subject to soil creep, which can induce lateral forces on foundations and retaining walls.

Weak soils can compress, collapse, or spread laterally under the weight of buildings and fill, causing settlement relative to the thickness of the weak soil. Usually the thickness of weak soil will vary and differential settlement will occur. Weak soils also tend to amplify shaking during an earthquake, and can be susceptible to liquefaction, as discussed further in sections below. The most hazardous weak soils in San José are younger Bay Mud and certain granular soils or fills with a high water content. Bay Mud is present in the margins near San Francisco Bay; potentially collapsible soils are located in isolated areas around the City; and potentially liquefiable soils occur throughout much of the lands of San José.

[79] Development in this Special Geologic Hazard Study Area is regulated under Chapter 17.10 *Geologic Hazard Regulations* of the City's Municipal Code.



GEOLOGIC AND SEISMIC HAZARDS

FIGURE 3.6-1

Artificial Fill

Artificial fill, often referred to as undocumented or man-made fill, has been placed throughout the City of San José. The fills include materials that were placed to fill in naturally low areas, materials to create building pads and roadways, and landfills. In some cases, older, non-engineered fills have been placed without standards for fill materials or compaction. Building on non-engineered fills can result in excessive settlement of structures, pavements, and utilities. Artificial fills placed using current engineering practices, however, are likely to avoid impacts from excessive or differential settlement.

Naturally-Occurring Asbestos

Chrysotile and amphibole asbestos are minerals that occur naturally in certain geologic settings in the City of San José, most commonly in ultramafic rocks.[80] The most common type of asbestos is chrysotile, which is commonly found in the Santa Clara Valley area in serpentinite rock formations. When disturbed by construction, grading, quarrying, or mining operations, asbestos-containing dust can be generated. Exposure to asbestos dust can result in adverse health effects including lung cancer, mesothelioma, and asbestosis. In the San José area, naturally-occurring asbestos may be found in mountainous areas or areas of shallow bedrock. Undisturbed rock formations containing asbestos have not been identified as health threats. Areas of definite and likely natural asbestos occurrence (with 1,000 foot buffers) are shown on Figure 3.6-2.

Erosion

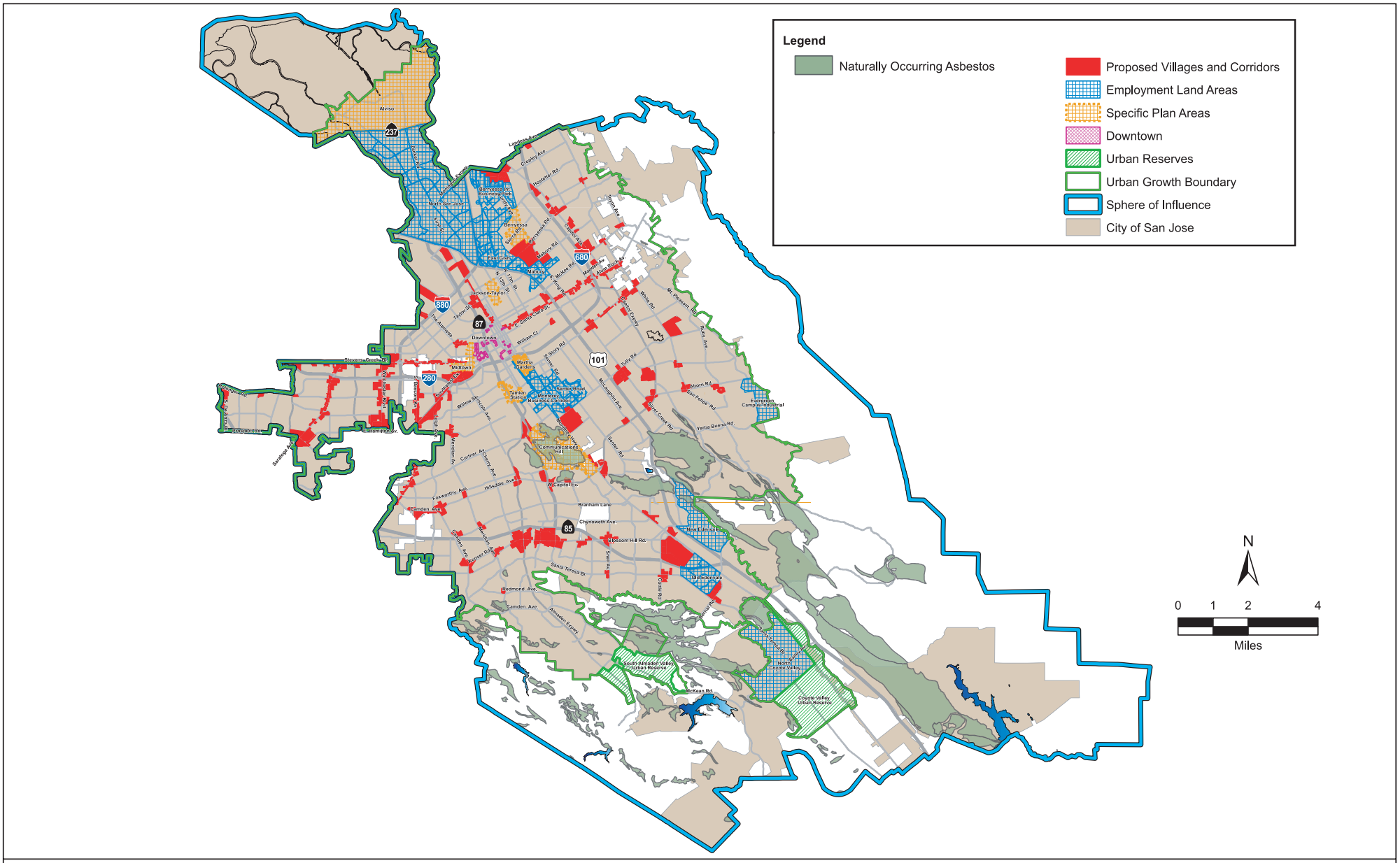
Erosion typically occurs when bare soils are exposed to water or wind. Erosion can occur as a result of rainfall in areas where construction activities have exposed soils and bedrock. Erosion can result in various impacts, including the loss of topsoil, sedimentation of creeks and drainages, undercutting of stream banks, degradation of natural habitats, and possible decrease of slope stability. Accelerated erosion can be caused by removal of vegetative cover, increases in runoff, poor grading practices, and excessive irrigation.

In San José, erosion occurs primarily from the concentration of water generated on hillsides where erosion potential is high to very high.[81] In addition to erosion of hillsides, erosion occurs in stream and creek beds and banks during high flow periods.

Ground Subsidence Due to Groundwater Removal

Groundwater removal from the aquifers beneath Santa Clara Valley has caused historic subsidence of the ground surface over broad areas. Subsidence results from the compaction of dewatered sediments in underlying aquifers. Subsidence can have a number of effects including: changes in the slope of streams, canals, or drains; damage to structures, roads, railroads, levees, and pipelines; fissuring at the ground surface; and failure of well casings. The rate of subsidence was greatest in San José in the first half of the 20th century when pumping for agriculture was at its peak. More than eight feet of subsidence was estimated to have occurred in a trough extending from Edenvale to

[80] Ultramafic rocks are characterized by a very low silica content and very high levels of iron and magnesium.
[81] As shown on Erosion Potential maps (Plate 5A and 5B) in Cooper-Clark & Associates. *Geotechnical Investigation, City of San José's Sphere of Influence.* 1974.



NATURALLY OCCURING ASBESTOS

FIGURE 3.6-2

Agnew (in the City of Santa Clara) in the period from 1934 to 1967.[82] In 1974, Cooper-Clark and Associates estimated as much as 10 feet of future land subsidence below the 1967 levels centered near San José State University. Approximately 12 to 13 feet is the maximum amount of subsidence estimated in Santa Clara Valley.[83] Subsidence has stopped or greatly slowed now because of improved groundwater management. Regional subsidence is not expected to be a problem in San José unless groundwater pumping increases above the rate of recharge.

High Groundwater Levels

Parts of North San José are characterized by a relatively high groundwater table. Geotechnical investigations from recent projects in the North San José area have found groundwater at depths as high as five feet below the existing ground surface. Generally groundwater levels are highest near the Guadalupe River and Coyote Creek. High groundwater levels can result in damage to structures from hydrostatic pressure.

Soil Conditions for Septic Tanks or Alternative Wastewater Systems

The City of San José is fully served by a sanitary sewer system and its publicly owned treatment works at the San José/Santa Clara Water Pollution Control Plant in the Alviso area of San José. For this reason, soil conditions within the City do not place limits on wastewater systems.

Mineral Resources

One area in the City of San José is designated by the State Mining and Geology Board under the Surface Mining and Reclamation Act of 1975 (SMARA) as containing mineral deposits which are of regional significance. An area of Communications Hill in central San José, bounded generally by the Union Pacific Railroad, Curtner Avenue, State Route 87, and Hillsdale Avenue, is designated by the State Mining and Geology Board as a regional source of construction aggregate materials.

The Azevedo Quarry in unincorporated Santa Clara County is located within this area. It is surrounded by the City of San José on the east side of Communications Hill. The quarry has completed harvesting and has been reclaiming the site consistent with a reclamation plan approved by the County of Santa Clara. A Use Permit for concrete, asphalt, and soil recycling was in place for the quarry site in February 2010. Most of the land within the Azevedo Quarry is fully reclaimed; a minimal amount of reclamation work is needed on the remainder of the property.[84] In 1992, the Communications Hill Planned Community, a Specific Plan for a dense urbanized residential neighborhood, was approved. The Specific Plan area includes the area designated by the State Mining and Geology Board (EE-1) as a mineral resource under SMARA and land within the City limits as well as unincorporated Santa Clara County. The Final Environmental Impact Report for the

---

[82] Source: Poland, J.F. *Land Subsidence in the Santa Clara Valley, Alameda, San Mateo, and Santa Clara Counties, California:* U.S. Geological Survey Technical Report 2. 1971.

[83] Sources: Santa Clara Valley Water District, *Subsidence*. Accessed February 18, 2010. Available at: <http://www.valleywater.org/Services/ LandSubsidence.aspx> and Leake, S.A. *Land subsidence from ground-water pumping: U.S. Geological Survey*. 2004. Accessed February 18, 2010. Available at: <http://geochange.er.usgs.gov/sw.changes/anthropogenic/subside/>.

[84] Source: County of Santa Clara. *Surface Mine and Reclamation Act (SMARA) Program Update.* February 10, 2010., Accessed February 19, 2010. Available at: <http://www.sccgov.org/keyboard/attachments/Committee%20Agenda/2010/February%2018,%202010/202880022/KeyboardTransmittalWeb202966566.PDF>.

Communications Hill Specific Plan identified that the General Plan changes at that time would result in significant, unavoidable impacts to state designated mineral resources.

Housing and streets have been developed in the portion of the mineral resource area within City limits. Although a portion of the remaining undeveloped portion of the Specific Plan area is planned to remain as Non-Urban Hillside, urban development on Communications Hill and the vicinity limits access to mineral resources in this area. No other areas of the City of San José have designated mineral deposits subject to SMARA.

3.6.1.2 *Seismicity and Seismic Hazards*

The San Francisco Bay Area is recognized by geologists and seismologists as one of the most seismically active regions in the United States. Significant earthquakes occurring in the Bay Area are generally associated with crustal movement along well-defined, active fault zones of the San Andreas Fault system, which spans the Coast Ranges from the Pacific Ocean to the San Joaquin Valley. The San Andreas Fault generated the great San Francisco earthquake of 1906 and the Loma Prieta earthquake of 1989 and passes through the Santa Cruz Mountains southwest of San José. Two other major active faults within the City's Sphere of Influence are the Hayward Fault, located to the north, and the Calaveras Fault, located in the hills to the east (refer to Figure 3.6-1). These two fault zones merge in a structurally complex area of the hills between Mission Peak and Mount Hamilton.

Fault Rupture

Fault rupture occurs when fault displacement extends upward to the ground surface creating a visible offset. Fault rupture may occur abruptly during an earthquake or slowly due to fault creep. Ground rupture due to fault movement typically results in a relatively small percentage of total damage in an earthquake; however, displacements from surface rupture along fault traces can result in extensive damage to structures.

Alquist-Priolo Earthquake Fault Zone maps (originally called "Special Studies Zones") by the California Geological Survey show Holocene-active faults (movement within the last 11,000 years) with bordering zones within which construction for human occupancy is not permitted until studies have been conducted showing there are no signs of recent fault activity crossing a project site. The investigations usually involve trenching. As shown on Figures 3.6-1, Alquist-Priolo Earthquake Zones for the Calaveras and Hayward Faults have been designated within the City's Sphere of Influence and portions of the Hayward Fault Zone are within the City's Urban Growth Boundary.

The City of San José also has established City of San José Special Study Zones and City of San José Potential Hazard Zones that extend beyond the Alquist-Priolo Earthquake Zones. Evaluation of potential fault hazards is required by the City Geologist for all associated bedrock/hillside sites and soil sites within certain potential fault rupture areas.

Ground Shaking

Ground shaking is the most widespread hazardous phenomenon associated with seismic activity in San José. Ground shaking will impact developments constructed on the valley floor and hillsides. Earthquake damage resulting from ground shaking is determined by several factors: the magnitude of an earthquake, depth of focus, distance from the fault, intensity and duration of shaking, local ground

water and soil conditions, presence of hillsides, structural design and the quality of workmanship and materials used in construction.

Liquefaction and Other Ground Failures

Seismic activity can also result in hazards from several forms of ground failure. Ground failure refers to seismically-induced ground movements which are significant enough to cause severe distress or infrastructure failure. Ground failure includes surface rupture along fault traces, vertical and lateral failures due to soil liquefaction,[85] seismically-induced landslides, earth lurches, lateral spreading, differential settlement, and levee or dam failure.[86] Discussions of each of these ground failure mechanisms are presented below; surface rupture along fault traces is discussed under the *Fault Rupture* section above.

Liquefaction, Lateral Spreading, and Related Ground Failure

The majority of the City of San José is located within the Santa Clara Valley, which is a broad alluvial plain with alluvial soils extending several hundred feet below the ground surface. During strong seismic shaking, loose, saturated sand and silt layers can soften, resulting in substantial ground deformation. Factors that influence liquefaction potential include geologic age of a soil deposit, soil type, soil cohesion, and ground water level. Along active stream channels, liquefaction susceptibility is typically high. Bedrock areas are not typically susceptible to liquefaction.

Lateral spreading is a type of ground failure that can occur where an open slope face is present. It typically occurs as a form of horizontal displacement of relatively flat-lying material toward an open face such as an excavation (either temporary or permanent), channel, or body of water. This movement is generally due to failure along a weak plane in soils and may be associated with liquefaction. Areas of San José most prone to lateral spreading include lands adjacent to the Guadalupe River and Coyote Creek, where liquefaction probability is greatest and in the marshland deposits of northernmost San José. State of California Seismic Hazard Zones for liquefaction are shown on Figure 3.6-1.

Other manifestations of seismically induced ground failure include sand boils, ground fissuring or ground cracking (also referred to as lurching), and are a result of fracturing, distortion, and displacement of near surface soils from seismic shaking. The occurrence of this type of ground failure is often related to moisture content of the soils and it is most commonly seen in previous or current marshy areas or valley bottom lands.

Differential Seismic Settlement (Unsaturated Sand Compaction)

Loose unsaturated sandy soils can settle during strong seismic shaking. In San José, sandy soils are present along creeks, areas adjacent to creeks, and other low-lying areas where sandy sediments were deposited during past flooding events. Differential settlement during seismic shaking can be a hazard to buildings, roadways, trails, and hardscape improvements.

[85] Liquefaction is a process where strong earthquake shaking causes water-saturated sediment to temporarily lose strength and act as a fluid.

[86] Other types of ground failure associated with liquefaction, including flow failure at shorelines, are discussed in Appendix E. As the potential for large scale flow failure is remote within the City of San José, flow failure is not discussed in the text of this EIR. Potential levee or dam failure is discussed in *Section 3.7 Hydrology and Water Quality.*

Levee or Dam Failure

The potential for levee or dam failure during or following a seismic event and areas of possible inundation are discussed under flooding impacts in Section 3.7 Hydrology and Water Quality.

Earthquake-Induced Landslides

In hillside areas and along creeks, earthquakes can trigger landslides. The State of California has mapped areas considered susceptible to earthquake-induced landslides (refer to Figures 3.6-1). Hazard areas extend into developable areas of the City at the edge of the East Foothills, in the Silver Creek Hills, the northern tip of the Santa Teresa Hills, and locations at the edge of the Almaden Valley.

Seismically-Induced Waves

Earthquakes can generate waves in bodies of water that can cause damage on land. In the ocean, seismically-induced waves are caused by displacement of the sea floor by a submarine earthquake and are called tsunamis. Seiches are waves produced in a confined body of water such as a lake or reservoir by earthquake ground shaking or landsliding. Only the northernmost extent of San José's Sphere of Influence adjacent to San Francisco Bay and Guadalupe and Alviso sloughs (i.e., not within the City's Urban Service Area) are presently believed to be within a tsunami run-up area. Seiches are possible at reservoir, lake, or pond sites within San José; however, the potential for loss of life from this hazard is low.

3.6.1.3 *Regulatory Framework*

Development within the City of San José is regulated by various Federal, State, and local agencies to reduce the potential impacts of geologic and seismic hazards to people, property and the environment, as well as how planned activities will affect adjacent properties. Erosion control is also required under the federal Clean Water Act and the State of California Porter-Cologne Water Quality Act. Relevant laws, regulations and programs are described below.

Federal

Clean Water Act - NPDES Permit Program

The federal Clean Water Act regulates storm water discharges under the National Pollutant Discharge Elimination System (NPDES) permit program. In California regulations set forth by the U.S. Environmental Protection Agency (EPA) and the State Water Resources Control Board have been developed to fulfill NPDES program requirements. As described below, under the NPDES General Construction Permit in California, best management practices, including erosion and sediment control, need to be in place to avoid adverse effects on water quality during construction activities. Additional information on federal Clean Water Act requirements is provided in Section 3.7 Hydrology and Water Quality.

State of California

Alquist-Priolo Earthquake Fault Zoning Act

The primary purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling construction. Local agencies must regulate most development projects within the zones. Projects include all land divisions and most structures for human occupancy. Single-family wood-frame and steel-frame dwellings up to two stories not part of a development of four units or more are exempt. However, local agencies can be more restrictive than state law requires. Pursuant to this act, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (generally at least 50 feet).

Seismic Hazard Mapping Act and Natural Hazards Disclosure Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction (failure of water-saturated soil) and earthquake-induced landslides. The California Geological Survey prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, earthquake induced landslide and liquefaction hazards and other ground failures. Under the Act, a subdivision, construction or redevelopment project within an identified seismic hazard zone shall be approved only when the nature and severity of the seismic hazards at the site have been evaluated in a geotechnical report and appropriate mitigation measures have been proposed. If a developed property lies within a mapped seismic hazard zone, under the Natural Hazards Disclosure Act, that fact must be disclosed by the seller to prospective buyers.

In order to assist in the implementation of the Seismic Hazards Mapping Act, the State has published specific guidelines for evaluating and mitigating seismically induced hazards.[87] These guidelines are changing how geologic and seismic hazard evaluations are performed with computer modeling and spreadsheet analysis playing a major role in the evaluation of liquefaction, earthquake induced landslides and other geologic/seismic hazards. Earthquake research continues to provide the basis for how seismic hazard analysis will be performed in the future and what criteria will be used to estimate seismic hazard potential.

California Building Codes

The Building Standards Commission is authorized by California Building Standards Law (1953) (Health and Safety Cody sections 18901 through 18949.6) to administer the process related to the adoption, approval, publication, and implementation of California's building codes. These building

[87] These include guidelines and publications include, but are not limited to California Geological Survey (CGS) *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, *Special Publication 117A*, September 11, 2008; Southern California Earthquake Center (SCEC). 2002. *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California*, March 2002; and SCEC. 1999. *Recommended Procedures for Implementation of DMG Special Publications 117*, March 1999.

codes serve as the basis for the design and construction of buildings in California including within the City of San José.

The State of California establishes and updates building standards and every local agency enforcing building regulations, must adopt the provisions of the California Building Code (in Title 24, California Code of Regulations) within 180 days of its publication. Currently, the 2007 California Building Code contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, the strength of the ground, and distance to seismic sources.

Regulations for Schools and Hospitals

The geologic and seismic safety of schools is reviewed and approved at the State of California level by the Division of the State Architect under The Field Act (1933). The geologic and seismic safety of acute care hospitals is reviewed and approved at the State of California level by the Office of Statewide Health Planning and Development (OSHPD) under the Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983, also known as the Seismic Safety Act.

Regulations for Landfills

Landfills within the City of San José are regulated by the State of California Integrated Waste Management Board (CIWMB) and San Francisco Bay Regional Water Quality Control Board under Title 27 of the California Code of Regulations. The City of San José acts as the Local Enforcement Agency (LEA) for landfills in San José under CIWMB regulations. Solid Waste Permits issued by these agencies and approval of Landfill Closure Plans include requirements for static and dynamic (seismic) safety of landfill slopes and drainage controls to prevent accelerated erosion and uncontrolled stormwater runoff.

Unreinforced Masonry Act

The Unreinforced Masonry Building (URM) Law was enacted in 1986 and is recognized by local governments including the City of San José to: 1) create an inventory of URM Buildings, 2) establish an earthquake loss reduction program for these buildings, and 3) report all information about these efforts to the Seismic Safety Commission. Since the passage of the State's URM Law in 1986, no lives were lost in fully retrofitted buildings in recent earthquakes.[88]

Asbestos Airborne Toxic Control Measure

In July 2002, the California Air Resources Board approved an Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining activities in areas where naturally-occurring asbestos (NOA) will likely be found and they provide required dust mitigation measures and practices (California Code of Regulations, Title 17, Section 93105). If NOA is encountered during grading for new development, typical mitigation involves capping asbestos containing bedrock or fill materials with clean, non-asbestos containing materials, performing air and dust monitoring during grading activities, and using best-management practices to limit spreading asbestos-containing materials to surrounding areas. Locally the Bay Area Air Quality Management District has a naturally-occurring asbestos (NOA) program that is a part of implementation of this control measure. BAAQMD's NOA program requires that applicable

[88] Source: State of California, *Seismic Safety Commission Annual Report for 2005*, http://www.seismic.ca.gov/pub/2005%20Annual%20Report.pdf, accessed February 19, 2010.

notification forms be submitted to the BAAQMD in accordance with detailed Asbestos ATCM Inspection Guidelines Policies and Procedures.

NPDES General Construction Permit

Per the federal Clean Water Act and State of California Porter-Cologne Water Quality Control Act, the State Water Resources Control Board has implemented a National Pollution Discharge Elimination System (NPDES) General Construction Permit for the State of California. Construction activity subject to this permit includes clearing, grading, and ground disturbances such as stockpiling or excavation. For projects disturbing one acre or more of soil, a Storm Water Pollution Prevention Plan (SWPPP) that includes site-specific Best Management Practices (BMPs) to control erosion and sedimentation and maintain water quality during the construction is required. The SWPPP also contains a summary of the structural and non-structural BMPs to be implemented during the post-construction period, pursuant to the nonpoint source control practices and procedures of the City of San José and the RWQCB. This permit program and other erosion control requirements in the City of San José are discussed in Section 3.7 Hydrology and Water Quality.

City of San José

San José 2020 General Plan

Existing policies in the City of San José General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Relevant General Plan Policies that directly address reducing and avoiding geology and soils hazards include the following:

- Hazards Policies #1, 2, and 4
- Soils and Geologic Conditions Policies #1-4 and 6-8
- Earthquake Policies #1, 3-5, and 7

Municipal Code

Title 24 of the San José Municipal Code includes the City of San José adopted 2007 California Building, Plumbing, Mechanical, Electrical, Existing Building, and Historical Building Codes under ordinance No. 28166 (2007).[89] These regulations are based upon the 2007 California Building Code and include requirements for building foundations, walls, and seismic resistant design. Requirements for building safety and earthquake hazard reduction are also addressed in Chapter 17.40 (Dangerous Buildings) and Chapter 17.10 (Geologic Hazards Regulations) of the City's Municipal Code. Requirements for grading and excavation permits and erosion control are included in Chapter 17.10 (Building Code, Part 6 Excavation and Grading).

Geologic hazards regulations in Chapter 17.10 of the Municipal Code restrict the ability to issue grading and building permits within defined geologic hazard zones until the Director of Public Works has issued a Certificate of Geologic Hazard Clearance. The areas of the City affected by these requirements include identified areas with very high landslide susceptibility, high or moderate/high landslide susceptibility zones, designated State Seismic Hazard Zones for

[89] Construction of structures other than public schools and acute care hospitals are reviewed and approved by the City of San José.

Liquefaction and Earthquake-Induced Landslides, a special geologic hazard zone in the eastern foothills, and mapped City of San José fault hazard zones.

The City's Municipal Code (Section 17.10.600) is unique with regard to the investigation of deep seated landslides within an area of the eastern foothills. A Regional Geologic Study is required prior to development and extension or construction of new infrastructure due to the presence of active, deep seated landslides in this area. Large scale development and the extension of new public infrastructure in this area is discouraged due to the potential for landslide hazards and slope instability.

In 1991, the City of San José adopted an Unreinforced Masonry Building (URM) Code. As of 2006, 100 percent of the 147 identified URM buildings in the City are in compliance with the 1991 San José Ordinance. Compliance options included: retrofit, vacating the building or demolition. By 2006, 113 buildings were retrofitted, 12 buildings demolished, seven were vacant and secure pending retrofit, 11 had active construction, and two buildings were exempt as warehouse use and one determined not a URM. Financial assistance for retrofit continues to be available through the City's Redevelopment Agency.[90]

Grading code standards for work on slopes have changed over the years with a current emphasis on the analysis of various earth slopes and landslides for slope stability under seismic conditions (also see *Seismic Hazard Mapping Act and Natural Hazards Disclosure Act* under State Regulations, above). To ensure development is not subject to slope stability hazards, proposed graded slopes and fill embankments are analyzed under both long term static and seismic conditions.

Municipal Regional Stormwater NPDES Permit

The EPA has delegated oversight of NPDES requirements for municipal urban runoff discharges in California to the SWRCB and the nine RWQCB offices. In 2009, the San Francisco Bay Regional Water Quality Control Board issued a regional NPDES permit (NPDES Permit Order R2-2009-0074, NPDES Permit No. CAS612008) for stormwater consolidating requirements for all Bay Area municipalities and flood control agencies that discharge directly to San Francisco Bay. Some provisions require regional action and collaboration, but others relate to specific municipal activities over which the municipalities have individual responsibility and control. The current permit is effective for five years, until October 14, 2014.

Under the Municipal Regional Stormwater NPDES Permit (also referred to as MRP), development projects that create, add, or replace 10,000 square feet or more of impervious surface area are required to control post-development storm water runoff through source control, site design, and treatment control best management practices (BMPs). Additional requirements must be met by certain large projects that create one acre or more of impervious surfaces (also see City of San José Hydromodification discussion below). Beginning December 1, 2011, the impervious surface threshold for Regulated Projects will be decreased from 10,000 square feet to 5,000 square feet for special land use categories (e.g., auto services facilities, gas stations, restaurants, parking lots) and most Regulated Projects will have to treat stormwater runoff with additional treatment measures, such as harvesting and re-use, infiltration, evapotranspiration, or biotreatment.

[90] Source: State of California, Seismic Safety Commission, *Status of the Unreinforced Masonry Building Law, 2006 Progress Report to the Legislature*, http://www.seismic.ca.gov/pub/CSSC%202006%20URM%20Report%20Final.pdf, accessed February 19, 2010.

In addition to water quality controls, the Regional Municipal NPDES permit has hydromodification controls as defined in a Hydromodification Management Plan (HMP). The goal of an HMP is to manage increased peak runoff flows and volumes (hydromodification) to avoid erosion of stream channels and degradation of water quality both on and off development sites.

City of San José Urban Runoff Policy 6-29

This City Council policy requires all new and redevelopment projects to implement Post-Construction Best Management Practices (BMPs) and Treatment Control Measures (TCMs) to the maximum extent practicable. This policy also establishes specified design standards for Post-Construction TCMs for applicable projects, including new development projects that create ten thousand (10,000) square feet or more of impervious surface area.

City of San José Hydromodification Policy 8-14

This City Council policy requires stormwater discharges from new and redevelopment projects that create or replace one acre or more of impervious surface to be designed and built to control project-related hydromodification, where such hydromodification is likely to cause increased erosion, silt pollutant generation, or other impacts to beneficial uses of local rivers, streams, and creeks. The policy establishes specified performance criteria for Post-Construction hydromodification control measures and identifies projects which are exempt from hydromodification requirements.

3.6.2 Thresholds of Significance

For the purposes of this PEIR, a geologic or seismic impact is significant if implementation of the proposed *Envision San José 2040 General Plan* would:

- Expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure (including liquefaction), landslides, or expansive soils;
- Cause substantial erosion or siltation;
- Expose people or property to major geologic hazards that cannot be mitigated through the use of standard engineering design and seismic safety techniques; or
- Result in the loss of availability of a locally-important mineral resource delineated on a local general plan, specific plan or other land use plan.

3.6.3 Geologic and Seismic Impacts – General Plan

Possible soil, geologic and seismic conditions that could adversely affect future development and redevelopment within the urbanized areas of San José are identified for the 13 Planning Areas and each of the planned growth areas (Villages, Employment Lands, and Specific Plan areas) in Appendix F (refer to Tables A1-A13). Additional development within the Communications Hill Specific Plan Area could occur in an area designated as a mineral resource by the State Mining and Geology Board under SMARA. These conditions and relevant proposed General Plan policies are described below.

3.6.3.1 *Soil and Landslide Hazards*

Soil and geologic hazards of concern in the City of San José are primarily related to expansive soils, weak soils, artificial fill, and landfills.

The near-surface sediments blanketing much of the City of San José are composed primarily of fine-grained silt and clay soils with varying expansive clay minerals, as well as varying sand and gravel content. Such units are typically moderately to very highly expansive. In general, alluvial fan sediments become increasingly finer grained with greater distance from the mountains. Consequently, expansive soils are more likely to be encountered in the relatively flat portions of Santa Clara Valley, where clayey silts and silty clays are present. Locally, expansive bedrock such as claystone, may be present in hillside areas of San José. Where expansive soils are present, foundations and pavements can be damaged when soils go through cycles of wetting and drying.

Artificial fill and former landfill sites pose specific geotechnical challenges for development. These areas are subject to differential settlement of the land surface which can damage infrastructure (such as roads, sewer lines, storm drains and water delivery systems) as well as building foundations and pavements. Differential settlement can also affect site drainage patterns and result in water damage to buildings, landscaping, or infrastructure. Development on former landfills is also subject to increased seismic hazards, as discussed in Section 3.6.3.5 Seismic Hazards.

Landslides are locally of concern at the base of foothill areas. In general, slopes steeper than approximately 15 degrees are most susceptible to landslides; however, failures can occur on flatter slopes if unsupported weak rock units are exposed on a slope face. Areas susceptible to landsliding are present in the Evergreen Specific Plan Area, Silver Creek Specific Plan Area, Evergreen Campus

Industrial Employment Land Area, North Coyote Valley Employment Land Area, Old Edenvale Employment Land Area, and New Edenvale Employment Land Area.

High groundwater levels are a concern in the North San José and Alviso Planning Areas. Groundwater levels are discussed in Section 3.7 Hydrology and Water Quality.

New development under the proposed General Plan would occur primarily as intensification of previously developed areas throughout the City. Transportation network changes, including the construction of several interchanges and roadway bridges, could occur on areas expansive or weak soils. Hazards associated with expansive soils, weak soils, artificial fill, development on former landfills, and landslides will be reduced and managed consistent with City adopted regulations and policies, in combination with state building regulations.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Soil and Landslide Hazards Impacts

The proposed *Envision San José 2040 General Plan* includes updated hazards policies that address soil and landslide hazards. Revisions to existing policies clarify that soil and landslide hazards reduction measures are required as a part of the City's development review process and cite the Seismic Hazards Mapping Act adopted or approved subsequent to adoption of the City's 2020 General Plan. Proposed General Plan Policies and Actions (Chapters 3, 4, and 6) that provide program-level mitigation for geologic, soil and landslide hazards within the City are identified below.

Emergency Management	
Policy ES-4.9	Permit development only in those areas where potential danger to the health, safety, and welfare of persons in that area can be mitigated to an acceptable level.
Policy ES-4.10	Update, as necessary, the San José Building Code, Fire Prevention Code and Municipal Code to address geologic, fire, flooding and other hazards, and to respond to changes in applicable State Codes.
Geologic and Soil Hazards	
Policy EC-4.1	All new or remodeled habitable structures shall be designed and built in accordance with the most recent California Building Code and municipal code requirements as amended and adopted by the City of San José, including provisions for expansive soil, and grading and storm water controls.
Policy EC-4.2	Development in areas subject to soils and geologic hazards, including unengineered fill and weak soils and landslide-prone areas, will be approved only when the severity of hazards have been evaluated and if shown to be required, appropriate mitigation measures are provided. New development proposed within areas of geologic hazards shall not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties. The City of San José Geologist will review and approve geotechnical and geological investigation reports for projects within these areas as part of the project approval process.
Policy EC-4.3	Locate new public improvements and utilities outside of areas with identified soils and/or geologic hazards (e.g., deep seated landslides in the Special Geologic Hazard Study Area and former landfills) to avoid extraordinary maintenance and

	operating expenses. Where the location of public improvements and utilities in such areas cannot be avoided, effective mitigation measures will be implemented.
Policy EC-4.4	All new development shall conform to the City of San José's Geologic Hazard Ordinance.
Policy EC-4.7	Consistent with the San José Geologic Hazard Ordinance, prepare geotechnical and geological investigation reports for projects in areas of known concern to address the implications of irrigated landscaping to slope stability and to determine if hazards can be adequately mitigated.
Action EC-4.8	Maintain and update Citywide geologic hazard maps for planning purposes.
Action EC-4.9	Revise and update provisions of the City of San José Geologic Hazard Ordinance, including geologic hazard zones, as new information becomes available from state and federal agencies on landsliding potential and other geologic hazards.
Action EC-4.10	Require a Certificate of Geologic Hazard Clearance to be issued by the Director of Public Works prior to issuance of grading and building permits within defined geologic hazard zones.
Action EC-4.11	Require the preparation of geotechnical and geological investigation reports for projects within areas subject to soils and geologic hazards, and require review and implementation of mitigation measures as part of the project approval process.
Hillside Development Hazard Avoidance	
Policy LU-18.1	Allow development in hillside areas only if potential danger to the health, safety, and welfare of the residents, due to landslides, fire, or other environmental hazards, can be mitigated to an acceptable level as defined in State and City ordinances and policies. Demonstrate that all new development will not result in significantly increased risks associated with natural hazards.
Policy LU-18.2	Design development to minimize exposure of the public to environmental hazards, such as landslides and fires.
Policy LU-18.3	Require soils and geologic review of hillside development proposals to assess such potential hazards as seismic hazards, surface ruptures, liquefaction, landsliding, mudsliding, erosion and sedimentation in order to determine if these hazards are present and can be adequately mitigated. Use geotechnical studies of hillside development proposals to determine the full extent of seismic and other hazards, the optimum locations for structures, roads, and utilities, the advisability of special structural requirements and amenities such as swimming pools or ponds, and the feasibility and desirability of a proposed structure and/or irrigated landscaping in a specified location.
Policy LU-18.4	Incorporate mitigation measures identified through geotechnical and other studies necessary to protect public safety and the natural environment.
Policy LU-18.5	Design hillside development within areas of potential geological hazards to avoid being endangered by, or contributing to, the hazardous conditions on the site or on adjoining properties.
Policy LU-18.6	Avoid locating public improvements, communication facilities, and utilities in hillside areas with identified soils and/or geologic hazards to limit any extraordinary maintenance and operating expenses. When the location of public improvements, communication facilities, and utilities in such areas cannot be

	avoided, implement effective mitigation measures to maximize their potential to remain functional during and after a seismic event.

Existing Regulations and Adopted Plans and Policies

Existing state and local regulations that would reduce or avoid possible geologic and seismic impacts include:

- California Building Code, as amended [safety standards for the design and construction of buildings on expansive soils and under static and dynamic (seismic) conditions]

Impact GEO-1: New development and redevelopment allowed under the proposed General Plan could occur in areas with identified soil or landslide hazards. Implementation of proposed policies and existing regulations and programs would substantially reduce hazards to people and property. **(Less Than Significant Impact)**

3.6.3.2 *Impacts from Naturally Occurring Asbestos*

Localized areas within the City of San José in Edenvale, Silver Creek, South San José, and Coyote Valley contain naturally occurring asbestos (refer to Figure 3.6-2). If disturbed, asbestos materials can pose health risks.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts from Naturally Occurring Asbestos

The proposed *Envision San José 2040 General Plan* includes updated hazards policies that address geologic and seismic hazards. Revisions to existing policies cite new requirements for disturbance of areas with naturally occurring asbestos adopted or approved subsequent to adoption of the City's 2020 General Plan. Proposed General Plan Policies and Actions that provide program-level mitigation for local naturally occurring asbestos hazards within the City are identified below.

Emergency Management	
Policy ES-4.9	Permit development only in those areas where potential danger to the health, safety, and welfare of persons in that area can be mitigated to an acceptable level.
Geologic and Soil Hazards	
Policy EC-4.6	Development proposed in areas with soils containing naturally occurring asbestos (i.e., serpentinite) that would require ground disturbance and/or development of new residential or other sensitive uses, will be evaluated for risks to people from airborne asbestos particles during construction and post-construction periods. Hazards shall be assessed, at minimum, using guidelines and regulations of the Bay Area Air Quality Management District and the California Air Resources Board.
Action EC-4.13	Use published maps and site specific geotechnical reports to identify possible areas of naturally occurring asbestos within the City of San José's Urban Growth Boundary for use in evaluating proposed development.

Existing Regulations and Adopted Plans and Policies

Existing state and regional regulations of the California Air Resources Board and Bay Area Air Quality Management District that would reduce or avoid possible impacts from naturally occurring asbestos include:

- Asbestos Airborne Toxic Control Measure [for naturally occurring asbestos]

Impact GEO-2: New development and redevelopment allowed in localized areas of Edenvale, Silver Creek, South San José, and Coyote Valley could result in disturbance of naturally occurring asbestos during grading or clearing activities. Implementation of proposed policies and existing regulations and adopted plans and policies would substantially reduce hazards to people from naturally occurring asbestos. **(Less Than Significant Impact)**

3.6.3.3 *Erosion Impacts*

Grading and ground disturbance increases the potential for accelerated erosion by removing protective vegetation or cover and changing natural drainage patterns. For future development or roadway projects over one acre in size, erosion hazards would be minimized through implementation of site-specific erosion measures in SWPPPs under the NPDES General Construction Permit and grading and excavation requirements in the City's Municipal Code. Given that many future development projects would be on properties less than one acre, requirements for BMPs under the City's NPDES Municipal Permit, urban runoff policies, and the Municipal Code would be the primary means of enforcing erosion control measures through the grading and building permit process. With the regulatory programs currently in place, the possible impacts of accelerated erosion during construction and associated with development and redevelopment would be less than significant.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Erosion Hazard Impacts

The proposed *Envision San José 2040 General Plan* includes updated hazards policies that address geologic and seismic hazards, including erosion. Proposed General Plan Policies and Actions that provide program-level mitigation for erosion hazards within the City are identified below.

Geologic and Soil Hazards	
Policy EC-4.1	All new or remodeled habitable structures shall be designed and built in accordance with the most recent California Building Code and municipal code requirements as amended and adopted by the City of San José, including provisions for expansive soil, and grading and storm water controls.
Policy EC-4.4	All new development shall conform to the City of San José's Geologic Hazard Ordinance.
Policy EC-4.5	Ensure that any development activity that requires grading does not impact adjacent properties, local creeks and storm drainage systems by designing and building the site to drain properly and minimize erosion. An Erosion Control Plan is required for all private development projects that have a soil disturbance of one acre or more, are adjacent to a creek/river, and/or are located in hillside areas.

Geologic and Soil Hazards	
	Erosion Control Plans are also required for any grading occurring between October 15 and April 15.
Action EC-4.12	Require review and approval of grading plans and erosion control plans (if applicable) prior to issuance of a grading permit by the Director of Public Works.
Hillside Development Hazard Avoidance	
Policy LU-18.7	Require erosion control measures in conjunction with proposed development on hillside areas susceptible to erosion consistent with the City of San José's Geologic Hazard Ordinance.

Existing Regulations and Adopted Plans and Policies

Existing state and local regulations that would reduce or avoid possible geologic and seismic impacts associated with erosion and sedimentation include:

- NPDES General Construction Permit
- NPDES Municipal Permit
- City of San José Municipal Code, Chapter 17.10
- City of San José Urban Runoff Policy 6-29
- City of San José Hydromodification Policy 8-14

Impact GEO-3: New development and redevelopment under the proposed General Plan would expose disturbed areas to wind and stormwater during construction and post-construction periods. Implementation of proposed General Plan policies and existing regulations and adopted plans and policies would minimize erosion and sedimentation hazards. **(Less Than Significant Impact)**

3.6.3.4 *Impacts to Mineral Resources (Communications Hill)*

The current San José 2020 General Plan notes the designation by the State Mining and Geology Board of the Communications Hill area as containing mineral deposits which are of regional significance as a source of construction aggregate materials. The General Plan also includes a goal of conserving and making prudent use of economically usable extractive resources and several policies regarding economically usable extractive resources.

The Communications Hill Specific Plan area has been designated for primarily urban uses since 1992 and subsequent development on Communications Hill under the Specific Plan and in adjacent areas limit access to the undeveloped hillsides. Impacts to mineral resources were identified as a significant unavoidable impact at the time the Communications Hill Specific Plan was approved and implementation of the proposed General Plan would not increase this previously identified significant impact. There are no actively operating quarries remaining within the City's Urban Growth Boundary and the Azevedo Quarry in unincorporated Santa Clara County on the east side of Communications Hill has completed harvesting rock materials. Under the proposed General Plan, land use designations in the SMARA-designated area of Communications Hill and extractive resources policies would remain unchanged.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Mineral Resources

The proposed *Envision San José 2040 General Plan* includes extractive resources policies that address the conservation and development of mineral deposits and the regulation of quarries. General Plan Policies and Actions that provide program-level mitigation for possible impacts to identified extractive resources within the City are identified below.

Extractive Resources	
Policy ER-12.1	When urban development is proposed on lands which have been identified as containing commercially usable extractive resources, consider the value of those resources.
Policy ER-12.2	Encourage the conservation and development of SMARA-designated mineral deposits wherever economically feasible.
Policy ER-12.3	When making land use decisions involving areas which have a SMARA designation of regional significance, balance mineral values against alternative land uses and consider the importance of these minerals to their market region as a whole and not just their importance to San José.
Policy ER-12.4	Carefully regulate the quarrying of commercially usable resources, including sand and gravel, to mitigate potential environmental effects such as dust, noise and erosion.

Impact GEO-4: New development and redevelopment under the proposed General Plan could occur within an area designated by the State of California as a mineral resource of regional importance. Impacts to mineral resources in the Communications Hill Specific Plan area were previously identified as significant and unavoidable in the 1992 Final EIR for the Specific Plan and there currently are no quarries actively mining in the area. Policies regarding mineral resources and land use designations in a state designated mineral resource area on Communications Hill would remain the same under the proposed General Plan. **(Less Than Significant Impact)**

3.6.3.5 *Seismic Hazards*

Fault Rupture

As previously described, fault rupture refers to fissuring and offset of the ground surface along a rupturing fault during an earthquake. Ground rupture typically results in a relatively small percentage of the total damage in an earthquake, but being too close to a rupturing fault can cause severe damage to structures.

As shown on Figure 3.6-1, known faults are present in the eastern and southern foothills and are mapped as Alquist-Priolo Earthquake Fault Zones. Faults extend through portions of the North Coyote Employment Land Area and the Evergreen Specific Plan Area. In these areas, development setbacks from faults are required under both the Alquist-Priolo Earthquake Fault Zoning Act and City of San José Geologic Hazard regulations in the Municipal Code.

Other faults that extend through the City, including the Shannon, Berryessa, Crosley, Clayton, Quimby, and Evergreen Faults, are considered potentially active. Under the City's existing Municipal Code, evaluation of potential fault hazards is required by the City Geologist for bedrock/hillside sites. In the case of the Shannon fault within the North Coyote Valley Employment Lands, surface fault rupture evaluations including geophysical investigation and exploratory trenching should be performed to delineate the extent of the fault and determine the fault rupture hazard potential when development is proposed in this area.

Ground Shaking

The City of San José and the entire South Bay is within one of the most seismically active areas in the United States. For the period 2002 to 2031, the probability of a magnitude 6.7 or greater earthquake occurring in the San Francisco Bay region is 62 percent. Development and redevelopment allowed within the city under the proposed General Plan, therefore, is likely to be exposed to strong ground shaking within the useful lifetime of new development.

Earthquake damage from ground shaking is determined by several factors: the magnitude of an earthquake, depth of focus, distance from the fault, intensity and duration of shaking, local ground water and soil conditions, presence of hillsides, structural design and the quality of workmanship and materials used in construction. Development on artificial fill materials and landfilled materials are subject to amplified seismic ground shaking, which can increase damage to infrastructure, buildings, and pavements.

Because the city is in relatively close proximity to several major fault zones, the California Building Code, as adopted by the City of San José, requires that seismic design features be incorporated in construction and redevelopment projects in San José. The primary purpose of the seismic design requirements of the building code is to avoid loss of life.

Liquefaction and Other Ground Failures

As previously discussed in Section 3.6.1.2, liquefaction is a process that causes various types of ground failure. It typically occurs in loose, saturated sediments primarily of sandy composition associated with seismic events. Recent studies have shown that low plasticity silts and clays may also be susceptible to liquefaction and/or cyclic mobility. Liquefaction can cause structural distress or failure due to ground settlement, a loss of bearing capacity in the foundation soils, and the buoyant rise of buried structures. The excess hydrostatic pressure generated by ground shaking can result in the formation of sand boils or mud spouts, and/or seepage of water through ground cracks. Liquefaction-induced lateral spreading can also occur on slopes, such as creeks.

Under the Seismic Hazard Mapping Program, substantial areas of San José are considered susceptible to liquefaction hazards (refer to Figure 3.6-1). Development and redevelopment allowed under the proposed General Plan would occur within these areas. In addition, there are areas near creeks, such as in Evergreen, North San José, and Willow Glen, where lateral spreading could occur (refer to Appendix F). Future projects approved under the General Plan are required under the Seismic Hazard Mapping Program and building code and Municipal Code requirements to evaluate site-specific liquefaction and ground failure hazards and mitigate those hazards to an acceptable level.

Seismically-Induced Settlement

Seismically induced settlement typically occurs in loose granular, cohesionless soils, and can occur in either wet or dry conditions. Unconsolidated young alluvial deposits and artificial fills, including former landfills, may also experience seismically induced settlement.

Development and redevelopment allowed under the proposed General Plan could be subject to structural damage from seismically induced settlement. Future projects approved under the General Plan are required under the California Building Code to evaluate site-specific soil conditions, including those that could result in seismically-induced settlement. Over-excavation and re-compaction is a commonly used method to mitigate soil conditions susceptible to settlement.

Earthquake-Induced Landslides

Strong ground motions can worsen existing unstable slope conditions, particularly when soil and rock materials are saturated. Seismically induced landslides can overrun structures, people or property, sever utility lines, and block roads, thereby hindering rescue operations after an earthquake. In general, slopes steeper than approximately 15 degrees are most susceptible; however, failures can occur on flatter slopes if unsupported weak rock units are exposed in the slope face. The artificial fill materials in former landfills also are subject to seismically induced slope failures.

Development and redevelopment areas under the proposed General Plan that could be susceptible to damage from earthquake-induced landslides are found in the Evergreen Specific Plan Area, Silver Creek Specific Plan Area, Evergreen Campus Industrial Employment Land Area, North Coyote Valley Employment Land Area, Old Edenvale Employment Land Area, and New Edenvale Employment Land Area. In accordance with the Seismic Hazard Mapping Act, all development projects within a State-delineated Seismic Hazard Zone for seismically induced landsliding must be evaluated and reviewed by State licensed engineering geologists and/or civil engineers prior to development. Evaluation and mitigation is also required by the City of San José under geologic hazard regulations in the Municipal Code.

Seismically-Induced Waves

As discussed in Section 3.6.1.2, only the northernmost extent of San José's Sphere of Influence adjacent to San Francisco Bay and Guadalupe and Alviso sloughs (i.e., not within the City's Urban Service Area) are presently within a tsunami run-up area of San Francisco Bay. Development and redevelopment within the City's Urban Service Area anticipated under the proposed General Plan would not be exposed to substantial risks associated with tsunamis.

Locally, seiches due to seismic shaking could occur in shallow lakes, reservoirs, or percolation ponds in San José. Lakes and reservoirs within the City's Urban Growth Boundary or Sphere of Influence include Lake Almaden, Lake Cunningham, Calero Reservoir, and Guadalupe Reservoir. Sloshing of water out of a lake or basin onto the surrounding area could result in water damage, erosion and some slope failure.

Development and redevelopment allowed under the proposed General Plan generally would not occur close enough to enclosed water bodies for seiches to have substantial effects. The potential for loss of life from this hazard is low.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Seismic Hazards Impacts

The proposed *Envision San José 2040 General Plan* includes updated hazards policies that address geologic and seismic hazards. Revisions to existing policies clarify that geologic and seismic hazards reduction measures are required as a part of the City's development review process and cite the Seismic Hazards Mapping Act approved subsequent to adoption of the City's 2020 General Plan. Proposed General Plan Policies and Actions that provide program-level mitigation for seismicity hazards within the City are identified below.

Emergency Management	
Policy ES-4.9	Permit development only in those areas where potential danger to the health, safety, and welfare of the persons in that area can be mitigated to an acceptable level.
Policy ES-4.10	Update, as necessary, the San José Building Code, Fire Prevention Code and Municipal Code to address geologic, fire, flooding and other hazards, and to respond to changes in applicable State Codes.
Seismic Hazards	
Policy EC-3.1	All new or remodeled habitable structures shall be designed in accordance with the most recent California Building Code and California Fire Code as amended locally and adopted by the City of San José, including provisions regarding lateral forces.
Policy EC-3.2	Within seismic hazard zones identified under the Alquist-Priolo Fault Zoning Act, California Seismic Hazards Mapping Act and/or by the City of San José, geotechnical and geological investigations will be completed and development proposals approved only when the severity of seismic hazards have been evaluated and appropriate mitigation measures are provided as reviewed and approved by the City of San José Geologist. State guidelines for evaluating and mitigating seismic hazards and the City-adopted California Building Code will be followed.
Policy EC-3.3	The City of San José Building Official shall require conformance with state law regarding seismically vulnerable unreinforced masonry structures within the City.
Policy EC-3.4	The City of San José will maintain up-to-date seismic hazard maps with assistance from the California Geological Survey (or other state agencies) under the Alquist-Priolo Earthquake Fault Zoning Act and the California Seismic Hazards Mapping Act.
Policy EC-3.5	Locate, design and construct vital public utilities, communication infrastructure, and transportation facilities in a manner that maximizes risk reduction and functionality during and after an earthquake.
Policy EC-3.6	Development in close proximity to water retention levees or dams will be restricted unless it is demonstrated that such facilities will be stable and remain intact during and following an earthquake.
Action EC-3.8	Maintain and update Citywide seismic hazard maps for planning purposes on an on-going basis.
Action EC-3.9	Revise and update provisions of the City of San José Geologic Hazard Ordinance, including geologic hazard zones, as new information becomes available from state

	and federal agencies on faults, earthquake induced landsliding, liquefaction, and/or lateral spreading.
Action EC-3.10	Require that a Certificate of Geologic Hazard Clearance be issued by the Director of Public Works prior to issuance of grading and building permits within defined geologic hazard zones related to seismic hazards.
Action EC-3.11	Make information available to residents and businesses on ways to reduce seismic hazards and emergency preparedness for an earthquake in conjunction with regional, state and federal agencies such as the Association of Bay Area Governments (ABAG) and the United States Geological Survey (USGS).
Hillside Development Hazard Avoidance	
Policy LU-18.3	Require soils and geologic review of hillside development proposals to assess such potential hazards as seismic hazards, surface ruptures, liquefaction, landsliding, mudsliding, erosion and sedimentation in order to determine if these hazards are present and can be adequately mitigated. Use geotechnical studies of hillside development proposals to determine the full extent of seismic and other hazards, the optimum locations for structures, roads, and utilities, the advisability of special structural requirements and amenities such as swimming pools or ponds, and the feasibility and desirability of a proposed structure and/or irrigated landscaping in a specified location.
Policy LU-18.6	Avoid locating public improvements, communication facilities, and utilities in hillside areas with identified soils and/or geologic hazards to limit any extraordinary maintenance and operating expenses. When the location of public improvements, communication facilities, and utilities in such areas cannot be avoided, implement effective mitigation measures to maximize their potential to remain functional during and after a seismic event.

Existing Regulations and Adopted Plans and Policies

Existing state regulations that would reduce or avoid adverse seismic impacts include:

- Alquist-Priolo [Fault Rupture Zones]
- Seismic Hazard Mapping Act [Seismic Hazard Zones]
- California Building Code, as amended [safety standards for the design and construction of buildings under static and dynamic (seismic) conditions]

Impact GEO-5: New development and redevelopment allowed under the proposed General Plan would occur in areas subject to seismic hazards including strong ground shaking, liquefaction and other seismically-induced ground failure. Localized areas within the Urban Service Area also are subject to fault rupture, earthquake-induced landslides or seismically-induced waves. Implementation of proposed General Plan policies and existing state and local regulations would substantially reduce seismic hazards to residents, workers, and visitors and structures. **(Less Than Significant Impact)**

3.6.3.6 *Impacts of Rancho del Pueblo and iStar Residential Options*

As discussed in Section 2.2.8 in the Project Description, this PEIR also evaluates options for residential land use designations and anticipated future development on two properties; the Rancho del Pueblo Golf Course in the Alum Rock Planning Area and the iStar property in the Edenvale Planning Area (Residential Option Sites). Under these options one or both of these properties would be designated for residential uses instead of the industrial uses assumed on the iStar property and the park/open space on the existing Rancho del Pueblo Golf Course. Because these options also include changes to other Growth Areas to balance the jobs and dwelling units, the overall amount of development capacity assumed under the Preferred Scenario would not change citywide.

A comparison and summary of geology and soils impacts for the residential options is shown in Table 3.6-1. Implementation of an updated General Plan that includes one or both of the residential options for the Rancho del Pueblo and iStar sites would have impacts similar to those from the proposed project.

Table 3.6-1
Geology and Soils Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
GEO-1	Soil and Landslide Hazards	Neither site is in a landslide hazard zone. Soil hazards that may be present could be reduced through proposed policies and existing regulations.	same (LTS)
GEO-2	Impacts from Naturally Occurring Asbestos	Neither site contains naturally occurring asbestos.	same (LTS)
GEO-3	Erosion Impacts	Both sites are located on the valley floor on flat to gently sloping sites. Erosion hazards during construction and post-construction periods could be reduced through proposed policies and existing regulations.	same (LTS)
GEO-4	Impacts to Mineral Resources	Neither site is within a designated mineral resource zone.	same (LTS)
GEO-5	Seismic Hazards	Seismic hazards on both sites would be similar to other lands on the valley floor.	same (LTS)

[1] S= Significant; LTS = Less Than Significant
The determination of significance assumes implementation of proposed General Plan policies and actions and existing regulations and adopted plans and policies previously identified throughout Section 3.6.3 Geology and Soils Impacts.
Bold = New Significant Impact

3.6.4 Geologic and Seismic Mitigation and Avoidance Measures for General Plan Impacts

3.6.4.1 *Proposed General Plan*

No mitigation is required.

3.6.4.2 *Rancho del Pueblo and iStar Residential Options*

No mitigation is required.

3.6.5 Significance Conclusions

3.6.5.1 *Proposed General Plan*

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions would result in less than significant soils, geology and seismicity impacts and no mitigation measures are required. **(Less Than Significant Impacts)**

3.6.5.2 *Rancho del Pueblo and iStar Residential Options*

Implementation of the proposed *Envision San José 2040 General Plan* with the Rancho del Pueblo and iStar Residential Options in accordance with proposed policies and actions would result in less than significant soils, geology and seismicity impacts and no mitigation measures are required. **(Less Than Significant Impacts)**

3.7 HYDROLOGY AND WATER QUALITY

The following discussion evaluates hydrological and water quality conditions and the environmental effects of implementation of the *Envision San José 2040 General Plan*. The analysis in this section is based in part on the following technical report:

- *Hydrology and Water Quality Report for San José California Envision San José 2040*, Schaaf & Wheeler, December 6, 2010.

A copy of the report is included in the Technical Appendices to this Draft PEIR (Appendix G).

3.7.1 Existing Setting

3.7.1.1 *Climate*

The City of San José is primarily situated on an alluvial plain within the Santa Clara Valley, which extends southward from the southern end of San Francisco Bay. Ground surface elevations within the City's Urban Growth Boundary (UGB) range from near sea level in the northwestern Alviso area, to near 90 feet above sea level in the downtown and at the airport, and more than 300 feet above mean sea level in the foothills at the city edge. The mountain ranges just outside of the city reach over 4,000 feet in elevation. Slopes vary from essentially flat (zero to two percent) on the valley floor with steeper slopes over 15 percent in foothill areas.

San José has a semi-arid, Mediterranean-type climate with warm, dry weather from late spring to early fall and cool, moist winters. Yearly precipitation varies across the City, based largely on topography. The mean annual precipitation is 14-15 inches Downtown, increasing to 22 inches in the foothills of eastern San José. The wettest month of the year is usually January, with an average rainfall of approximately three inches.

Annual rainfall in the City can vary due to weather altering events, such as El Niño or periodic drought. El Niño can produce a significant increase over normal rainfall and extend the duration of the wet season. In contrast, several droughts of five to seven years in duration have been documented in the San José area over the last 100 years.

Evapotranspiration is defined as the combination of evaporation and transpiration of water from the land's surface to the atmosphere.[91] Average annual evapotranspiration in San José is approximately 50 inches per year with potential water loss through evapotranspiration substantially higher than the mean annual precipitation.

[91] Evapotranspiration includes evaporation from the ground surface and from the capillary fringe of the groundwater table as well as transpiration of groundwater by plants from the roots and evaporation from the leaves.

3.7.1.2 *Surface Water Drainage*

Watersheds within the City of San José

A watershed is a land area from which water drains into a major body of water such as a stream, lake, wetland, bay or estuary, or percolates into groundwater. Local watersheds are parts of larger, regional basins. There are three principal watersheds within the San José Urban Growth Boundary: San Tomas, Guadalupe, and Coyote. The Calabazas Creek watershed also extends into northwestern San José. Each of these watersheds is made up of its main creek, from which the watershed derives its name, as well as many smaller tributaries, each with its own sub-watershed. Watershed elements include not only these tributaries but also dams, reservoirs, and groundwater recharge basins. A map of the three watersheds within the San José Urban Growth Boundary is shown in Figure 3.7-1. The watersheds in San José are part of the Santa Clara Basin, which is a sub-basin of the larger San Francisco Bay Basin.

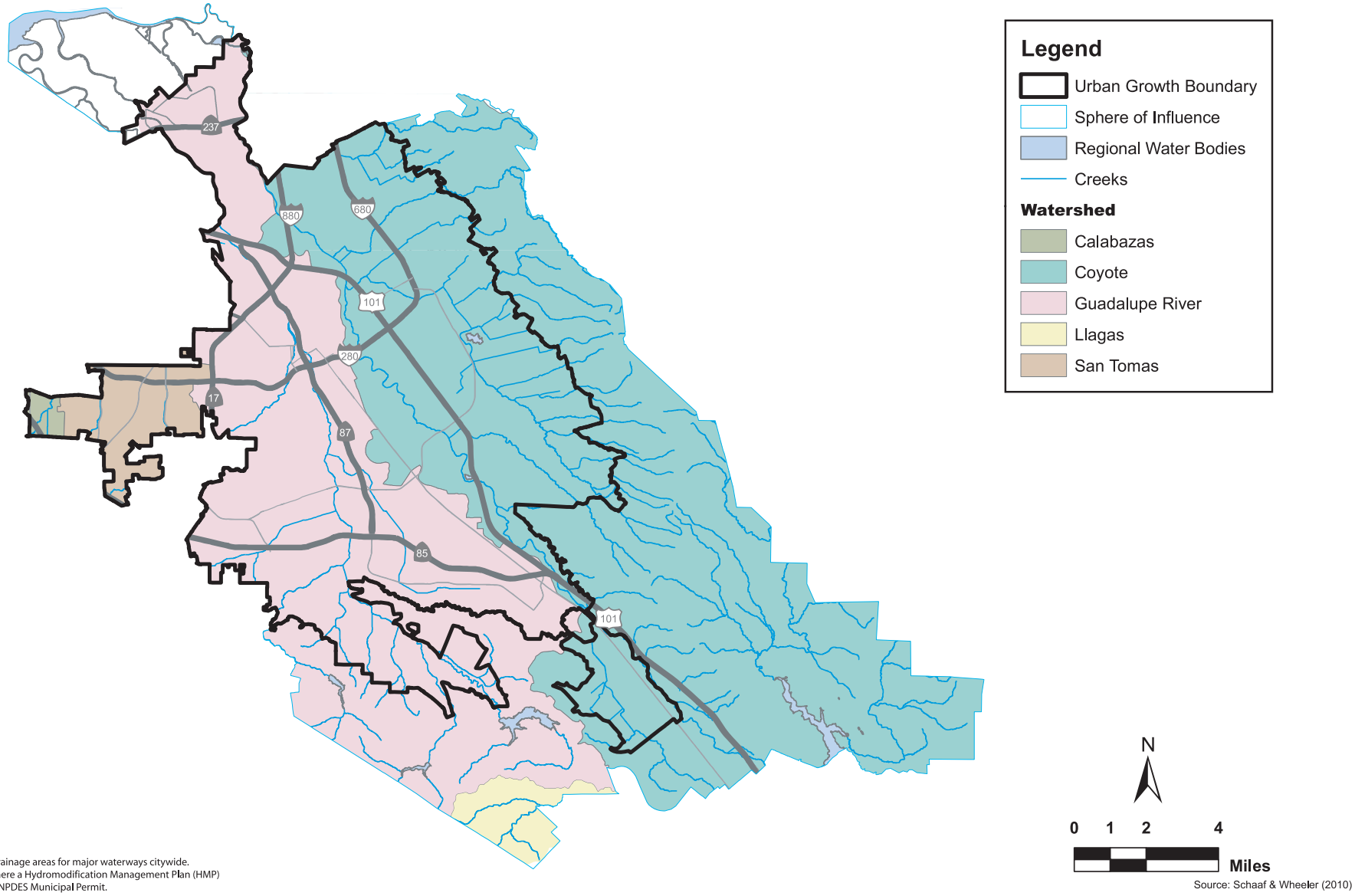
Surface Water Reservoirs

There are several surface water reservoirs that directly affect the watersheds and streams of San José. Anderson Reservoir (in the Coyote watershed) and the Almaden, Calero, Guadalupe and Vasona Reservoirs (in the Guadalupe watershed) store water used for groundwater recharge downstream of the reservoirs. Groundwater recharge is the use of water for natural or artificial recharge of groundwater for the purposes of future extraction, maintenance of water quality, or halting saltwater intrusion into freshwater aquifers, and to prevent subsidence. Nearly all of the reservoirs in the immediate vicinity of San José serve as municipal and domestic water supply for community, or individual water supply stems. Reservoirs in the Guadalupe River and Coyote Creek watersheds are listed in Table 3.7-1 and the locations of these reservoirs are shown in Figure 3.7-2.

Table 3.7-1
Reservoirs by Watershed

Reservoir	Stream Location	Year Constructed	Drainage Area (square miles)	Storage Capacity (acre-feet)
Guadalupe River Watershed				
Almaden Reservoir	Alamitos Creek	1935	12.0	1,586
Calero Reservoir	Arroyo Calero Creek	1935	6.9	10,050
Guadalupe Reservoir	Guadalupe Creek	1935	5.9	3,723
Lexington Reservoir	Los Gatos Creek	1952	37.5	19,834
Vasona Lake/Reservoir	Los Gatos Creek	1935	43.9	400
Williams Reservoir	Los Gatos Creek	unknown	--	157
Coyote Creek Watershed				
Anderson Reservoir	Coyote Creek	1950	192.7	89,073
Coyote Reservoir	Coyote Creek	1936	121.0	22,925
Cherry Flat Reservoir	Upper Penitencia Creek	1932	--	100

Source: Schaaf & Wheeler. *Hydrology and Water Quality Report for San José California Envision San José 2040.* December 6, 2010. (Appendix G)
Note: None of the reservoirs listed above are within the UGB. Calero Reservoir and part of Anderson Reservoir are within the City limits. The remaining reservoirs are located beyond the City's Sphere of Influence.

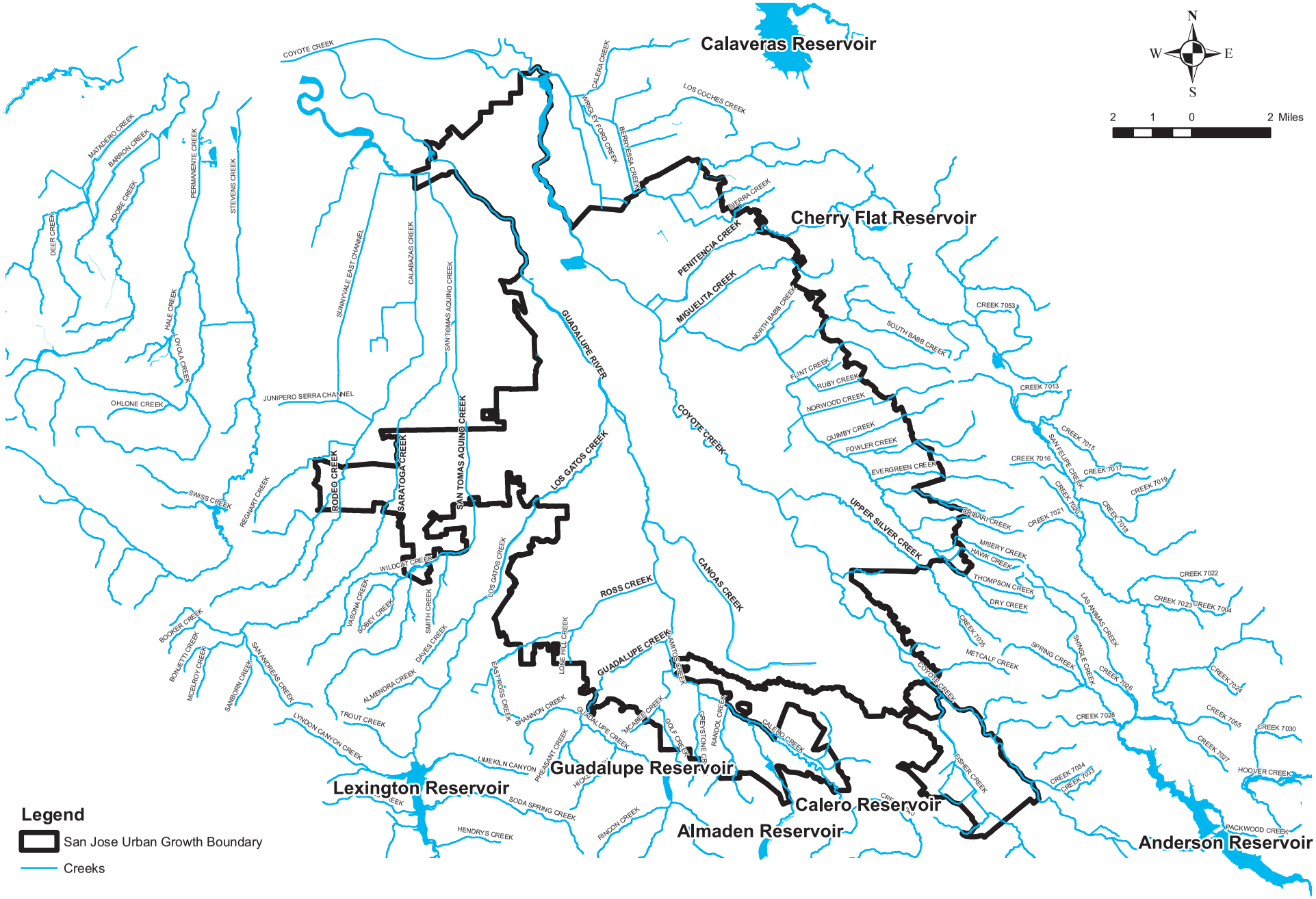


Note: This map shows watershed drainage areas for major waterways citywide.
It does not show subwatersheds where a Hydromodification Management Plan (HMP) would be required under the City's NPDES Municipal Permit.

Source: Schaaf & Wheeler (2010)

WATERSHEDS WITHIN THE CITY

FIGURE 3.7-1



RESERVOIRS AND CREEKS

FIGURE 3.7-2

Reservoirs also have an incidental flood management function. Floodwaters from the upland portions of their respective drainage basins may be held back by the reservoirs until high flows in the downstream creeks and channels have receded.

Stormwater and Urban Runoff

Stormwater is rainwater that flows across surfaces without being absorbed into soil. Urban runoff is stormwater that combines with irrigation runoff, and water from other sources in an urban setting. Hardscape (impervious) areas prevent water from being absorbed into the ground and causes stormwater to flow more quickly and in larger qualities into the storm drain system. As stormwater combines with runoff already in the system, it gathers additional volume, speed, force, and contaminants. As a result, when the urban runoff is eventually released into a creek, river or bay it can cause erosion, flooding and damage to wildlife habitat.

Stormwater runoff within the urbanized areas of the City is discharged into local storm drains, which, in turn, flow into local creeks and the Bay. The City of San José owns and maintains municipal storm drainage facilities throughout the City. Storm drain lines are inspected and maintained by the Department of Transportation and are installed, rehabilitated, or replaced by the Department of Public Works.

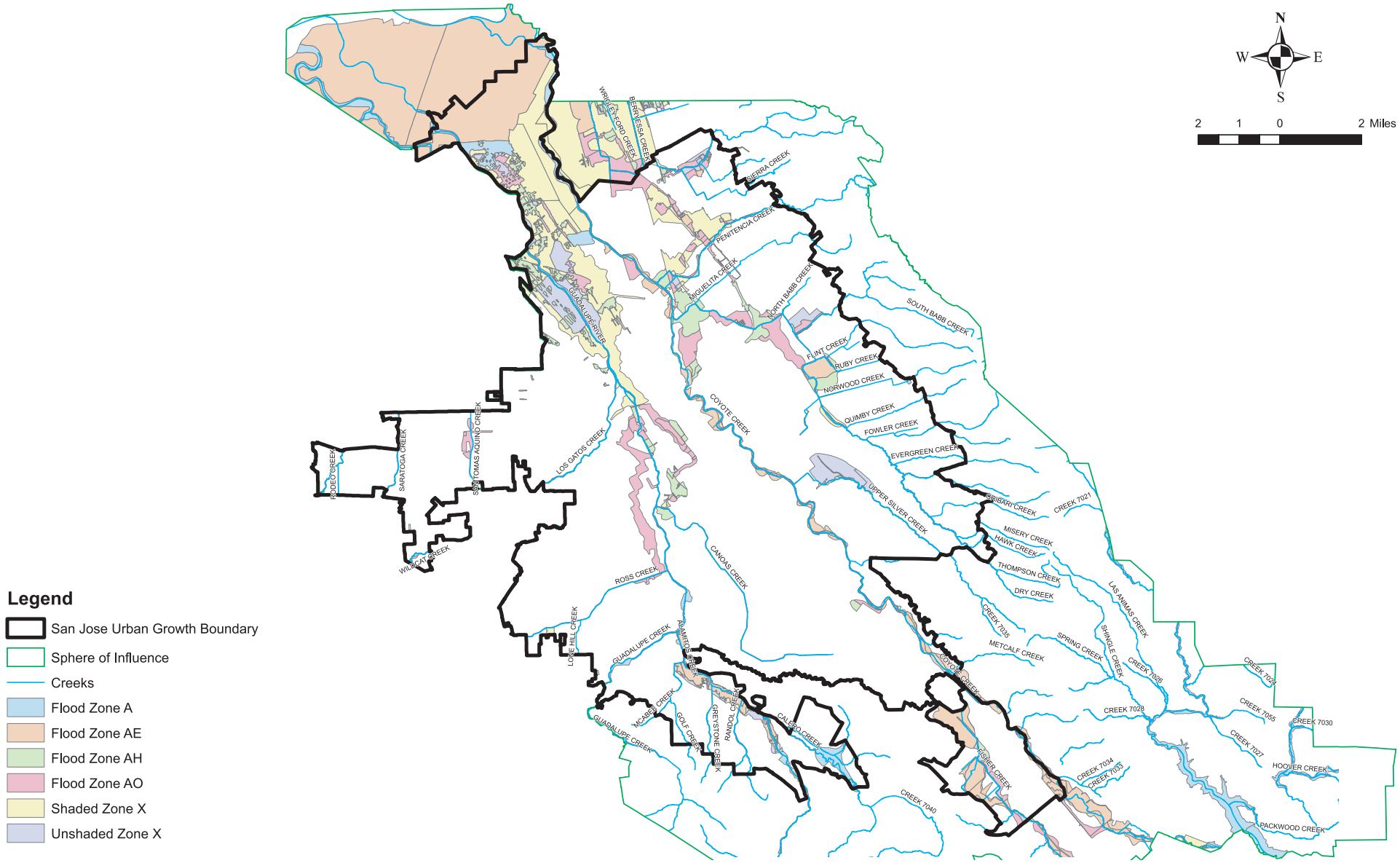
Flooding and Flood Management

The Santa Clara Valley Water District (SCVWD) is responsible for providing flood protection to residences and businesses in the County from floods equal to or less than the "one percent flood." The one percent flood, also referred to as the "100-year flood" or the "base flood," is the flow of water that has a one percent chance of being equaled or exceeded in any given year. This level of risk, however, should not be confused with a flood that *will* occur once every 100 years, but one that might occur once every 100 years or so, *on average,* over a very long period of time.

Areas subject to the one percent flood are designated as Zone AE, A, AH, or AO on the Federal Emergency Management Agency (FEMA) flood maps. Figure 3.7-3 shows the floodplain designations within the City's Urban Growth Boundary. Figure 3.7-4 shows the regulatory floodways in or near San José designated by FEMA. Regulatory floodways are channels of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the one percent flood without cumulatively increasing the water surface elevation more than a designated height.

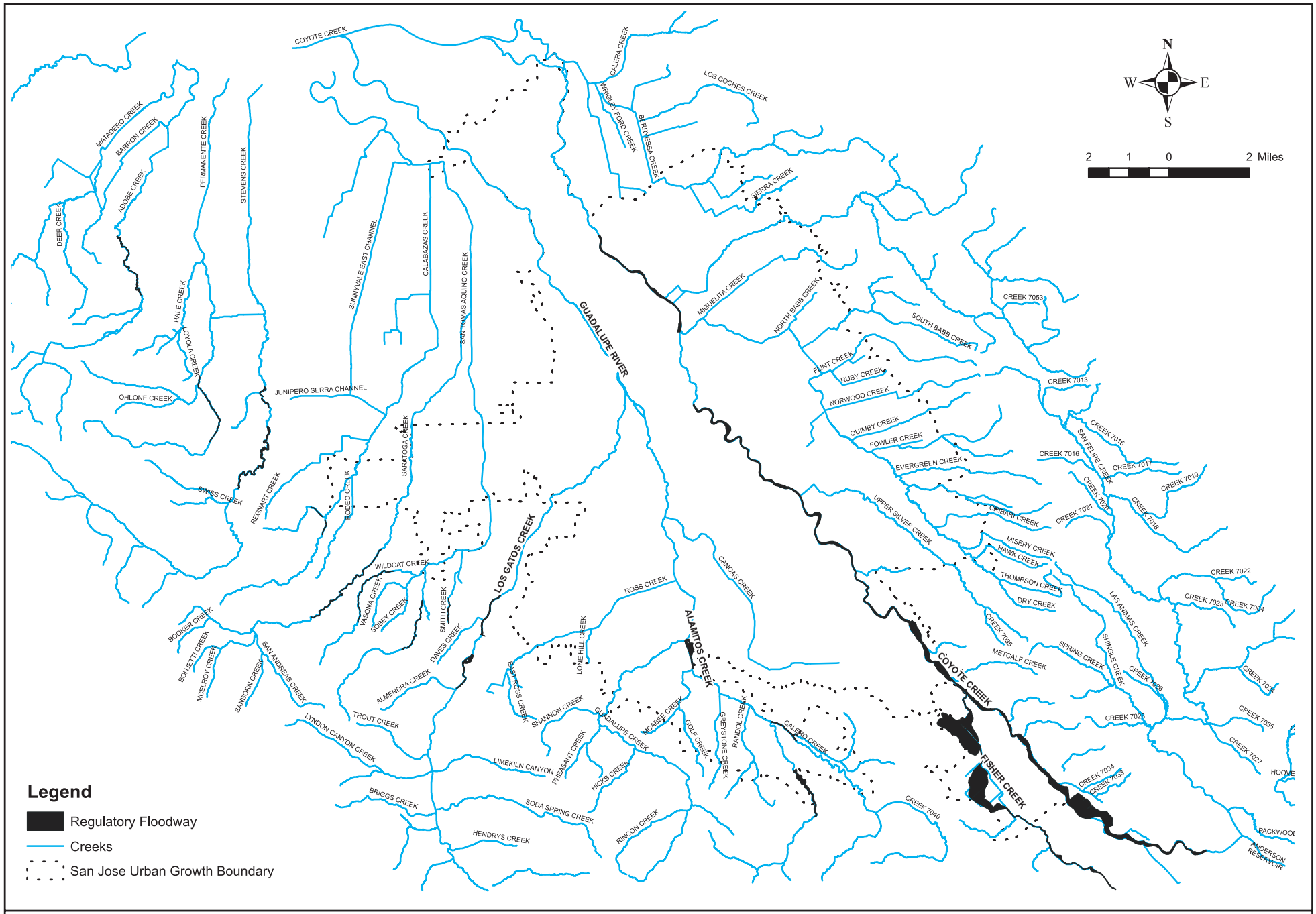
The SCVWD has a flood management plan that involves an ongoing review of flood protection needs on all creeks in Santa Clara Valley. A number of flood protection projects are being considered, including projects on the eastside tributaries of Coyote Creek (Berryessa, Upper Penitencia, and Lower Silver Creeks) and on the middle reaches of the Guadalupe River. The SCVWD also maintains its flood control channels to ensure that the capacity of the channels is not substantially reduced by accumulated debris or excessive growth of vegetation.

Portions of the Alviso Master Plan area are within areas designated by FEMA as subject to tidal flooding.



CREEKS AND SPECIAL FLOOD ZONES

FIGURE 3.7-3



REGULATORY FLOODWAYS

FIGURE 3.7-4

Tidally Influenced Areas

The San José Urban Growth Boundary includes the Alviso Planning Area, which is adjacent to the marshes of San Francisco Bay; and as such, both the land and its drainage facilities are affected by water levels in the Bay and adjacent marshes. All of the creeks that pass through the City eventually discharge to the Bay, and their capacities and characteristics are also influenced by San Francisco Bay water levels.

Dam Failure

Dams whose failure could impact San José include Almaden, Anderson, Calero, Guadalupe, Cherry Flat, Lexington, and Elsman dams. Failure at two percolation facilities, Coyote Creek and Rinconada, could also affect local areas. Based on the Association of Bay Area Governments (ABAG) Dam Failure Inundation Maps, much of San José has the potential to be inundated if an upstream reservoir fails. Dam failure inundation areas in San José for each reservoir should an upstream reservoir fail are shown on Figure 3.7-5.

All of the dams potentially affecting San José fall under the jurisdiction of the California Division of Safety of Dams (DSOD) and some also fall under Federal Energy Regulatory Commission (FERC) jurisdiction. DSOD inspects each dam on an annual basis to ensure the dam is safe, performing as intended, and not developing problems. All of the upstream dams are classified as high hazard dams, because their failure would result in a significant loss of life and property damage.

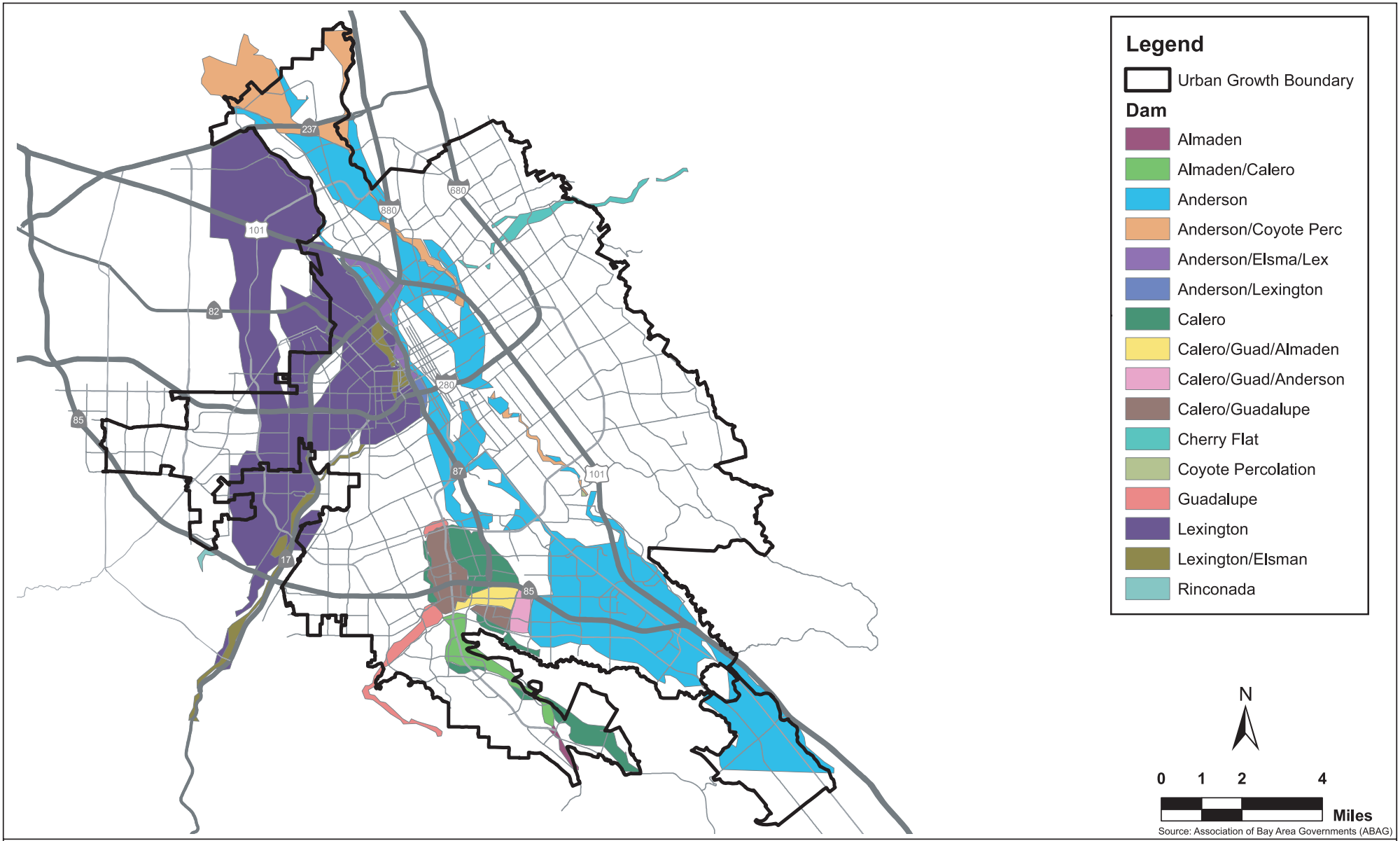
As part of its comprehensive dam safety program, the SCVWD routinely monitors and studies the condition of each of its 10 dams.

3.7.1.3 *Groundwater Conditions*

Groundwater is an important source of water. The Santa Clara Valley Groundwater Basin is the source for all groundwater in the County, and is divided into three sub-basins: the Santa Clara Valley, Coyote Valley, and Llagas Sub-basins. The Santa Clara Valley and Coyote Valley Sub-basins underlie San José. Groundwater levels respond to changes in the balance between groundwater recharge[92] and withdrawal,[93] and indicate the relative amount of water stored in an aquifer at a given point in time. The SCVWD operates and maintains 18 major groundwater recharge facilities in the Santa Clara Valley and diverts water from local reservoirs and imported water to in-stream and off-stream percolation areas.[94]

When groundwater levels decline, clay layers, previously saturated, are exposed and at risk of dewatering. As these clay layers dewater they compress, and do not expand when re-wetted.

[92] Groundwater recharge refers to the water gains within a groundwater basin. Water can be gained from direct surface water recharge (natural and artificial), deep percolation of precipitation, septic system discharges to groundwater, and deep percolation of irrigation return water.
[93] Groundwater withdrawal refers to the water uses or losses within the groundwater basin. Groundwater withdrawal can occur from direct groundwater extractions (i.e., pumping), subsurface outflow to another groundwater basin, discharges to surface water, direct consumption by plants, and direct evaporation of surface water.
[94] Santa Clara Valley Water District. "Groundwater Supply". Accessed August 30, 2010. <http://www.valleywater.org/Services/GroundwaterSupply.aspx>



DAM FAILURE INUNDATION AREAS

FIGURE 3.7-5

This compression causes land subsidence. The lowest groundwater elevations in the Santa Clara Valley Basin were recorded in about 1964. Since that time, imports from state and federal water supplies both decreased groundwater extraction and increased groundwater recharge with the result that groundwater levels have generally risen. Within a few years of these changes, additional land subsidence had virtually stopped.

Rising groundwater has other impacts. The Santa Clara Sub-basin is made up of two parts, a confined sub-basin and unconfined sub-basin. A confined aquifer is one sandwiched between two impermeable layers that restrict the flow of groundwater upward.[95] An unconfined aquifer is one where the water-table marks its upper limit (i.e., an unconfined aquifer does not have a confining layer between it and the ground surface). The northern, confined sub-basin is made up of an upper layer (Zone A) which is separated from the lower layer (Zone B) by an impermeable clay layer. In several locations within the City of San José, breaching of this layer has required ongoing, full time pumping to avoid flooding of roads or buildings from groundwater which is pressure released from Zone B. Shallow nuisance groundwater is also occurring even where the confining layer has not been breached due to rising levels of water in the perched Zone A layer.

3.7.1.4 *Recycled Water*

Recycled water requires the treatment, management, and non-potable re-use of wastewater. Both the SCVWD and the San Francisco Public Utilities Commission have identified expanded use of recycled water as a water supply source to meet future demands. In the San José area, recycled water from the San José-Santa Clara Water Pollution Control Plant is managed by the South Bay Water Recycling (SBWR) program. SBWR partner agencies include the City of San José, City of Milpitas, City of Santa Clara, West Valley Sanitation District, Burbank Sanitary District, Cupertino Sanitary District, Sunol Sanitary District, County Sanitation District No. 2-3, San Jose Water Company, Great Oaks Water Company, Santa Clara Valley Water District, and United States Bureau of Reclamation.

The SBWR system includes over 100 miles of recycled water pipelines in San José, Santa Clara and Milpitas. During the summer months, an average of 15 million gallons (46 acre-feet) of recycled water is produced and distributed to over 550 customers per day. All recycled water in the SBWR is treated to a disinfected tertiary level before being delivered to customers. The San José/Santa Clara Water Pollution Control Plant (WPCP) is the primary provider of recycled water in the County, although three other wastewater treatment facilities outside the City of San José also produce recycled water.

One of the goals of the City of San José's Green Vision is to recycle or beneficially reuse 100 percent of San José's wastewater (100 million gallons per day). Expansions to the SBWR system are on-going and the SBWR program works with local water providers and industrial and recreational facilities to expand the use of recycled water in San José and adjacent communities.

3.7.1.5 *Surface Water Quality*

The water quality of streams, creeks, ponds, and other surface water bodies can be greatly affected by pollution carried in contaminated surface runoff. Pollutants from unidentified sources, known as "non-point" source pollutants, are washed from streets, construction sites, parking lots, and other exposed surfaces into storm drains. Surface water can be contaminated with mercury (also called

[95] An artesian aquifer is a confined aquifer containing groundwater that will flow upward through a well without the need for pumping. Water can reach the ground surface if the natural pressure in the contained aquifer is high.

quicksilver), bacteria and biological contaminants, and other pollutants. Historic mercury discharges to the Guadalupe River system and the San Francisco Bay have led to existing problems with mercury contamination of Bay Area sediments and aquatic life. Bacteria and other biological contaminants can be introduced to drinking water sources primarily at surface water creeks and reservoirs, particularly if they are near agricultural or wildlife-rich lands. Broken and leaking sanitary sewer system components and septic tanks can also contribute biological contaminants to both surface and ground water sources. In sufficient concentration, pollutants have been found to adversely affect the aquatic habitats to which they drain.

The Guadalupe River watershed has a number of hazardous waste sites that may contribute pollutants from either surface runoff from these sites or high groundwater flow through the contaminated soils of these sites. There are several reported releases of hazardous materials, mostly from leaking underground storage tanks, along the Guadalupe River through San José. There are also a number of sites that use, store, or could be a source of potentially hazardous, toxic, or radioactive materials that could contribute harmful pollutants to the Guadalupe River. These sites include roadway overpasses, auto repair shops, industrial facilities, and agricultural lands.

The San Francisco Bay Regional Water Quality Control Board (RWQCB) Basin Plan also lists several *Inactive Mine Sites* within the Guadalupe River and Coyote Creek watersheds. These sites have the potential to leach mercury or other harmful pollutants into storm drainage. Identified mercury mine sites include Hillsdale Mine near Oak Hill Cemetery and Communications Hill, Silver Creek Mine in the Diablo Range south of Evergreen, and various mines in what is now Almaden Quicksilver Park.

3.7.1.6 *Groundwater Quality*

Groundwater quality in Santa Clara County is generally good and groundwater is suitable for most urban and agricultural uses.[96] The SCVWD and local water suppliers monitor groundwater quality for a variety of parameters, including calcium, sodium, iron, nitrate, chloride, organic solvents, and gasoline additives (such as methyl-tert-butyl ether or MTBE) and look for concentrations above Maximum Contaminant Levels (MCLs) established by the U.S. EPA and State of California for drinking water. Nitrate in the Coyote Sub-basin and localized contamination from underground tank leaks are currently the primary groundwater contaminant concerns in the portion of the Santa Clara Valley groundwater basin below the City of San José.

3.7.1.7 *Climate Change and Water Resources*

Global climate change refers to changes in the Earth's weather including temperature, precipitation, and wind patterns. The world's leading climate scientists have reached consensus that global climate change is underway, is "very likely" caused by humans, and hotter temperatures and rises in sea level "would continue for centuries," no matter how much humans control future emissions. Based upon a review of various climate models, the Intergovernmental Panel on Climate Change (IPCC) reports that temperature increases by the year 2099 are likely to range from one to seven (1-7) degrees Fahrenheit, although other regional models for northern California estimate global temperature increases of up to nine (9) degrees Fahrenheit.[97] Increases in global temperatures in these ranges may

[96] California Department of Water Resources. *California's Groundwater Bulletin 118 Update 2003*. Available at: <http://www.water.ca.gov/groundwater/bulletin118/bulletin118update2003.cfm>

[97] Schaaf & Wheeler. *Climate Change Impacts for San Jose, California.* September 3, 2010. (Included in Appendix G of this EIR)

have multiple effects on the water resources of the City of San José, including sea level rise, increased flooding risk, and reduced or fluctuating water supplies. Rising sea levels may also create the potential for salt water intrusion into groundwater basins, including the Santa Clara Basin at the southern end of San Francisco Bay, although this could be off-set by changes in precipitation. Projected sea level rise and possible changes in flooding patterns are described below. Effects on water supplies are discussed in Section 3.10 Utilities and Service Systems.

Projected Sea Level Rise and Flooding

One effect of global climate change is sea level rise. Various studies predict that sea level will rise by 12-18 inches by 2050, as compared to 2000 levels, as a result of global climate change. Sea level rise is a concern for San José given the proximity of the Alviso area to San Francisco Bay and relatively low ground surface elevations (less than 10-15 feet above current mean sea level[98]) in this area of the Santa Clara Valley. Existing and projected mean sea level by 2050 and 2100 within the City's UGB are shown in Figure 3.7-6.

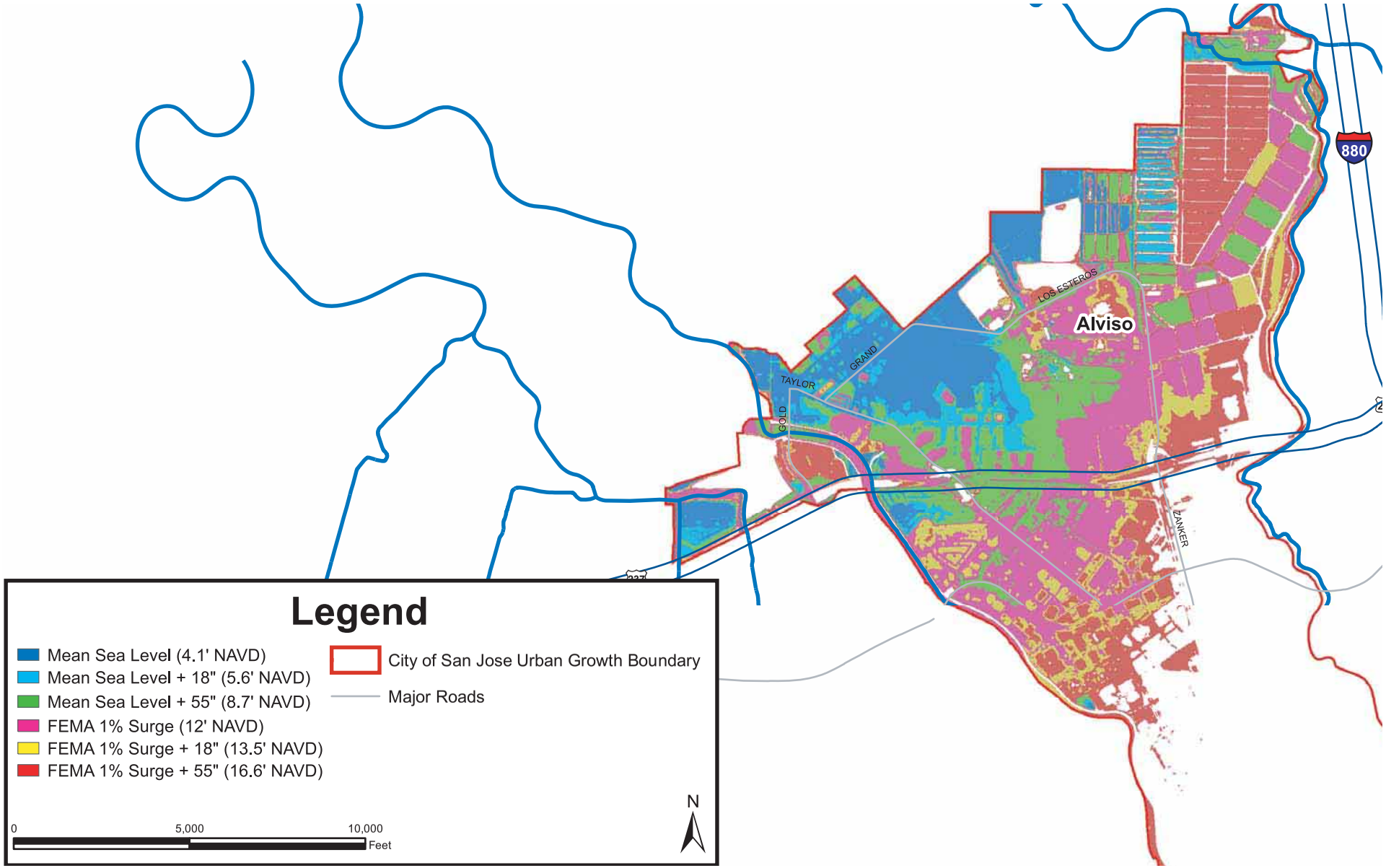
A primary concern with sea level rise in the South Bay is the likely increased pressure on existing levees and the potential for breaches. An 18-inch rise in sea level by 2050 would inundate the Alviso Village area if there was no tidal flood protection provided by levees. A 55-inch (approximately 4 ½ foot) rise in sea level by 2100 could extend the inundation zone to the vicinity of SR 237.

The increase in global mean sea level may have a range of impacts to developed areas of San José, particularly the Alviso area and in tidally influenced reaches of streams and creeks. For instance, discharge pipes, both for storm and treated wastewaters, will operate differently under higher average tide cycles. Inundation of, or a changing salinity profile within, adjacent marshes and sloughs could have environmental impacts and expose the Alviso area to additional flood risks from the Bay. Streams, creeks and rivers that flow to the Bay will also have higher water surface elevations for their respective downstream conditions, which may increase water levels throughout a river system during extreme events. Rising sea levels may affect the protection level for bay and riverine levee systems (such as Guadalupe River and Coyote Creek).

In addition to sea level rise, global warming may affect other flood related factors such as storm surge, wave height and run-up, and rainfall intensity. At this time, no consensus on quantitative estimates for these impacts exists within the scientific community.[99] Generally more intense but less frequent precipitation is predicted, with storm patterns shifting to earlier in the fall and winter months. More intense storms may cause increased storm surge and wave heights in the Bay, although how these conditions would impact San José is unknown since the relatively shallow marshes of the South Bay may dampen this potential impact. An approximation of the FEMA one percent storm surge added to projected Mean Sea Level is shown in Figure 3.7-6.

[98] Mean sea level (MSL) is a measure of the average height of the ocean's surface (such as the halfway point between the mean high tide and the mean low tide). MSL is often used as a standard in describing land elevation. Different benchmarks may be used in determining ground elevation, however. A currently used datum is the North American Vertical Datum of 1988 (NAVD). The projected ground surface elevations referred to on Figure 3.7-6 are expressed in NAVD. Refer to Appendix G for an explanation of the relationship between current local mean sea level and NAVD.

[99] Schaaf & Wheeler. *Climate Change Impacts for San Jose, California.* September 3, 2010. (Included in Appendix G of this EIR)



Source: Schaaf & Wheeler (2010)

PROJECTED SEA LEVEL RISE

FIGURE 3.7-6

3.7.1.8 *Regulatory Framework*

Numerous laws and regulations are in place that regulate the management of surface and groundwater quality. Federal, state and local laws and regulations also apply to flood plain management. A summary of key laws, regulations and policies is presented below but it should not be considered to be a complete list of all potentially applicable regulations.

Federal

National Flood Insurance Program

The FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations protecting development in floodplains. As part of the NFIP, FEMA publishes Flood Insurance Rate Maps (FIRMs) that identify flood hazard zones within a community.

Clean Water Act

The major federal legislation governing water quality is the Clean Water Act, as amended by the Water Quality Act of 1987. The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the Clean Water Act, the Environmental Protection Agency (EPA) has implemented pollution control programs such as setting wastewater standards and water quality standards for all contaminants in surface waters.

Three key regulatory programs are required by the Clean Water Act. Sections 303 and 304 of the Act call for the establishment of water quality standards, criteria, and guidelines, including for wastewater effluent. Activities that may result in discharges to Waters of the United States and that require a federal permit are regulated under Section 401 of the Act. Water Quality Certification by the state is required for activities such as placement of fill in wetlands or bodies of water.

Section 303(d) of the Clean Water Act requires that states develop a list of water bodies that do not meet water quality standards, establish priority rankings for waters on the list and develop action plans, called Total Maximum Daily Loads (TMDL), to improve water quality. The list of impaired water bodies is typically revised every two years. The Guadalupe River watershed is listed by the U.S. Environmental Protection Agency as an impaired water body for mercury and diazinon and Coyote Creek and Saratoga Creek are listed for diazinon. The State of California has instituted a water quality attainment strategy and TMDL for diazinon and pesticide-related toxicity in all urban creeks, even those not formally listed. The Draft 2008 303(d) Integrated Report proposes to list Lower San Francisco Bay, Guadalupe River, Coyote Creek, (Lower) Silver Creek, Saratoga Creek, and San Tomas Aquino Creek as "trash impaired." Almaden Lake and Almaden Reservoir are also proposed for listing due to mercury contamination in fish tissue and are included in the Guadalupe River Watershed Mercury TMDL.

National Pollutant Discharge Elimination System (NPDES) Permit Program

The U.S. EPA's regulations, as called for under Section 402 of the Clean Water Act, also include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into waters of the United States (e.g., streams, lakes, bays, etc.). These

regulations are implemented at the regional level by water quality control boards, which for the San José area is the San Francisco Bay RWQCB.

The RWQCB is responsible for protecting the quality of surface waters and groundwaters by issuing and enforcing compliance with the NPDES permits and by preparation and revision of the relevant Regional Water Quality Control Plan, also known as the Basin Plan.

The NPDES permit, though a federal program, is administered on the local level and will therefore be discussed under local regulations.

State of California

Porter-Cologne Act

The State of California's Porter-Cologne Water Quality Control Act provides the basis for water quality regulation within California and the Act assigns primary responsibility for the protection and enhancement of water quality to the State Water Resources Control Board (SWRCB) and the nine RWQCBs. These agencies are authorized to adopt regional water quality control plans, prescribe waste discharge requirements, and perform other functions concerning water quality control within their respective regions.

The San Francisco Bay RWQCB regulates water quality in the Bay Area in accordance with the Water Quality Control Plan or "Basin Plan," as mentioned previously. The Basin Plan lists the beneficial uses which the RWQCB has identified for local aquifers, streams, marshes, rivers, and the Bay, as well as the water quality objectives, and criteria that must be met to protect these uses. The RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements to control water quality and protect beneficial uses. These can include permits for "point sources" such as the WPCP or "non-point sources" such as the urban runoff discharged by a City's stormwater drainage system.

NPDES General Permit for Storm Discharges Associated with Construction and Land Disturbance Activities

The SWRCB has implemented a NPDES General Construction Permit for the State of California. Projects that would disturb more than one acre of land are required to submit a Notice of Intent and a Storm Water Pollution Prevention Plan (SWPPP) to the SWRCB to apply for coverage under the NPDES Construction and Land Disturbance General Permit. Construction activities subject to this permit include grading, clearing, or any activities that cause ground disturbance such as stockpiling or excavation. The SWPPP will include the site-specific best management practices (BMPs) to control erosion and sedimentation and maintain water quality during the construction phase. The SWPPP also contains a summary of the structural and non-structural BMPs to be implemented during the post-construction period.

Site owners must notify the state, prepare and implement the SWPPP and monitor the effectiveness of the plan. The plan, which must also address control of pollutants in stormwater post-construction, does not have to be submitted to the Regional Board but must be on site and available to inspectors.

Each discharger must certify annually that construction activities are in compliance with the requirements of the General Permit and the SWPPP. A Construction Compliance Status Report

Form must be completed and submitted to the RWQCB by July 1 of each year.[100] The current permit (Order No. 2009-0009-DWQ, NPDES No. CAS000002) became effective on July 1, 2010 and expires on September 2, 2014.

NPDES Industrial Discharge Permit(s)

To minimize the impact of stormwater discharges from industrial facilities, the NPDES program includes an industrial stormwater permitting component that covers 29 industrial sectors that require authorization under a NPDES industrial stormwater permit for stormwater discharges. Facilities requiring permit coverage include heavy manufacturing, landfills, metal scrap yards, wastewater treatment works, airports, food processors, public warehousing and storage, and light manufacturing such as printers.

The NPDES Industrial Discharge permit requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). The NPDES Industrial Discharge permit also requires the development of a SWPPP and a monitoring plan.

California Fish and Game Code – Lake and Streambed Alteration

The California Department of Fish and Game (CDFG) is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the Fish and Game Code (Section 1602) requires an entity to notify CDFG of any proposed activity that may substantially modify a river, stream, or lake. If CDFG determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared.

Dam Safety

The California Department of Water Resources (DWR), Division of Safety of Dams is responsible for regular inspection of dams in California. Much of San José is in a dam failure inundation zone (refer to Figure 3.7-5). It is the responsibility of DWR and local agencies to minimize the risk of dam failure. Dams regulated by DWR are identified in California Water Code Sections 6002, 6003, and 6004 and regulations for dams and reservoirs are included in the California Code of Regulations.

California Climate Adaptation Strategy

The *2009 California Climate Adaptation Strategy*, is a multi-sector strategy designed to help guide California's efforts in adapting to climate change impacts. It was developed per a November 2008 Executive Order (S-13-08) by the Governor with input from multiple state agencies. The purpose of the 2009 Strategy is to identify the best known science on climate change impacts in seven specific sectors and make recommendations on how to manage those effects.[101] The 2009 publication is designated as the first iteration of the State's adaptation strategy.

---

[100] San Francisco Regional Water Quality Control Board. "Storm Water Programs and Permits". Accessed December 7, 2010. http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater.shtml#construction.

[101] California Natural Resources Agency. *2009 California Climate Adaptation Strategy*. Available at: <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

The seven sectors included in the report include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The contents of the strategy were developed to address how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. A key recommendation in the Strategy is that State agencies should generally not plan, develop, or build any new significant structure in a place where that structure will require significant protection from sea level rise, storm surges, or coastal erosion during the expected life of the structure. However, the Strategy recognizes that vulnerable shoreline areas containing existing development that have regionally significant economic, cultural, or social value may have to be protected, and infill development in these areas may be accommodated. The Strategy also recommends that California change its water management and uses because climate change will likely create greater competition for limited water supplies. This recommendation related to water resources cites water legislation that calls for achieving a statewide 20 percent reduction in per capita water use by 2020, the need to expand surface and groundwater storage, efforts to fix Delta water supply, quality, and ecosystem conditions, support for increased agricultural water use efficiency, improvement of state-wide water quality, and the stability of water supplies as important components of adaptation to limited water supplies.

Subsequent to preparation of the 2009 Climate Adaption Strategy, the State of California developed an interim guidance document for incorporating sea level rise projections into planning and decision making for projects in California.[102] Consideration of the timeframe for a project, its adaptive capacity (*e.g.,* its ability to respond to climate change and cope with consequences), and the risk that harmful impacts will occur during the lifetime of a development are concepts included in the guidance. Updates to the guidance in 2011 and 2012 are anticipated to include hourly sea-level projections for San Francisco and a report from the National Academy of Sciences Expert Panel on West Coast sea level rise.

<u>San Francisco Bay Conservation and Development Commission Permit Program</u>

The San Francisco Bay Conservation and Development District (BCDC) is a state agency created in 1965 to regulate development in the Bay and along its shoreline for the purpose of limiting and controlling the amount of fill placed in the Bay. It is necessary to obtain a BCDC permit prior to undertaking most work in the Bay or within 100 feet of the shoreline, including filling, dredging, shoreline development and other work. There are several different types of permit applications, depending on the size, location, and impacts of a project.

In response to climate change and the challenges that it will present to the Bay Area, BCDC developed a Climate Change Planning Program to focus on developing strategies to reduce the region's vulnerability to the impacts of climate change, including sea level rise.

BCDC permitting activities are guided by an adopted San Francisco Bay Plan, which is amended periodically to keep it current. The BCDC currently is considering amendments to the Bay Plan that address tidal marshes, climate change, and safety of fills. A revised draft of amendments to the Bay Plan was released on May 27, 2011 and revisions to the Plan are scheduled to be considered by the BCDC in September 2011. As a part of the effort to amend the Bay Plan to address climate change planning, BCDC's Local Government Adaption Assistance Program provides information to cities

[102] Ocean Protection Council. *State of California Sea-Level Rise Interim Guidance Document,* October 2010. Available at: <http://www.opc.ca.gov/webmaster/ftp/project_pages/Climate/SLR_Guidance_Document.pdf>.

and counties on how to consider climate change impacts from projected sea level rise in local adaptation planning.

Regional

Santa Clara Valley Water District

The SCVWD operates as the flood control agency for the County. Their stewardship also includes creek restoration, pollution prevention efforts, and groundwater recharge. The SCVWD requires permits for all well construction and destruction work, most exploratory boring for groundwater exploration, and projects occurring on any SCVWD property or easement. Permits are required under the SCVWD's Water Resources Protection Ordinance and the District Well Ordinance. The SCVWD along with 15 cities, the county and business, agriculture, streamside property owner and environmental interests set up the Water Resources Protection Collaborative, which has prepared and adopted *Guidelines and Standards for Land Use Near Streams: A Manual of Tools, Standards, and Procedures to Protect Streams and Streamside Resource in Santa Clara County*. The SCVWD's role and responsibility in water supply and resources management is also discussed in Section 3.10 Public Utilities of this PEIR.

City of San José

San José 2020 General Plan

Existing policies in the City of San José General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Relevant General Plan Policies that directly address reducing and avoiding drainage, flooding, and water quality impacts include the following:

- Water Resources Policies #1-13
- Flooding Policies #1-8

Municipal Regional Stormwater NPDES Permit

The EPA has delegated oversight of NPDES requirements for municipal urban runoff discharges in California to the SWRCB and the nine RWQCB offices. In 2009, the San Francisco Bay Regional Water Quality Control Board issued a regional NPDES permit (NPDES Permit Order R2-2009-0074, NPDES Permit No. CAS612008) for stormwater consolidating requirements for all Bay Area municipalities and flood control agencies that discharge directly to San Francisco Bay. Some provisions require regional action and collaboration, but others relate to specific municipal activities over which the municipalities have individual responsibility and control. The current permit is effective for five years, until October 14, 2014. The current permit is based in large part on an earlier joint NPDES Permit to Santa Clara County, the Santa Clara Valley Water District, and 13 of the cities within the County, including San José. This collection of municipalities and agencies formed an association called the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) to meet National Pollutant Discharge Elimination System (NPDES) permit regulations by sharing resources and collaborating on projects of mutual benefit.

Under the Municipal Regional Stormwater NPDES Permit (also referred to as MRP), development projects that create, add, or replace 10,000 square feet or more of impervious surface area are required to control post-development storm water runoff through source control, site design, and treatment control best management practices (BMPs). Additional requirements must be met by certain large projects that create one acre or more of impervious surfaces (see Hydromodification discussion below). Beginning December 1, 2011, the impervious surface threshold for Regulated Projects will be decreased from 10,000 square feet to 5,000 square feet for special land use categories (e.g., auto services facilities, gas stations, restaurants, parking lots) and most Regulated Projects will have to treat stormwater runoff with additional treatment measures, such as harvesting and re-use, infiltration, evapotranspiration, or biotreatment.

Another component of the MRP includes trash reduction requirements. The Trash Load Reduction provision in the MRP requires annual clean up of 32 creek Trash Hot Spots and establishes phased goals to dramatically reduce trash loads from the storm sewer system.

Hydromodification Management Plan

Hydromodification is a change in stormwater runoff characteristics from a watershed caused by changes in land use conditions (i.e., urbanization) that alter the natural cycling of water. Changes in local land use can cause runoff volumes and velocity to increase which can result in a decrease in natural vegetation, changing of river/creek bank grades, soil compaction, and the creation of new drainages.

In addition to water quality controls, the Regional Municipal NPDES permit has hydromodification controls as defined in the Hydromodification Management Plan. The NPDES permit requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams, and creeks. Projects may be deemed exempt from the permit requirements if they do not meet the size threshold, drain into tidally influenced areas or directly into the Bay, drain into hardened channels, or are projects in subwatersheds that are 65 percent or more impervious based on the Hydromodification Management Applicability Map (as amended March 2009).

Stormwater Management Plan

Components of a Stormwater Management Plan (SWMP) for urban runoff are incorporated in the requirements of the joint NPDES Phase 1 Municipal Stormwater permit issued by the RWQCB to the City of San José (a co-permittee).[103] The purpose of an SWMP is to identify specific tasks and programs to reduce the discharge of pollutants in stormwater. These include measures to control post-development stormwater runoff through source control and treatment control BMPs. In San José, measures are required for new and redevelopment projects that create, add or replace more than 10,000 square feet of impervious surface.

[103] California Regional Water Quality Control Board San Francisco Bay Region. *Municipal Regional Stormwater NPDES Permit Order R2-2009-0074 NPDES Permit No. CAS612008*. October 14, 2009. Available at: < http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0074.pdf>

Floodplain Ordinance – Municipal Code 17.08

City of San José Municipal Code 17.08 covers the requirements for building in various types of flood zones. This includes requirements for elevation, fill, flood passage, floodproofing, maximum flow velocities, and utility placement for multiple types of development including mobile homes, subdivisions, etc., located within a floodplain.

Post-Construction Urban Runoff Management Policy 6-29

The City of San José's Post-Construction Urban Runoff Management Policy 6-29 requires all new and redevelopment projects to implement post-construction BMPs and Treatment Control Measures (TCMs). This policy also established specific design standards for post-construction TCMs for projects that create, add, or replace 10,000 square feet or more of impervious surfaces. Policy 6-29 will need to be updated as changes to the City's NPDES Municipal Permit requirements are made.

Post-Construction Hydromodification Management Policy 8-14

The City of San José's Post-Construction Hydromodification Management Policy 8-14 requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams, and creeks. The policy requires these projects to be designed to control project-related hydromodification through a HM plan. Projects are not required to include hydromodification controls for peak runoff under this policy if they: 1) do not create an increase in impervious surface over pre-project (existing) conditions; or (2) are located within catchment areas that drain to hardened channels that extend continuously to the Bay, or are located within tidally-influenced creek areas or Bayland areas; or (3) are located within catchment and subwatershed areas that are greater than or equal to 65% impervious; or (4) drain to an underground storm drain that discharges directly to the San Francisco Bay. Policy 8-14 has been updated to reflect current NPDES Municipal Permit requirements and may change further based on future permit requirements.

Riparian Corridor Policy

The City of San José has adopted a Riparian Corridor Policy that addresses how development of all types should be designed to protect and preserve riparian corridors. Riparian Corridor Policy Guidelines 6A, 6F, 6G, 7A, 7B, 7C, and 7D promote water quality and flood protection.

City of San José Local Hazard Mitigation Plan

The City of San José has joined with 60 jurisdictions in the San Francisco Bay Area and participated in the development of a multi-jurisdictional hazard plan by ABAG. The hazard mitigation plan, *Taming Natural Disasters,* includes mitigation activities and strategies for dealing with a range of hazards that are likely to impact the Bay Area. Five of the hazards are related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four are related to weather (flooding, landslides, wildfires, and drought). All of the hazards, except for tsunamis, could impact San José.

3.7.2 Thresholds of Significance

For the purposes of this PEIR, a hydrology and water quality impact is significant if implementation of the proposed *Envision San José 2040 General Plan* would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Result in inundation by seiche, tsunami, or mudflow.

3.7.3 Hydrology and Water Quality Impacts

Hydrologic conditions that could adversely affect future development and redevelopment within urbanized areas of San José are identified in this discussion with an emphasis on proposed growth areas within the City. These conditions and relevant proposed General Plan policies are described below.

3.7.3.1 *Flooding and Drainage Impacts*

Flood hazard impacts may result from placing new development within existing flooding risk areas (e.g., 100-year or 1% flood zones and/or dam inundation areas) or increased runoff from development causing an increase in flood hazards.

Flooding

Portions of the City of San José are within Special Flood Hazard Areas identified by the Federal Emergency Management Agency as subject to a flood that has a one-percent chance of being equaled or exceeded in any given year (refer to Figure 3.7-3). Flooding sources include San Francisco Bay and rivers and creeks that flow through and adjacent to the City as well as local drainage areas. Flood hazards are identified for the 13 Planning Areas and each of the planned growth areas

(Villages, Employment Lands, and Specific Plan areas) in Appendix G (refer to Section 5.7). All of the Planning Areas within the UGB have at least one growth area that is within a Special Flood Hazard Area and new housing could be built in some of these growth areas.

Levees that do not meet National Flood Insurance Protection (NFIP) criteria are not considered by FEMA to provide adequate flood protection. For example, while there are levees around existing and former salt ponds north of Alviso, tidal flood zones are considered to extend into the Alviso area because the levees have not been certified using NFIP criteria.

Drainage

Development and redevelopment allowed by the proposed General Plan may increase impervious surfaces in some areas, leading to increased runoff volume and peak flows. Increased runoff to the storm drain system due to new development or redevelopment may adversely impact the operation of the storm drain network at some locations in the City. Additional flow delivered to a storm drain system that is at or under capacity may increase flooding of adjacent properties. Given the age of the City's system, and its original design to accommodate stormwater runoff from a three-year event, some parts of the City's storm drain network will likely be under capacity for larger storms.

Dam Inundation Areas

As shown on Figure 3.7-5, much of San José is within a dam failure inundation area from one or more of seven upstream reservoirs. The inundation areas shown assume complete failure of the dams with a full reservoir that is completely emptied. The actual extent and depth of inundation in the event of a failure would depend on the volume of storage in the reservoir at the time of failure. As described in Section 3.7.1 and Existing Regulations and Adopted Plans and Policies below, the risks of dam failure are reduced by several regulatory inspection programs and risks to people and property in the San José area are reduced by local hazard mitigation planning.

The Santa Clara Valley Water District has received preliminary findings of a seismic study of Anderson Dam that shows the material at the base of the dam would liquefy in a 7.25 magnitude earthquake on the nearby Calaveras Fault. The District is currently studying what corrective measures are needed to ensure public safety and has imposed operating restrictions at Anderson Dam. To prevent the uncontrolled release of water after a major earthquake, water at Anderson Reservoir is being kept at least 37-feet below the spillway and 57-feet below the crest of the dam.

Seiche and Tsunami Hazards

A seiche is the oscillation of water in an enclosed body of water. The largest enclosed body of water with the potential to affect development allowed under the proposed General Plan is San Francisco Bay, north of Alviso. Ring levees within the salt pond restoration areas at the margins of the Bay would dampen the effects of a seiche in San Francisco Bay, which would avoid substantial effects to infrastructure or other development in San José.

A tsunami is a sea wave generated by an earthquake, landslide, or other large displacement of water in the ocean. The Association of Bay Area Government has prepared tsunami inundation maps for the Bay Area. The projected extent of tsunami inundation near San José is limited to the sloughs of

Coyote Creek at the bay margins.[104] The inundation areas are over one mile from the City's UGB. Therefore, a tsunami would not adversely affect development allowed under the proposed General Plan.

Climate Change and Sea Level Rise

Global climate change presents a potential additional flooding hazard to some areas of the City through sea level rise and changes in precipitation timing and amount. Future sea level rise as a result of climate change remains largely unknown and estimates for the timeframe of the proposed General Plan vary widely from an insignificant level to one to two feet. As previously described, an 18-inch rise in sea level by 2050 would inundate the Alviso Village area if there was no tidal flood protection provided by levees. A 55-inch (approximately 4 ½ foot) rise in sea level by 2100 could extend the inundation zone to the vicinity of SR 237 (refer to Figure 3.7-6). A primary concern with sea level rise in the South Bay is the likely increased pressure on existing levees and potential for breaches. Given the potential social and economic impact of such a rise upon the region, it is likely that improvements will be made to levees or other remedies implemented at some point in the future. Based on information currently available, it is however reasonable to consider that levee breaches could impact existing and future development in the Alviso area and in the vicinity of SR 237, including portions of the San José/Santa Clara WPCP facility.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Flooding Impacts

The proposed *Envision San José 2040 General Plan* includes updated community safety policies that address the exposure of people and structures to risks associated with flooding. Revisions to existing policies clarify that hazards reduction and avoidance measures are required as a part of the City's development review process. Proposed General Plan Policies and Actions that provide program-level mitigation for the range of flooding hazards, including possible sea level rise, within the City are identified below.

Flooding and Stormwater Runoff	
Policy EC-5.1	The City shall require evaluation of flood hazards prior to approval of development projects within a Federal Emergency Management Agency (FEMA) designated floodplain. Review new development and substantial improvements to existing structures to ensure it is designed to provide protection from flooding with a one percent annual chance of occurrence, commonly referred to as the "100-year" flood or whatever designated benchmark FEMA may adopt in the future. New development should also provide protection for less frequent flood events when required by the State.
Policy EC-5.3	Preserve designated floodway areas for non-urban uses.
Policy EC-5.5	Prepare and periodically update appropriate emergency plans for the safe evacuation of occupants of areas subject to possible inundation from dam and levee failure and natural flooding. Include maps with pre-established evacuation routes in dam failure plans.

[104] ABAG. *Tsunami Inundation Map for Emergency Planning.* July 2009. Available at: < http://www.abag.ca.gov/bayarea/eqmaps/tsunami/tsunami.html>

Policy EC-5.7	Allow new urban development only when mitigation measures are incorporated into the project design to ensure that new urban runoff does not increase flood risks elsewhere.
Policy EC-5.9	Work with local, regional, state and federal agencies to ensure new and existing levees provide adequate flood protection and actively partner with the Santa Clara Valley Water District and other levee owners with respect to National Flood Insurance Program (NFIP) levee recertification.
Policy EC-5.13	As a part of the City's policies for addressing the effects of climate change and projected water level rise in San Francisco Bay, it requires evaluation of projected inundation for development projects near San Francisco Bay or at flooding risk from local waterways which discharge to San Francisco Bay. For projects affected by increased water levels in San Francisco Bay, the City requires incorporation of mitigation measures prior to approval of development projects. Mitigation measures incorporated into project design or project location shall prevent exposure to substantial flooding hazards from increased water levels in San Francisco Bay during the anticipated useful lifetime of structures.
Action EC-5.14	Implement the requirements of FEMA relating to construction in Special Flood Hazards Areas as illustrated on Flood Insurance Rate Maps. Periodically update the City's Flood Hazard Regulations to implement FEMA requirements.
Action EC-5.18	Maintain City storm drainage infrastructure in a manner that reduces flood hazards. As the storm drainage system is extended or modified, provide capacity to adequately convey the 10-year storm event.
Action EC-5.19	Develop and maintain a Storm Drainage Master plan and work with other agencies to develop broader Watershed Management Plans to model the City's hydrology.
Action EC-5.20	Monitor information from regional, state, and federal agencies on water level rises in San Francisco Bay on an on-going basis. Use this information to determine if additional adaptive management actions are needed and implement those actions to address flooding hazards from increasing sea levels for existing or new development and infrastructure.
General Provision of Infrastructure	
Policy IN-1.1	Continue to provide and maintain adequate water, wastewater, and stormwater services to areas in and currently receiving these services from the City.
Policy IN-1.2	Provide and maintain adequate water, wastewater, and stormwater services to areas in the city that do not currently receive these City services upon funding and construction of the infrastructure necessary to provide them.
Water Supply, Sanitary Sewer and Storm Drainage	
Policy IN-3.7	Design new projects to minimize potential damage due to storm waters and flooding to the site and other properties.
Policy IN-3.8	In designing improvements to creeks and rivers, protect adjacent properties from flooding consistent with the best available information and standards from the Federal Emergency Management Agency (FEMA) and the California Department of Water Resources (DWR). Incorporate restoration of natural habitat into improvements where feasible.

Policy IN-3.9	Require developers to prepare drainage plans for proposed developments that define needed drainage improvements per City standards.
Wastewater Treatment and Water Reclamation	
Action IN-4.8	Prepare, maintain and implement a Master Plan(s) for the ongoing capital improvement, maintenance, and operation of the wastewater treatment and water reclamation facilities.

The policies listed above call for continued implementation of flood protection within the City based upon established programs and flood control requirements at the federal, state, and local level (e.g., FEMA and DWR standards). Several policies and actions listed above (i.e., Policy EC-5.13, Action EC-5.20, and Action IN-4.8) address impacts and adaptation to rising sea levels that could occur associated with climate change. As described above, there is no universal consensus regarding the magnitude of predicted sea level rise, particularly in regards to projections 100 years into the future. A planning horizon of 100 years is far beyond the planning timeline of the proposed General Plan and beyond the typical useful life of structural flood protection elements, such as levees. In other words, even if it were feasible to construct a project today to protect for a sea level rise scenario in 2100, it may not be advisable to do so, since that project could be structurally unsound or otherwise unsuitable by the time it was needed. In addition, the useful life of some development within possible inundation zones may be less than 100 years. Through the policies and actions listed above, the City recognizes that additional evaluation and mitigation measures may be required for development and public infrastructure in the Alviso and North San José areas that could be subject to tidal action or storm surge in the future or where pump station operation could be adversely affected. As an example, the Master Plan for the San José/Santa Clara WPCP, currently being prepared, will consider possible sea-level rise, shoreline erosion, and flood hazard management with an adaptive management strategy as a part of the WPCP Master Plan Update.

Existing Regulations and Adopted Plans and Policies

Existing local, state and federal regulations that would reduce or avoid possible hazards from flooding, including from dam failure include:

- FEMA National Flood Insurance Program (NFIP)
- California Water Code
- City of San José Municipal Code, Chapter 17.08 (Special Flood Hazard Area Regulations)
- Post-Construction Hydromodification Management Policy 8-14
- City of San José Local Hazard Mitigation Plan

Impact HYD -1: New development and redevelopment allowed under the proposed General Plan could result in the placement of new development, including housing, in Special Flood Hazard Areas and dam failure inundation zones. In addition, where development or redevelopment results in an increase in impervious surfaces, increased runoff could exceed the capacity of local storm drainage systems. Implementation of proposed General Plan policies and existing regulations and adopted plans and policies would substantially reduce flooding and drainage hazards. **(Less Than Significant Impact)**

3.7.3.2 *Impacts to Groundwater Recharge*

Groundwater levels are maintained or recharged through infiltration of surface water below the ground surface into pore spaces, and/or fractures, in soil and rock materials. The conversion of existing pervious surfaces (such as bare ground, natural areas, and landscaped areas) to impervious surfaces (such as buildings and pavements) may decrease groundwater infiltration into an underlying groundwater basin. This particularly is the case where there are no substantial clay or other layers that retard percolation into groundwater aquifers below (i.e., an "unconfined" aquifer).

As described in Section 3.7.1.3, the two groundwater sub-basins underlying San José are the Santa Clara Valley Sub-basin and the Coyote Valley Sub-basin. These groundwater sub-basins are important sources of water supplies. The SCVWD operates and maintains 18 major groundwater recharge systems, including in-stream and off-stream percolation facilities to assist with groundwater recharge in the Santa Clara Valley. Development and redevelopment of new residential, commercial, or industrial uses allowed under the General Plan is not proposed to occur within any of the SCVWD's percolation facilities for groundwater recharge nor will it otherwise affect the operation of the percolation or recharge facilities. The City is planning for infrastructure improvements that may result in the placement of fill or bridge footings within existing percolation ponds. Any modifications to existing percolation ponds will require coordination with the SCVWD and mitigation in the form of additional capacity elsewhere.

Key groundwater recharge areas are located where water can percolate easily into the Santa Clara groundwater basin. Possible effects on groundwater quality from development in these areas are discussed in Section 3.7.3.3 below.

Groundwater levels also are affected by the use of groundwater as a water supply. The effects of water demand and use on groundwater levels and the potential for land subsidence due to overdraft are addressed in Section 3.10 Utilities and Service Systems.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Groundwater Recharge Impacts

The proposed *Envision San José 2040 General Plan* includes updated policies that address protection of groundwater recharge areas and groundwater as a water supply. Proposed General Plan Policies that provide program-level mitigation within the City are identified below.

Water	
Policy ER-10.5	Protect groundwater recharge areas, particularly creeks and riparian corridors.
Water Quality	
Policy MS-20.3	Protect groundwater as a water supply source through flood protection measures and the use of stormwater infiltration practices that protect groundwater quality. In the event percolation facilities are modified for infrastructure projects, replacement percolation capacity will be provided.

Protecting groundwater as a water supply source through flood protection measures means protecting groundwater recharge areas and wells from flooding that could do damage to these facilities.

Existing Regulations and Adopted Plans and Policies

Existing programs that would reduce or avoid interference with groundwater recharge include:

- SCVWD Groundwater Recharge Program

Impact HYD-2: New development and redevelopment allowed under the proposed General Plan would not result in the placement of new development within existing percolation facilities. The construction of infrastructure to serve planned development may result in impacts to groundwater recharge facilities. Implementation of proposed General Plan policies and existing programs would avoid impacts to important groundwater recharge areas. **(Less Than Significant Impact)**

3.7.3.3 *Impacts to Water Quality*

Surface Water Quality

Construction and Post-Construction Impacts

Ground-disturbing activities related to construction allowed under the proposed General Plan could result in accelerated erosion on work sites and increased input of fine sediments into the City's storm drains and ultimately into area creeks and the Bay. Construction would also involve the use of various hazardous substances such as vehicle fuels and lubricants, paving media, paints, and solvents. The accidental release or discharge of any of these substances could adversely affect water quality, endanger aquatic life, and/or otherwise result in violation of water quality standards.

New impervious surfaces, such as pavements and roofs, can increase the delivery of polluted runoff to storm drains and ultimately to San Francisco Bay. This is especially the case during the "first flush" at the beginning of the storm season, when urban pollutants are washed from paved, painted or roof surfaces. Landscaped areas can be a source of fertilizers, pesticides, and other chemical compounds in stormwater runoff while stormwater runoff from paved areas can, and frequently does, contain oils, grease, and trash.

An increase in impervious surfaces can also increase the peak flow delivered to streams and the frequency and duration of flows in streams. This combination of higher peaks and increased volume can result in erosion of creek beds and banks and excess deposition of sediment further downstream. Modification of runoff patterns is assessed using a hydrograph, or chart or graph that shows streamflows over time. The effects of urbanization on stormwater runoff and streamflow that change a hydrograph is also known as "hydromodification".

Several regulatory programs that are enforced at a local level are designed to substantially reduce the addition of pollutants from new construction to stormwater runoff. As described in Section 3.7.1.8 Regulatory Framework, regulatory programs that require the use of Best Management Practices and/or measures to offset the possible effects of hydromodification during construction and post-construction would apply to new development and redevelopment in the City.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Stormwater Runoff and Surface Water Quality Impacts

The proposed *Envision San José 2040 General Plan* includes updated policies that address stormwater runoff and surface water quality. Proposed General Plan Policies and Actions that provide program-level mitigation for water quality impacts within the City are identified below.

Water Conservation and Quality	
Policy MS-3.4	Promote the use of green roofs, landscape-based treatment measures, pervious materials for hardscape, and other stormwater management practices to reduce water pollution.
Policy MS-3.5	Minimize area dedicated to surface parking to reduce rainwater that comes into contact with pollutants.
Riparian Corridors	
Policy ER-3.3	Design new development to protect adjacent riparian corridors from encroachment of lighting, exotic landscaping, noise and toxic substances into the riparian zone.
Stormwater	
Policy ER-9.1	Manage stormwater runoff in compliance with the City's Post-Construction Urban Runoff (6-29) and Hydromodification Management (8-14) Policies.
Policy ER-9.3	Ensure that private development in San José includes adequate measures to treat stormwater runoff.
Policy ER-9.5	Ensure that all development projects in San José maximize opportunities to filter, infiltrate, store and reuse or evaporate stormwater runoff onsite.
Action ER-9.10	Continue to participate in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) and take other necessary actions to formulate and meet regional water quality standards which are implemented through the National Pollution Discharge Elimination System (NPDES) permits and other measures.
Water	
Policy ER-10.2	In Consultation with the SCVWD restrict or carefully regulate public and private development in upland areas to prevent uncontrolled runoff that could impact the health and stability of streams.
Geologic and Soil Hazards	
Policy EC-4.1	All new or remodeled habitable structures shall be designed and built in accordance with the most recent California Building Code and municipal code requirements as amended and adopted by the City of San José, including provisions for expansive soil, and grading and storm water controls.
Environmental Contamination	
Policy EC-7.10	Require review and approval of grading, erosion control and dust control plans prior to issuance of a grading permit by the Director of Public Works on sites with

	known soil contamination. Construction operations shall be conducted to limit the creation and dispersion of dust and sediment runoff.
Water Supply, Sanitary Sewer and Storm Drainage	
Policy IN-3.4	Maintain and implement the City's Sanitary Sewer Level of Service Policy and Sewer Capacity Impact Analysis (SCIA) Guidelines to: • Prevent sanitary sewer overflows (SSOs) due to inadequate capacity so as to ensure that the City complies with all applicable requirements of the Federal Clean Water Act and State Water Board's General Waste Discharge Requirements for Sanitary Sewer Systems and National Pollutant Discharge Elimination System permit. SSOs may pollute surface or ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters. • Maintain reasonable excess capacity in order to protect sewers from increased rate of hydrogen sulfide corrosion and minimize odor and potential maintenance problems. • Ensure adequate funding and timely completion of the most critically needed sewer capacity projects. • Promote clear guidance, consistency and predictability to developers regarding the necessary sewer improvements to support development within the City.

Existing Regulations and Adopted Plans and Policies

Existing federal, state, and local regulations and adopted policies that would reduce or avoid impacts to surface water quality during construction and post-construction periods include:

- Clean Water Act, including Section 303(d)
- NPDES General Permit for Discharges of Stormwater Associated with Construction Activity
- NPDES Industrial Discharge Permit(s)
- California Fish and Game Code – Lake and Streambed Alteration
- SCVWD's Water Resources Protection Ordinance and the District Well Ordinance
- SCVWD's Guidelines and Standards for Land Use Near Streams
- NPDES Municipal Stormwater Permit, including hydromodification controls
- City of San José Post-Construction Urban Runoff Management Policy 6-29
- City of San José Post-Construction Hydromodification Management Policy 8-14
- City of San José Riparian Corridor Policy

Impact HYD-3: New development and redevelopment allowed under the proposed General Plan would include building demolition, ground disturbance, and construction of new structures and pavement. If improperly controlled, stormwater runoff from construction sites and new development areas could transport urban contaminants and sediment to area creeks and San Francisco Bay. Implementation of proposed General Plan policies and existing regulations and adopted policies would avoid substantial new impacts to the water quality of surface waters. **(Less Than Significant Impact)**

Groundwater Quality

Groundwater quality is influenced by the makeup of the sediments through which groundwater moves as well as the introduction of contaminants from man-made sources. Locally, nitrate is a groundwater contaminant of concern (primarily in the Coyote Sub-basin) along with volatile organic compounds (VOCs), fuel additives such as MTBE (which may leak into the groundwater from underground storage tanks), and organic compounds such as polychlorinated biphenyls (PCBs) associated with accidental releases from industrial and commercial uses. High salt concentrations have also been identified in the upper aquifer zone near San Francisco Bay.

In portions of the Berryessa, Cambrian/Pioneer, Coyote, and Willow Glen Planning Areas, water can percolate relatively easily into the unconfined Santa Clara or Coyote Sub-basins due to the higher infiltration rates of underlying soil and rock materials. New development in these Planning Areas would be more likely to introduce additional contaminants (e.g., oil, grease, heavy metals, fertilizers, and pesticides from parking areas and landscape areas, and stored hazardous materials from outdoor chemical storage areas) into the underlying groundwater aquifer. In the Central and South Planning Areas (also having substantial areas of soils with moderate infiltration rates as noted in Appendix G), the underlying groundwater aquifer is more protected due to the confining layer. In northern areas of the City, listed compounds could be introduced into the shallow aquifer near the soil surface.

Regulations designed to control contaminants in surface water (stormwater runoff), including those under the NPDES program, also reduce the potential for contamination of groundwater with compounds found on developed sites. As described below, in some cases infiltration of stormwater will be limited for the purpose of groundwater protection where groundwater is close to the surface or where activities such as heavy vehicular traffic or industrial uses pose a threat to groundwater quality.

In addition to requiring the use of BMP devices, many of which rely on infiltration, the NPDES program and City Council Policy 6-29 set limitations on the use of infiltration treatment measures for the purpose of groundwater protection. At a minimum, infiltration devices must: be implemented at a level appropriate to protect groundwater quality; not cause or contribute to degradation of groundwater quality; be adequately maintained to maximize pollutant removal capabilities; maintain a vertical distance between the base of the infiltration device and seasonal high groundwater of at least 10 feet; and be located a minimum of 100 feet horizontally from any known water supply wells. In addition, unless water is first treated by another means, infiltration devices are not recommended in industrial areas, areas subject to high vehicular traffic, automotive repair shops, car washes, vehicle storage areas (i.e., bus or truck yard), nurseries, in areas with contaminated groundwater from hazardous materials releases or any other land use which may be determined by the City to post a high threat to groundwater quality.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Impacts from Contamination of Groundwater Resources

The proposed *Envision San José 2040 General Plan* includes updated policies that address avoiding contamination of groundwater resources. Revisions to existing policies clarify that assessing the potential for impacts to groundwater quality is required as a part of the City's development review process. Proposed General Plan Policies and Actions that provide program-level mitigation for preventing groundwater contamination as groundwater is recharged within the City are identified below.

Water Quality	
Policy MS-20.2	Avoid locating new development or authorizing activities with the potential to negatively impact groundwater quality in areas that have been identified as having a high degree of aquifer vulnerability by the Santa Clara Valley Water District or other authoritative public agency.
Policy MS-20.3	Protect groundwater as a water supply source through flood protection measures and the use of stormwater infiltration practices that protect groundwater quality. In the event percolation facilities are modified for infrastructure projects, replacement percolation capacity will be provided.
Stormwater	
Policy ER-9.4	Assess the potential for surface water and groundwater contamination and require appropriate preventative measures when new development is proposed in areas where storm runoff will be directed into creeks upstream from groundwater recharge facilities.
Environmental Resources Policies - Water	
Policy ER-10.6	Require the proper construction and monitoring of facilities that store hazardous materials in order to prevent contamination of the surface water, groundwater and underlying aquifers. In furtherance of this policy, design standards for such facilities should consider high groundwater tables and/or the potential for freshwater or tidal flooding.

Existing Regulations and Adopted Plans and Policies

Existing local, state and federal regulations that would reduce or avoid impacts to groundwater quality include:

- NPDES General Permit for Discharges of Stormwater Associated with Construction Activity
- NPDES Industrial Discharge Permit(s)
- SCVWD's District Well Ordinance (which limits introduction of contaminants through wells)
- NPDES Municipal Stormwater Permit, including limits on infiltration at some sites.
- Post-Construction Urban Runoff Management Policy 6-29
- City of San José Municipal Code, Title 20, Section 100.470

Impact HYD-4: New development and redevelopment allowed under the proposed General Plan could result in the placement of new development within or near areas where surface water percolates to groundwater. Implementation of proposed General Plan policies and existing regulations and adopted plans and policies would substantially reduce new impacts to groundwater quality from urban development. **(Less Than Significant Impact)**

3.7.3.4 *Impacts of Rancho del Pueblo and iStar Residential Options*

As discussed in Section 2.2.8 in the Project Description, this PEIR also evaluates options for residential land use designations and anticipated future development on two properties; the Rancho del Pueblo Golf Course in the Alum Rock Planning Area and the iStar property in the Edenvale Planning Area (Residential Option Sites). Under these options one or both of these properties would be designated for residential uses instead of the industrial uses assumed on the iStar property and the park/open space on the existing Rancho del Pueblo Golf Course. Because these options also includes changes to other Growth Areas to balance the jobs and dwelling units, the overall amount of development capacity assumed under the Preferred Scenario would not change citywide.

A comparison and summary of hydrology and water quality impacts for the residential options is shown in Table 3.7-2. Implementation of an updated General Plan that includes one or both of the residential options for the Rancho del Pueblo and iStar sites would have impacts similar to those from the proposed project.

Table 3.7-2
Hydrology and Water Quality Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
HYD-1	Flooding and Drainage	Neither site is in a 1% flood zone. The iStar site is in a dam failure inundation area, like much of San José. Runoff could increase from both sites. Implementation of proposed General Plan policies and existing regulations would substantially reduce flooding and drainage hazards.	similar (LTS)
HYD-2	Groundwater Recharge	Development of both sites would not impact SCVWD groundwater recharge sites.	same (LTS)
HYD-3	Surface Water Quality	Both sites are located on the valley floor on flat to gently sloping sites. Impacts to surface water quality during construction and post-construction periods could be reduced through proposed policies and existing regulations.	same (LTS)
HYD-4	Groundwater Quality	The sites are not located in areas with unconfined groundwater aquifers.	same (LTS)

[1] S= Significant; LTS = Less Than Significant
The determination of significance assumes implementation of proposed General Plan policies and actions and existing regulations and adopted plans and policies previously identified throughout Section 3.7.3 Hydrology and Water Quality Impacts.
Bold = New Significant Impact

3.7.4 Mitigation and Avoidance Measures for Hydrology and Water Quality Impacts

3.7.4.1 *Proposed General Plan*

No mitigation measures are required.

3.7.4.2 *Rancho del Pueblo and iStar Residential Options*

No mitigation measures are required.

3.7.5 Significance Conclusions

3.7.5.1 *Proposed General Plan*

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions would result in less than significant hydrology and water quality impacts and no mitigation measures are required. **(Less Than Significant Impacts)**

3.7.5.1 *Rancho del Pueblo and iStar Residential Options*

Implementation of the proposed *Envision San José 2040 General Plan* with the Rancho del Pueblo and iStar Residential Options in accordance with proposed policies and actions would result in less than significant hydrology and water quality impacts and no mitigation measures are required. **(Less Than Significant Impacts)**

3.8 HAZARDOUS MATERIALS AND HAZARDS

The following discussion evaluates hazards and hazardous materials conditions and the environmental effects of implementation of the *Envision San José 2040 General Plan*. The analysis in this section is based in part on the following technical report:

- *Current Conditions Report Hazards and Hazardous Materials Envision San José 2040 General Plan Update*, Cornerstone Earth Group, February 12, 2010.

A copy of the current conditions report is included in the Technical Appendices to this Draft PEIR (Appendix H).

3.8.1 Existing Setting

3.8.1.1 *Hazardous Materials Use*

As is common to most urban communities, hazardous materials are used and stored by businesses operating within a wide range of industries including maintenance, manufacturing, construction, agricultural, transportation, dry cleaning, automotive, medical and electronics, among others. Many products containing hazardous chemicals also are routinely used and stored in homes. Hazardous materials in various forms can cause death, serious injury, long-lasting health effects and damage to the environment. These products also are shipped daily on the nation's highways, railroads, waterways and pipelines. Chemical manufacturers are one source of hazardous materials, but there are many others, including service stations, hospitals, and hazardous materials waste sites. Major transportation routes used to transport hazardous materials within San José include I-880, US 101, SR 85, and Union Pacific Railroad lines. Local roadways are also used to transport materials from these major routes to various businesses and institutions.

Each year, Californians generate two million tons of hazardous waste. One hundred thousand privately- and publicly-owned facilities generate one or more of the 800-plus wastes considered hazardous under California law. Properly handling these wastes avoids threats to public health and degradation of the environment. These substances are most often released as a result of transportation accidents, chemical accidents, or releases from above ground/underground storage tanks. Risks associated with accidental releases include exposure of emergency responders, the public, or the environment to these substances. Other hazards include explosion or fire.

The locations of facilities that use hazardous materials are distributed throughout the City of San José within industrial, light industrial and commercial areas. Hazardous materials typically associated with common land uses are summarized in Table 3.8-1 and briefly discussed below.

Commonly Used Hazardous Materials in San José

Petroleum Oils and Fuels

Petroleum is used mostly, by volume, for producing gasoline, diesel, jet, heating, and other fuel oils. It is primarily used in trucks, ships and cars and for emergency power generation. Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs), typically used to store petroleum fuel, are regulated in California to help prevent release of petroleum and the contamination of soils

and ground water. In addition to the fuels themselves, gasoline additives, such as MTBE, have toxic properties that can impact human health and the environment.

Table 3.8-1
Common Land Uses and Typical Associated Hazardous Materials

Land Use	Potential Hazardous Materials
Agriculture (including greenhouses*)	Pesticides, herbicides, fertilizers and metals*
Airports	Petroleum fuels, oils and solvents
Automobile service and repair	Petroleum fuels, oils, metals, paints, solvents and welding gases
Cannery/food processing	Petroleum fuels, oils, cleaning compounds, refrigerants and metals
Cemeteries and mortuaries	Formaldehyde, methanol, ethanol and other solvents
Cleaning/dry cleaning	Petroleum fuels and solvents
Cold storage	Refrigerants (Freon and ammonia)
Concrete/asphalt supply	Corrosives, oils, petroleum fuels
Construction/contractor yards	Petroleum fuels, oils, solvents and welding gases
Dairy farming*	Petroleum fuels, pesticides (including rodenticides)
Electronics manufacturing	Solvents, petroleum fuels, metals, corrosives and toxic gases and liquids
Electric power plants	Petroleum fuels, oils, polyaromatic hydrocarbons (PAHs)*, toxic gases or liquids (ammonia) for air pollution control
Gasoline station	Petroleum fuels, oils, solvents and metals
Golf courses	Pesticides
Hospitals/medical facilities	Medical waste, radioactive materials and petroleum fuels
Laboratories	Solvents, corrosives, and toxics
Landfill	Petroleum hydrocarbons, landfill gas, metals, solvents (among others)
Lumber mills or yards	Petroleum fuels, oils, solvents, metals, pentachlorophenol* and creosote*
Manufacturing (miscellaneous)	Petroleum fuels, oils, solvents and metals
Meat packing	Petroleum fuels, metals, flammable liquids, refrigerant gases

Table 3.8-1
Common Land Uses and Typical Associated Hazardous Materials

Land Use	Potential Hazardous Materials
Metal working, machining and milling	Petroleum fuels, oils, welding gases, solvents and metals
Nurseries	Pesticides, herbicides, metals and fuels
Painting	Solvents and metals
Pest control	Pesticides, toxic gases, and metals*
Photography	Metals and solvents
Plating	Petroleum fuels, oils, solvents, corrosives, and metals
Printing	Solvents, metals and petroleum fuels*
Railroads/rail yards	Petroleum fuels, oils, PCBs and metals
Residential	Asbestos, lead-based paint, pesticides (from termite control) and cleaning compounds
Scrap metal recycling	Metals, lubricants, petroleum fuels, solvents and PCBs
Semiconductor manufacturing	Solvents, petroleum fuels, metals, corrosives and toxic gases
Swimming pools	Oxidizers and corrosives
Tanneries*	Metals (chromium), cyanide, solvents and petroleum fuels
Trucking/Transportation	Petroleum fuels, oils and metals
Transformers/Electrical equipment	PCBs and oils
Wastewater pollution control plant	Toxic gases, petroleum fuels, oils, metals, flammable gases (methane)
Water treatment plants (potable and recycled water)	Oxidizers
Woodworking	Epoxy resins, glues, lacquers, paints, petroleum hydrocarbons solvents, stains, varnishes and waste oils

*Historic use (facilities not currently located in San José or material no longer used at these facilities)

Leaking storage tanks are a significant source of petroleum impacts to soil and ground water and may pose the following potential threats to health and safety:

- Exposure from impacts to soils and/or groundwater
- Contamination of drinking water aquifers
- Contamination of public or private drinking water wells
- Inhalation of vapors

A large majority of reported petroleum releases are associated with USTs. Since the inception of the state UST program in 1984, more than 45,000 leaking USTs have been reported in California and 33,000 of these sites have been remediated with approximately 12,000 leaking UST sites remaining to be investigated and mitigated. The State Water Resource Control Board (SWRCB) is responsible for cleanup and abatement of fuel leaks. Coordination between the SWRCB and the local Certified Unified Program Agency (CUPA) typically occurs in the oversight of the investigation and cleanup of fuel system releases.

Natural Gas

Natural gas is a colorless flammable gas or liquid that poses explosion hazards under certain conditions. In the Bay Area, natural gas is used for heating residences and commercial and industrial facilities. Natural gas is also used to power generators at several electric power plants in San José. There are several high pressure natural gas transmission lines in San José that supply local natural gas distribution systems in the City and the City has set back requirements for development near natural gas transmission lines (refer to Appendix H).

Propane

Propane is a flammable fuel that is derived from petroleum and natural gas and generally stored in liquid form in pressurized tanks. Propane is used as a fuel for a small number of vehicles and for barbeques and heating, cooking, and refrigeration in recreational vehicles. Several fueling stations in San José have large propane storage tanks.

Solvents (Volatile Organic Compounds)

A solvent is a substance capable of dissolving another substance to form a mixture. The most commonly-used solvents of concern are organic (carbon-containing) chemical that usually have a low boiling point and evaporate easily. Solvents are usually clear and colorless liquids and many have a characteristic odor. Common uses for organic solvents are in dry cleaning (e.g. tetrachloroethylene or perchloroethylene [PCE]), as paint thinners (e.g. toluene, turpentine), as nail polish removers and glue solvents (acetone, methyl acetate, ethyl acetate), in spot removers (e.g. hexane, petrol ether), in detergents (citrus terpenes), in perfumes (ethanol), and in chemical syntheses.

Trichloroethylene (TCE) was one of the more commonly used solvents by the high tech industry in Silicon Valley in the 1980s; it mainly was used to wash microscopic pieces of dust off semi-conductor chips. Today, it is a common contaminant in soil and ground water and is regulated due to its toxic properties. Exposures typically occur through drinking contaminated water or through inhalation of vapor that has off-gassed from contaminated soil or groundwater and entered nearby buildings.

Facilities with solvent releases to soils and ground water are typically overseen by the San Francisco Bay Regional Water Quality Control Board (RWQCB) in the Site Cleanup Program (SCP) or by the Department of Toxic Substances Control (DTSC). Many of these sites are regulated under cleanup requirements issued by the overseeing agency that generally mandate a time schedule for specific tasks that must be performed by the responsible party or parties to investigate and cleanup the site.

Agricultural Chemicals

Land within Santa Clara County has been used for agricultural purposes since at least the late 1800s. Pesticides (such as arsenic-containing insecticides and organochlorine pesticides) were applied to crops in the normal course of farming operations.

Arsenic-containing (arsenical) insecticides have been used in agriculture for centuries. Lead arsenate was the most extensively used of the arsenical insecticides. Lead arsenate was first prepared as an insecticide in 1892. Initially it was prepared by farmers on-site by reacting soluble lead salts with sodium arsenate. Lead arsenate pastes and powders were also sold commercially and their use continued until the mid-1960s.

Organochlorine pesticides were introduced in the 1940s and persist in the environment long after they are applied. Despite restrictions and bans on the use of many organochlorine pesticides in the 1970s and 1980s, they continue to persist in the environment today. The most well known organochlorine pesticide is the insecticide DDT (Dichloro diphenyl trichloroethane) which was widely used in agricultural production around the world for many years. Pesticides, like DDT, are persistent organic pollutants that are hydrophobic and strongly absorbed by soils. Depending on conditions, its soil half life can range up to several decades. Other commonly known organochlorine pesticides that have been banned in the U.S. include aldrin, dieldrin, toxaphene, chlordane and heptachlor.

Asbestos

Asbestos is a natural mineral fiber that was once commonly used in building materials. Inhaling airborne asbestos fibers can increase the risk of developing certain lung diseases, including lung cancer, mesothelioma and asbestosis. Many building materials can contain asbestos, especially those installed prior to 1980. The Federal government placed a moratorium on the production of most asbestos products in the early 1970s, but these products continued to be installed for many subsequent years. Some products can still legally contain asbestos.

Lead-Based Paint

Lead-based paint is a major source of lead poisoning for children and can also affect adults. Lead was used as a pigment and drying agent in “alkyd” oil based paint. “Latex” water based paints generally have not contained lead. Approximately two-thirds of the homes built before 1940 and one-half of the homes built from 1940 to 1960 contain heavily-leaded paint. Some homes built after 1960 also contain heavily-leaded paint. It may be on any interior or exterior surface, particularly on woodwork, doors, and windows. In 1978, the U.S. Consumer Product Safety Commission lowered the legal maximum lead content in most kinds of paint to 0.06 percent (a trace amount). The U.S. Department of Housing and Urban Development (HUD) recommends that action to reduce exposure be taken when the lead in paint is greater than 0.5 percent by lab testing or greater than 1.0 milligrams per square centimeter by X-ray fluorescence.

Toxic Gas Facilities

A toxic gas is a material that can result in serious health effects from exposure over a relatively short period of time. Locally, toxic gases are used at industrial, commercial and institutional sites, such as semi-conductor manufacturing, laboratory and research, water treatment and large cold storage facilities.

Based on information provided by the San José Fire Department in January 2009, there are 16 facilities in San José regulated under the City's Toxic Gas Ordinance (refer to Appendix H).

Household Hazardous Materials

Many common products that are in daily use contain potentially hazardous ingredients and require special care when disposed. It is illegal to dispose of hazardous waste in the garbage, down storm drains, or onto the ground. Household hazardous materials (e.g., used paint, pesticides, cleaning products and other chemicals) are prevalent and often improperly stored in garages and homes throughout the community. Waste oil is a common hazardous material generated by city residents that is often improperly disposed and can contaminate surface water, ground water and soil.

Since 1991, the Santa Clara County Household Hazardous Waste Program has provided residents with a safe, convenient disposal service with year-round access. The County and 14 cities, including San José, participate in the countywide program and share costs based on the number of households served from each jurisdiction.

Universal Wastes

Universal wastes are hazardous wastes that are generated by a wide variety of entities that contain mercury, lead, cadmium, copper and other substances hazardous to human and environmental health. Common examples of universal wastes include televisions, computers, computer monitors, batteries, and fluorescent lamps.

Until recently, some universal wastes could be disposed in the trash; however, this is no longer the case. The Universal Waste Rule (California Code of Regulations, Title 22, Division 4.5, Chapter 23) allows people to handle and transport universal waste under a simple set of rules that are appropriate for the risks posed by the wastes but still protect people and the environment. In general, universal wastes now must either be sent directly to an authorized recycling facility or to a universal waste consolidator for shipment to an authorized recycling facility.

Medical Wastes

According the Medical Waste Management Act (MWMA), HSC Sections 117600-118360, medical waste is defined as waste that is generated or produced as a result of certain actions, including the diagnosis, treatment, or immunizations of human beings; research pertaining to the diagnosis, treatment, or immunizations of human beings; the production or testing of biologicals; and removal of a regulated waste from a trauma scene, or by a trauma scene waste management practitioner. The medical wastes are either biohazardous waste or sharps waste. The types of facilities that generate medical waste include medical and dental offices, clinics, hospitals, surgery centers, laboratories, research laboratories, education and research facilities, and trauma scene waste management practitioners.

Emergency Response to Accidental Releases

Accidental releases of hazardous materials may require an immediate response in order to protect human health and safety, and/or the environment. Hazardous material incidents differ from other emergency response situations because of the wide diversity of hazardous material types and large number of potential causes. Incidents may occur at fixed facilities or at any place along transportation routes. Circumstances such as the prevailing wind and geographic features in the vicinity of a release are relevant factors that may impact the severity of the incident and influence response actions.

The San José Fire Department Hazardous Incident Team (HIT) emergency response unit responds to emergency calls related to hazardous materials within the city. The San José Police Department and the San José Public Works Department also provide support. Along with the City's response capabilities, other responders or responsible agencies may include the California Highway Patrol, Caltrans, the San Francisco Bay Regional Water Quality Control Board, Santa Clara Valley Water District, Bay Area Air Quality Management District, Department of Toxic Substances Control and the California Department of Fish and Game. The Governor's Office of Emergency Services, California State Warning Center also must be notified of all significant releases or threatened releases of a hazardous material, including oil and radioactive materials. An extensive framework of state, federal and local regulations has been established to facilitate the safe use, storage, transportation and disposal of hazardous materials. Regulations also have been established to guide cleanup activities at release sites. A summary of this regulatory framework is presented in Section 3.8.1.5.

Existing Contamination

Information regarding reported hazardous materials release sites within San José was obtained from the GeoTracker database and from the Envirostor database. These databases are online search and Geographic Information System (GIS) tools for identifying sites with known or potential contamination, and sites where regulatory environmental oversight or review has been requested or required.

The GeoTracker database, maintained by the SWRCB, tracks regulatory data about leaking underground storage tank (LUST), Department of Defense, Site Cleanup Program and landfill sites. The EnviroStor database is maintained by the DTSC and contains information on investigation, cleanup, permitting, and/or corrective actions that are planned, being conducted or have been completed under DTSC's oversight. The EnviroStor database includes Federal Superfund sites, DTSC State Response sites, DTSC Voluntary Cleanup sites and DTSC School sites.

<u>Leaking Underground Storage Tank Sites</u>

The GeoTracker database indicates that there are 1,238 leaking underground storage tank (LUST) sites within the City of San José. Of those, 231 are open cases where site assessment, remediation and/or monitoring are in progress. The remaining 1,007 sites have been closed by the overseeing regulatory agency.

San Francisco Bay Regional Water Quality Control Board Cases

The GeoTracker database indicates that there are 157 spill incidents within the City of San José that are being overseen by the RWQCB's Site Cleanup Program (SCP). Of the 157 cases, 126 are open cases where site assessment, remediation and/or monitoring are in progress. The LUST cases noted above typically involve releases of petroleum fuels (gasoline or diesel) or waste oil from underground storage tanks (USTs). The listed SCP cases typically involve releases of volatile organic compounds (VOCs), such as solvents. Spills of petroleum products that were not contained in USTs and other contaminants such as metals and pesticides may also be involved.

DTSC State Response Sites

The EnviroStor database indicates that there are 12 facilities listed as State Response sites in San José. The State Response list identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. Of the 12 listed facilities, one is listed as active. The remaining facilities are listed as Certified or No Further Action; land use restrictions are noted to be in place for four of these facilities. A Certified status identifies completed sites with a previously confirmed release that are subsequently certified by DTSC as having been remediated satisfactorily under DTSC oversight. A No Further Action status identifies completed sites where DTSC determined after investigation that the property does not pose a threat to public health or the environment. A land use restricted site is a property where DTSC has placed limits or requirements on future use of the property, usually because contaminants remain in soil or groundwater at the site.

DTSC School Sites

DTSC's School Property Evaluation and Cleanup Division is responsible for assessing, investigating and cleaning up proposed school sites (including new construction at existing school sites). The Division helps establish that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new school. All proposed school sites that will receive state funding for acquisition or construction are required to go through an environmental review and cleanup process under DTSC's oversight. School districts conduct environmental assessments to provide basic information for determining if there has been a release of hazardous material at the sites, or if a naturally occurring hazardous material that presents a risk to human health or the environment may be present. Outreach activities integrated into the process allow a more active role for stakeholders in the selection process for school sites. Through the environmental review process, DTSC helps protect children, staff and the environment from the potential effects of exposure to hazardous materials. The EnviroStor database includes four DTSC School sites in San José of which two are listed as active and the others are listed as certified.

DTSC Voluntary Cleanup Sites

DTSC's Voluntary Cleanup Program allows motivated parties who are able to fund the investigation and cleanup and DTSC's oversight to move ahead at their own pace to investigate and remediate their sites. The EnviroStor database identifies sites with either confirmed or unconfirmed releases, where the project proponents have requested that DTSC oversee evaluation, investigation, and/or cleanup activities and have agreed to provide coverage for DTSC's costs. Nineteen voluntary cleanup sites are listed in San José. Seven of these are listed as Certified or No Further Action; land use restrictions are noted to be in place for some of the facilities.

Federal Superfund (NPL) Sites

The Envirostor database identifies sites that the U.S. Environmental Protection Agency (EPA) listed on the National Priorities List (NPL). The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL serves primarily informational purposes, identifying for the States and the public those sites that appear to warrant remedial actions. As shown below in Table 3.8-2, there are three NPL sites within San José.

Table 3.8-2
Federal Superfund Sites in San José

Site Name	Location	Cleanup Status
Fairchild Semiconductor	101 Bernal Road	Refer – RWQCB
Lorentz Barrel and Drum Co.	1507 South Tenth Street	Active – Land Use Restrictions
South Bay Asbestos Area	Liberty Street and Guadalupe River	Refer – EPA, Land Use Restrictions

3.8.1.2 *Landfill and Solid Waste Facilities*

The Solid Waste Information System (SWIS) database is maintained by the Department of Resources, Recycling and Recovery (CalRecycle)[105] and contains information on solid waste facilities, operations and disposal sites throughout the State of California. Facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites and closed disposal sites. For each facility, the database contains information about location, owner, operator, facility type, regulatory and operational status, authorized waste types, local enforcement agency and inspection and enforcement records. Information from the SWIS database regarding solid waste facilities in San José is summarized in Appendix H. Ten sites listed on the GeoTracker database are landfill sites undergoing active cleanup with oversight by the RWQCB.

Two environmental concerns related to landfills are the generation and control of landfill gas and water moving through landfilled materials (leachate). Organic materials in landfills, such as food scraps and yard waste, produce methane and other landfill gases as a part of anaerobic decomposition of these materials. The methane in landfill gas is a flammable material and can move through waste and landfill cover materials. Landfill gas can also contain other constituents (such as volatile organic compounds) that have health risks. For these reasons, operating and closed landfills are required to have landfill gas collection systems and other controls to minimize hazards. Monitoring of landfill gas and leachate as well as other general requirements for landfills are contained in Title 27 of the California Code of Regulations. These requirements are administered by CalRecycle, the State and Regional Water Quality Control Boards, and the Local Enforcement Agency (City of San José). The routine emission of hazardous materials at landfills is also locally regulated by the Bay Area Air Quality Management District (BAAQMD). Landfill gas emissions and landfill gas collection at solid waste facilities are regulated under the BAAQMD's Rule 34.

[105] Formerly the California Integrated Waste Management Board (CIWMB).

3.8.1.3 *Airports and Aircraft Safety*

Two airports, the Mineta San José International Airport and Reid-Hillview Airport, are located within the City of San José. Mineta San José International Airport is owned and operated by the City of San José and Reid-Hillview Airport is owned and operated by the County of Santa Clara.

The Mineta San José International Airport (SJC) occupies 1,000 acres northwest of Downtown San José and is one of the three major airports serving the San Francisco Bay Region. The airport has three parallel runways; 12L/30R is 11,000 feet in length and 150 feet wide, 12R/30L is 11,000 feet in length and 150 feet wide, and 11/29 is 4,600 feet in length and 100 feet wide. SJC accommodates aircraft departures and landings from commercial passenger airlines, cargo airlines and general aviation.[106] It served 8.3 million passengers in 2009 with over 100 flights a day on domestic and international air carriers.[107]

Reid-Hillview Airport (RHV) is located on 180 acres at the northwest corner of Tully Road and Capitol Expressway in southeast San José. RHV is classified as a General Aviation Reliever Airport and does not have scheduled commercial air-carrier service. The airport has two parallel runways, both 3,100 feet in length and 75 feet in width, primarily serving single-engine and small twin-engine piston aircraft.

Hazards associated with airport facilities concern protection of people on the ground and in the air from accidents that can occur as aircraft approach and depart the airport. Reducing and preventing airport hazards is addressed on a federal level by the Federal Aviation Administration (FAA), at a state level by Caltrans under the State Aeronautics Act, and supplemented on a local level in San José by the County Airport Land Use Commission and City policy plans, such as the SJC Master Plan.

Part 77 of Federal Aviation Regulations (also known as FAR Part 77), "Objects Affecting Navigable Airspace", sets forth standards and review requirements for protecting the airspace near airports, particularly by restricting the height of potential structures and minimizing other potential hazards (such as reflective surfaces, flashing lights, and electronic interference) to aircraft approaching or departing an airport.

Under Federal Aviation Regulations Part 77, the FAA must be notified of proposed structures within an extended zone defined by a set of imaginary surfaces or slopes that radiate out for several miles from an airport's runways. The FAA notification slope extends almost four (4) miles from San José International and almost two miles from Reid-Hillview. Any proposed structure (including buildings, trees, poles, antennae, and temporary construction cranes) which would penetrate this slope, or which would stand 200 feet or more in height irrespective of location relative to an airport, must be submitted to the FAA for an aeronautical study. The FAA typically makes one of three determinations based on its aeronautical study: (a) the structure as proposed would not be an airspace obstruction or hazard; (b) the structure as proposed would be an airspace obstruction but not a hazard if subject to specified conditions, such as roof-top lighting/marking and subsequent notification to the FAA of completed construction; or (c) the structure as proposed would be an airspace hazard and should not be approved.

[106] General aviation refers to all flights other than military and scheduled commercial airline flights.
[107] Mineta San José International Airport. "About SJS". Accessed April 29, 2010. <http://www.sjc.org/about.php?page=index >

As the FAA does not have authority to approve or disapprove a proposed off-airport land use, it is the responsibility of the City and other local land use jurisdictions to ensure that proposed development complies with the Federal Aviation Regulations Part 77 notification requirements and resulting FAA-issued determinations. The FAA does have the authority to protect the airspace by modifying flight procedures if feasible and/or by restricting use of the airport.

The City has had longstanding development policies in place requiring project compliance with applicable FAA regulations and aeronautical determinations through the project review process, including conditioning development approval to ensure adherence to FAA determinations and to require granting of avigation easements to the airport operator to establish elevation limits over the project property.

The FAA also has policies addressing potential wildlife hazards on or near airports. Airport operators that accept FAA grants (such as San José) are required to comply with FAA policies applicable to locating and operating potential wildlife-attractant land uses such as landfills, other trash processing facilities, and waste-water treatment facilities.

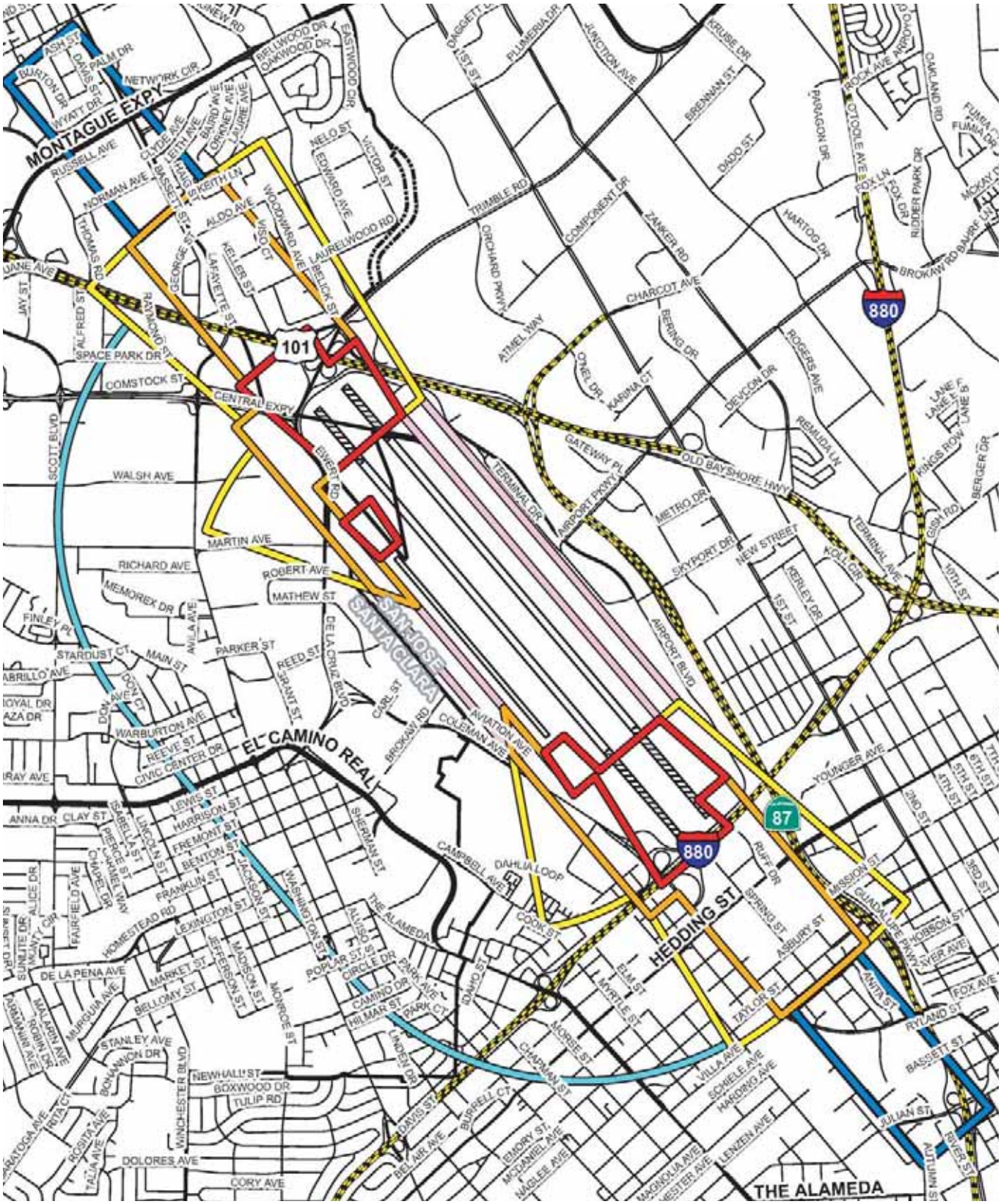
In addition, the FAA defines runway protection zones and object free areas immediately adjacent to airports which should be kept clear of structures and maintained as compatible open space. The City owns approximately 120 acres of open space immediately south of Mineta San José International Airport for airport approach protection purposes.

On a local level, the Santa Clara County Airport Land Use Commission (ALUC), under State of California mandate, has adopted comprehensive land use plans (CLUPs) for the vicinity of San José International and Reid-Hillview airports to provide for the orderly growth of each public airport while minimizing the public's exposure to excessive noise and safety hazards. The CLUPs contain policies applicable to new development, or redevelopment of existing land uses in a defined vicinity around each airport ("airport influence areas").

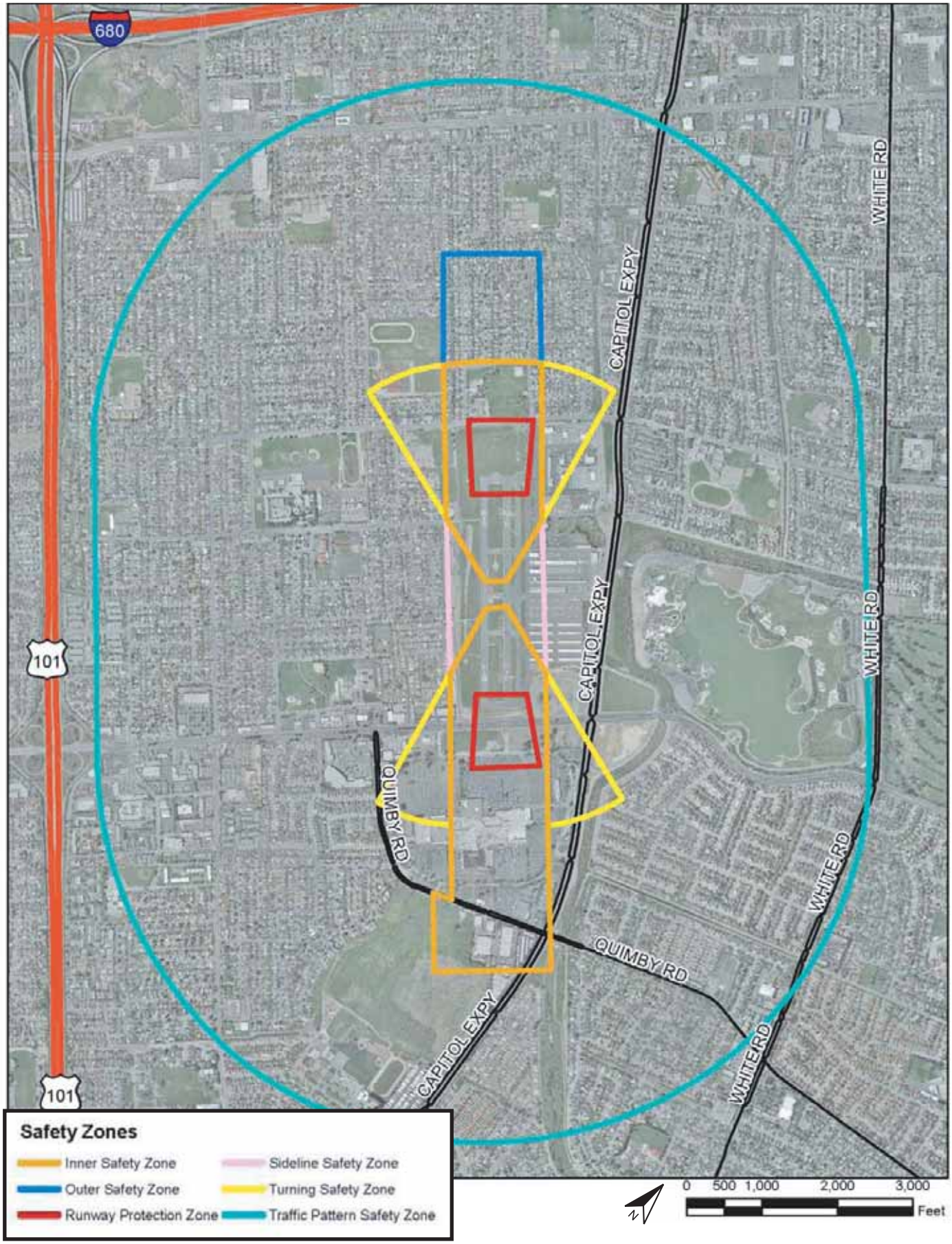
The Santa Clara County ALUC policies include a set of safety zones off the end of each runway at San José International and Reid-Hillview airports within which only certain types of land uses and densities are considered appropriate. Uses such as schools, hospitals, nursing homes and other uses in which the majority of occupants are children, the elderly and/or disabled are prohibited in safety zones closest to runway approach and departure paths. Other limits for uses in these areas are for amphitheaters, sports stadiums and other very high concentrations of people. The ALUC policies additionally include height limits that reflect federal (Federal Aviation Regulations Part 77) standards and general guidance to promote compatibility between airport operation and off-airport land use development. Safety Zones for San José International and Reid-Hillview airports are shown on Figures 3.8-1 and 3.8-2, respectively.

3.8.1.4 *Wildland-Urban Interface Areas*

The California Department of Forestry and Fire Hazard Protection is responsible for the identification of very high fire hazard severity zones and transmission of these maps to local government agencies. The City of San José's Local Responsibility Area (also referred to as LRA) contains parcels that are located within these zones. The purpose of classifying areas as very high fire hazard severity zones is to allow local officials to require mitigation measures that reduce the rate of spread and potential intensity of uncontrolled fires that threaten to destroy resources, life, and/or property at the urban edge of their jurisdictions. The very high fire hazard severity zones



SAN JOSE INTERNATIONAL AIRPORT SAFETY ZONES FIGURE 3.8-1



REID-HILLVIEW AIRPORT SAFETY ZONES FIGURE 3.8-2

within the City limits are all outside the City's Urban Growth Boundary. These zones include land within the Berryessa, Alum Rock, Evergreen and Calero Planning Areas. The very high fire hazard severity zones (VHFHSZ) within the City limits of San José are shown on Figure 3.8-3.

The very high fire hazard severity zone in the Berryessa and Alum Rock Planning Areas consists of Alum Rock Park, a City-owned facility. During the dry season, the City closes the park to visitors when there is a high fire danger and weather conditions increase the risk of fire.

3.8.1.5 *Regulatory Framework*

Beginning in the 1970s, governments at the federal, state, and local level became increasingly concerned about the impacts from hazardous materials on human health and the environment. Numerous laws and regulations were developed to regulate the management of hazardous materials and mitigate potential impacts. As a result, the storage, use, generation, transport, and disposal of hazardous materials and waste are highly regulated. Federal and state laws and regulations also apply to airport safety and height restrictions near airports as described in Section 3.8.1.3 and below. A summary of key regulations and policies is presented below but it should not be considered to be a complete list of all potentially applicable regulations.

Federal

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

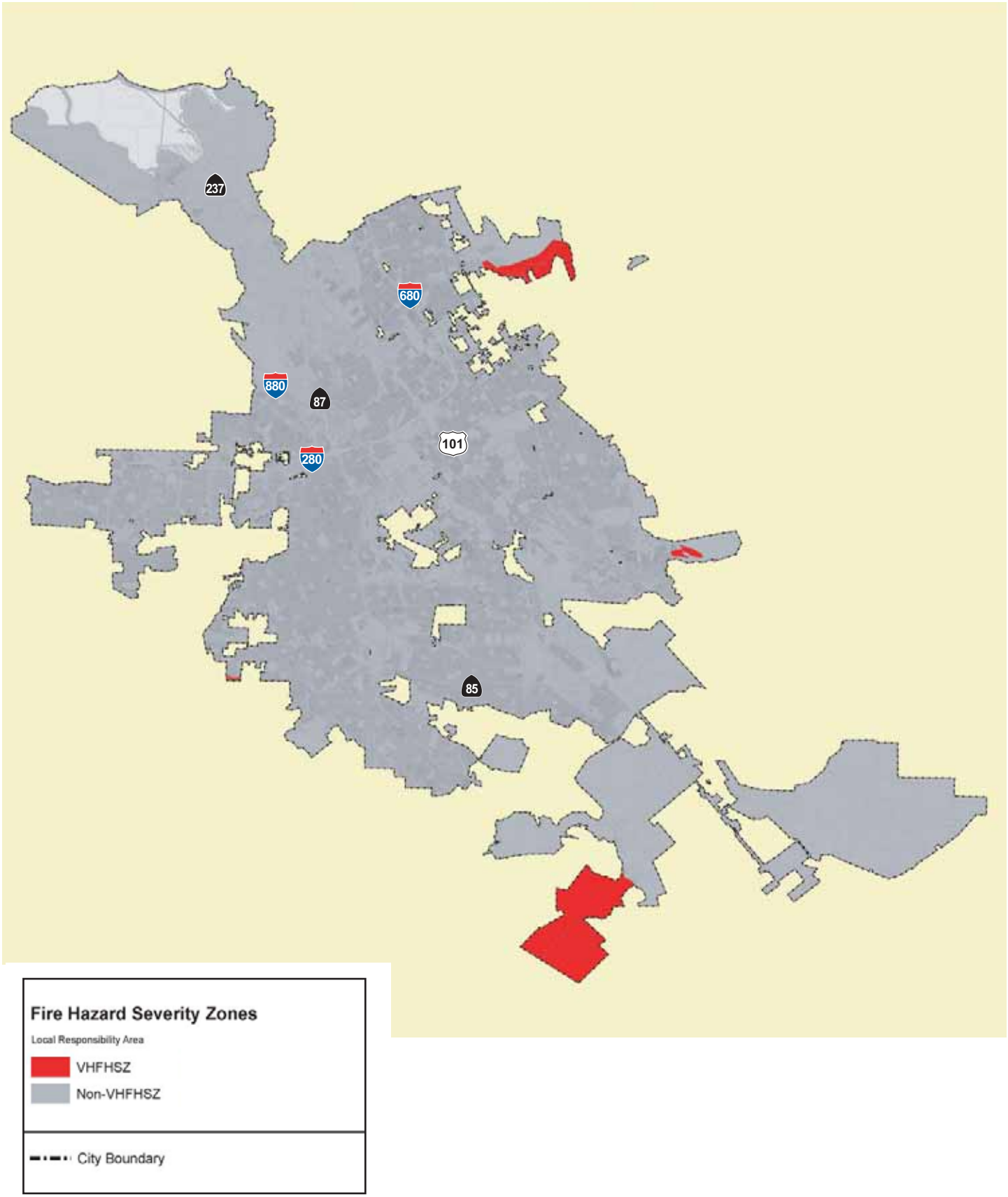
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress in 1980. This law provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous wastes at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986. The EPA maintains the National Priorities List of Superfund sites.

Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act (RCRA), initially authorized in 1976, gives the U.S. EPA the authority to control hazardous waste from "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled US EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Hazardous Materials Transportation Act (HMTA)

Transportation of chemicals and hazardous materials is regulated by the U.S. Department of Transportation (DOT) under the Hazardous Materials Transportation Act (HMTA). Hazardous materials regulations for the types of containers, labeling, record keeping, and other requirements for the commercial movement of materials are contained in the Code of Federal Regulations (CFR) Title 49. Transportation requirements vary with the hazard class of each hazardous material.



VERY HIGH FIRE HAZARD SEVERITY ZONES (VHFHSZ) FIGURE 3.8-3

Pipeline Safety

The Natural Gas Pipeline Safety Act of 1968 as amended (NGPSA) authorizes the federal Department of Transportation (DOT) to regulate pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of liquefied natural gas. Similarly, the Hazardous Liquid Pipeline Safety Act of 1979 as amended authorizes DOT to regulate pipeline transportation of hazardous liquids (crude oil, petroleum products, anhydrous ammonia, and carbon dioxide). Both of these Acts have been codified as 49 U.S.C. Chapter 601.

Federal pipeline safety regulations include minimum performance standards for pipeline safety as published in the Code of Federal Regulations, 49 CFR Parts 190-199. Regulations are enforced under a federal/state partnership (see State Fire Marshal, below).[108]

Federal Aviation Administration Regulations

Federal Aviation Administration (FAA) Regulations (Title 14 of the Code of Federal Aviation Regulations (Federal Aviation Regulations Part 77) sets standards for obstructions to airspace. In general, the FAA is responsible for administering these regulations. However, as owner/operator of the Norman Y. Mineta San José International Airport, the City is also required to comply with these and other FAA regulations and policies intended to protect the airport and aircraft in flight from incompatible land uses that potentially create hazards or constraints to airport operations. Refer to Section 3.8.1.3, Airports and Aircraft Safety, for additional discussion regarding building heights and regulations.

State of California

In California, the U.S. EPA has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA). In turn, local agencies including the San José Fire Department (SJFD) and the Santa Clara County Department of Environmental Health (SCCDEH) have been granted responsibility for implementation and enforcement of many hazardous materials regulations under the Certified Unified Program Agency (CUPA) program.

Other regional agencies are responsible for programs regulating emissions to the air, surface water, and groundwater. The Bay Area Air Quality Management District (BAAQMD) has oversight over air emissions, and the Regional Water Quality Control Board (RWQCB) regulates discharges and releases to surface and groundwater. Oversight over investigation and remediation of sites impacted by hazardous materials releases can be performed by state agencies, such as DTSC (a division of Cal/EPA), regional agencies, such as the RWQCB, or local agencies, such as SCCDEH. The SCCDEH oversees investigation and remediation LUST sites in San José. Other agencies that regulate hazardous materials include the California Department of Transportation and California Highway Patrol (transportation safety), and Cal/EPA Division of Occupational Safety and Health, better known as Cal/OSHA (worker safety).

[108] U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration. "State Programs". Accessed September 14, 2010. <http://www.phmsa.dot.gov/pipeline/state-programs>

Department of Toxic Substances Control (DTSC)

The DTSC regulates hazardous waste, remediation of existing contamination, and evaluates procedures to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning. From these laws and regulations, DTSC develops guidelines and regulations that define what those who handle hazardous waste must do to comply with the laws. As is the case with environmental risk management decisions, these rulemakings are subject to public review and comment.

DTSC implements protective cleanup programs and standards. An estimated 90,000 properties throughout the State - including former industrial properties, school sites, military bases, small businesses and landfills - are contaminated, or believed contaminated, with some level of toxic substances. Some of these are "brownfields," sites that often sit idle or underused, contributing to both urban blight and urban sprawl.

Statewide, DTSC oversees the cleanup of approximately 220 hazardous substance release sites at any given time and completes an average of 125 cleanups each year. An additional 250 sites are listed on DTSC's EnviroStor database of properties that may be contaminated. The Voluntary Cleanup Program and the Expedited Remedial Action Pilot Program encourage responsible parties to clean-up contaminated properties by offering economic, liability, or efficiency incentives. DTSC also encourages property owners to investigate and clean-up contamination if found, through a combination of low-interest loans.[109] The State Superfund covers sites for which there are no cleanup options through the responsible party and which threaten the people or the environment of California.

DTSC's Emergency Response Program provides immediate assistance during sudden or threatened releases of hazardous materials. Trained responders clean-up illegal drug labs and hazardous substance spills related to off-highway transportation and natural disasters.

In addition, DTSC continues to have lead responsibility for cleanup and enforcement at several high profile federal Superfund sites.

The U.S. Environmental Protection Agency (U.S. EPA) authorizes DTSC to carry out the Resource Conservation and Recovery Act (RCRA) program in California. Permitting, inspection, compliance, and corrective action programs help ensure that companies that manage hazardous waste follow state and federal requirements.

DTSC also oversees the implementation of the hazardous waste generator and on-site treatment program, one of the six environmental programs at the local level consolidated within the Unified Program. Seventy-two Certified Unified Program Agencies (CUPAs), which are generally part of the local Fire Department or Environmental Health Department, have authority to enforce regulations, conduct inspections, administer penalties and hold hearings. DTSC participates in the triennial review of the CUPAs so that their programs are consistent statewide, conform to standards and deliver quality environmental protection at the local level. This includes working closely with the CUPAs and providing technical assistance and training.

[109] The Investigating Site Contamination and Cleanup Loans and Environmental Assistance to Neighborhoods (CLEAN Loans) programs provide loans to investigate and clean-up urban properties.

DTSC's waste evaluation program assists in waste determinations to identify what substances and in what concentrations are harmful. The household hazardous waste and agricultural chemical collection programs focus on removing dangerous substances from homes and preventing their release into the environment through landfills, sewer systems and illegal dumping. DTSC also conducts a corrective action oversight program that assures any releases of hazardous constituents at generator facilities that conduct on-site treatment of hazardous waste are safely and effectively remediated.

State Water Resources Control Board (SWRCB)

The State Water Resources Control Board (SWRCB) was created by the Porter-Cologne Act (1967) and is responsible for the oversight of water rights, water pollution and water quality functions. The State is divided into nine regions, each with a Regional Water Quality Control Board. These agencies are authorized to adopt regional water quality control plans, prescribe waste discharge requirements, and perform other functions concerning water quality control within their respective regions. The City of San José is located in Region 2 (San Francisco Bay).

The San Francisco Bay Regional Water Quality Control Board oversees the unauthorized releases of pollutants to soils and ground water but in some cases also to surface waters or sediments. Sites that are managed by the San Francisco Bay Regional Water Quality Control Board include sites with pollution from recent or historical surface spills, subsurface releases (e.g., pipelines, sumps, etc.), and other unauthorized discharges that pollute or threaten to pollute surface and groundwater.
The State Water Code provides authority for the RWQCB to require investigation and cleanup of sites with unauthorized pollutant releases. The Water Code Section 13304 also authorizes the RWQCB to require technical reports from suspected dischargers, issue "cleanup and abatement" orders to dischargers, and recover costs for oversight of site cleanup. State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation, Cleanup and Abatement of Discharges Under Water Code Section 13304"; No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California"; and No. 88-63, "Sources of Drinking Water", contain the policies and procedures that all Regional Water Quality Control Boards shall follow to oversee and regulate investigations and cleanup and abatement activities resulting from all types of discharge or threat of discharge subject to Water Code Section 13304. The RWQCB also provides guidance on required cleanup at low risk fuel sites.

The RWQCB also oversees the discharge of storm water/urban runoff to the South San Francisco Bay. In 2009 it issued a Regional Municipal Stormwater NPDES for the entire Bay Area based in large part on an earlier joint NPDES Permit to Santa Clara County, the Santa Clara Valley Water District, and 13 of the cities within the County, including San José. This collection of municipalities and agencies formed an association called the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) to meet National Pollutant Discharge Elimination System (NPDES) permit regulations by sharing resources and collaborating on projects of mutual benefit. Program participants share a common permit to discharge storm water to South San Francisco Bay. To reduce pollution in urban runoff to the "maximum extent practicable", the program incorporates regulatory monitoring, "Industrial/Commercial Discharger Control" (referred to as "IND") inspections, and outreach measures aimed at improving the water quality of South San Francisco Bay and the streams of the Santa Clara Valley.

Certified Unified Program Agency (CUPA) Program

The CUPA program was created by Senate Bill 1082 (1993) to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for several environmental and emergency management programs. The unified program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The following six programs are administered locally under the State's Unified Program:

- The Hazardous Waste Generator (HWG) program and the Hazardous Waste Onsite Treatment activities authorized under the permit-by-rule, conditionally authorized, and conditionally exempt tiers – Health and Safety Code Division 20, Chapter 6.5 and California Code of Regulations, Title 22, Division 4.5;
- The Aboveground Storage Tank (AST) program Spill Prevention Control and Countermeasure Plan requirements – Health and Safety Code Division 20, Chapter 6.67, Section 25270.5(c);
- The Underground Storage Tank (UST) program – Health and Safety Code Division 20, Chapter 6.7 and California Code of Regulations, Title 23, Chapters 16 and 17;
- The Hazardous Materials Release Response Plans and Inventory (HMRRP) program – Health and Safety Code Division 20, Chapter 6.95, Article 1 and California Code of Regulations, Title 19, Sections 2620-2734;
- California Accidental Release Prevention (CalARP) program – Health and Safety Code Division 20, Chapter 6.95, Article 2 and California Code of Regulations, Title 19, Sections 2735.1-2785.1; and
- The Hazardous Materials Management Plans and the Hazardous Materials Inventory Statement (HMMP/HMIS) requirements – California Fire Code Title 24, Part 9, Sections 2701.5.1 and 2701.5.2

Some CUPAs have contractual agreements with another local agency, a "Participating Agency," that implements one or more program elements in coordination with the CUPA. The SCCDEH is the CUPA for the City of San José. Additionally, the SCCDEH oversees the management of medical waste in accordance with the Medical Waste Management Act (HSC Sections 117600 to 118360) and Santa Clara County Ordinance Code, Sections B11-260 to B11-268. Although not included within the CUPA program, the San José Fire Department also administers a local Hazardous Materials Storage Ordinance (San José Municipal Code Chapter 17.68) and Toxic Gas Ordinance (San José Municipal Code Chapter 17.78) which are discussed below under Local Hazardous Materials Ordinances. A summary of the state mandated hazardous materials programs and administering agencies for properties within San José is presented in Table 3.8-3.

Table 3.8-3
Hazardous Materials Programs and Administering Agencies for San José

Business Plans	Hazardous Waste	Tiered Permitting	USTs/ ASTs	CalARP	CA Fire Code	Hazmat Storage	Toxic Gases	Medical Waste
SCCDEH	SCCDEH	SCCDEH	SCCDEH	SCCDEH	SJFD	SJFD	SJFD	SCCDEH

State Fire Marshal

The Office of the State Fire Marshal (SFM) regulates the safety of approximately 5,500 miles of intrastate hazardous liquid transportation pipelines and acts as an agent of the federal Office of Pipeline Safety concerning the inspection of more than 2,000 miles of interstate pipelines. Pipeline Safety staff inspect, test, and investigate to ensure compliance with all federal and state pipeline safety laws and regulations. All spills, ruptures, fires, or similar incidents are responded to immediately and investigated for cause.[110] Hazardous liquid pipelines are also periodically tested for integrity using procedures approved by SFM. The program has been certified by the federal government since 1981.

The SFM is also one of five state organizations involved in overseeing the CUPA Program and assists with fire prevention and planning, including for wildland fire hazards.

California Public Utilities Commission (CPUC)

The CPUC's Utilities Safety and Reliability Branch (USRB) of the Consumer Protection and Safety Division was established to oversee the safety of electric, communications, natural gas, and propane gas systems. They enforce CPUC rules and regulations (including safety-related General Orders) and investigate and recommend ways to reduce utility related accidents. A major cause of accidents and interruptions of gas and electric service is damage to underground pipes and conduits during excavation. A state mandated service is available to mark the location of underground pipes, given notice two days before starting excavation.

Like the SFM, the USRB enforces federal pipeline safety regulations. The USRB administers its natural gas safety program by auditing the facilities of investor-owned natural gas utilities in California for compliance with applicable codes. The audit consists of reviewing operation and maintenance records, evaluating emergency procedures, and performing random field inspections of the natural gas facilities. Investor-owned utilities (such as PG&E) are generally audited once every two years; however, the utility may be audited more frequently depending on the results of the audit.[111]

Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) regulates and enforces workplace health and safety regulations established in Title 8 of the California Code of Regulations. Title 8 requirements protect workers from exposure to hazardous materials and contamination during demolition, excavation, and construction on development sites. Cal/OSHA regulations include procedures for safe handling of asbestos containing materials and lead-based paint during building demolition or renovation.

[110] Office of the State Fire Marshal. "Pipeline Safety Division". Accessed September 14, 2010. <http://www.osfm.fire.ca.gov/pipeline/pipeline.php>

[111] California Public Utilities Commission. "Natural Gas Safety Program". Accessed September 14, 2010. <http://www.cpuc.ca.gov/PUC/aboutus/Divisions/Consumer+Protection/Utilities+Safety+Branch/Natural+Gas+Safety/index.htm>

State Aeronautics Act - Caltrans Division of Aeronautics and County of Santa Clara ALUC

The California State Aeronautics Act [Public Utilities Code: Division 9, Part 1, Chapter 4, Article 3.5, Section 21670 et seq] requires the implementation and enforcement of the Comprehensive Land Use Plan (CLUP) by the local governmental agencies responsible for land use planning within each airport's Airport Influence Area (AIA). A CLUP contains policies and criteria that address compatibility between airports and future land uses that surround them by addressing noise, overflight, safety, and airspace protection concerns to minimize the public's exposure to excessive noise and safety hazards within the airport influence area for each airport over a 20-year horizon.

Once the ALUC has adopted a new or revised CLUP and transmitted that CLUP to an affected local agency, that local agency is mandated to incorporate the CLUP's provisions into its General and/or affected Specific Plan(s) within 180 days [Government Code 65302.3(b)]. The local agency is then required to adopt zoning ordinance(s) that implement the policies of their General/Specific Plan(s). If a local agency decides not to incorporate the CLUP policies verbatim in its General and/or Specific plans, it may overrule portions of the CLUP if it finds that its General and/or Specific Plan(s) are consistent with the State Aeronautics Act.

The proposed *Envision San José 2040 General Plan* will be referred to the Santa Clara County ALUC for determination of consistency.

Emergency Services Act

The California Emergency Services Act created the Office of Emergency Services to assign certain functions to state agencies and coordinate their actions during an emergency. In 2009, the state legislature merged the Office of Emergency Services with the Office of Homeland Security to form the California Emergency Management Agency. The California Emergency Management Agency administers the State Emergency Plan which describes the methods for carrying out emergency operations and the emergency services of governmental agencies, providing mutual aid, mobilizing resources, and informing the public in order to ensure continuity of government during an emergency or disaster. The plan is used in conjunction with local agency plans and operating procedures. The City of San José's Emergency Operations Plan includes standard operating procedures for flood events, heat waves, off-airport aviation accidents, power outages, terrorism, and urban/wildland interface fires.

Wildland-Urban Interface Fire Area Standards in the California Building Code

The 2007 California Building Code requires that any new buildings proposed in State Responsibility Areas, Local Agency Very-High Fire Hazard Severity Zone, or Wildland-Urban Interface Area (as designated by the enforcing agency) be constructed to meet the Wildland-Urban Interface Fire Area Building Standards. The California Building Code establishes minimum standards for materials and material assemblies in order to provide a reasonable level of exterior wildfire exposure protection for buildings in wildland-urban interface areas.[112]

[112] California Department of Forestry and Fire Protection. *Wildland Fire Protection*. Available at: <http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland.php>

City of San José

San José 2020 General Plan

Existing policies in the City of San José General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Relevant General Plan Policies that directly address reducing and avoiding hazardous materials and hazards impacts include the following:

- Hazardous Materials Policies #1-4
- Hazardous Waste Management Policies #1-9
- Fire Hazards Policies #1-7
- Transportation (Aviation) Policies #47, 48, and 49
- Hillside Development Policies #3, 13, and 18

Local Hazardous Materials Ordinances

In addition to the programs listed above, the San José Fire Department administers a local Hazardous Materials Storage Ordinance (San José Municipal Code Chapter 17.68) and Toxic Gas Ordinance (San José Municipal Code Chapter 17.78). The Storage Ordinance and the Toxic Gas Ordinance are stand alone ordinances developed to address specific safety needs in San José that were not adequately covered in previous state codes. The Storage Ordinance was first adopted in 1983, and the Toxic Gas Ordinance in 1990. At the time, they were the first attempt in the nation at providing some framework for regulation. Since then, a high percentage of the requirements in those ordinances have been adopted in national model codes and the International Fire Code.

Other Local Policies

Placement of daycare facilities, churches, schools and other sensitive developments in or near areas where hazardous materials are used or stored presents potential hazards. To address these potential hazards, the City of San José has developed the following guidance documents that are used during the development review and approval process (refer to Appendix H).

- Draft Guidelines for the Placement of Daycare Facilities, Churches and Schools in or adjacent to Industrial Zones
- Draft Guideline for Preparation of Risk Assessments
- Development Guideline for Land in Proximity to High Pressure Natural Gas Pipelines

There are certain uses of land or types of business (such as a hazardous materials storage or hazardous waste facilities) that may have an impact on their community. The City of San José controls such uses through the Conditional Use Permit process. These permits are approved by the Planning Commission and may be appealed to the City Council. As part of the Conditional Use Permit process, the San José Environmental Services Department (ESD) may be requested to review site-specific environmental documentation. When contamination is present on a site, the city reports this information to the appropriate agencies that regulate the cleanup of toxic contamination.

3.8.2 Thresholds of Significance

For the purposes of this PEIR, a hazardous materials or hazard impact is significant if implementation of the proposed *Envision San José 2040 General Plan* would:

- Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.8.3 Hazardous Materials and Hazards Impacts

Possible hazardous materials contamination that could adversely affect future development and redevelopment within the urbanized areas of San José are identified for the 13 Planning Areas and each of the planned growth areas (Villages, Employment Lands, and Specific Plan areas) in Appendix H (refer to Tables E1-E12). Other types of hazards to existing and future development in the City also include airport safety hazards and wildfire hazards near the urban/wildland interface. These conditions and relevant proposed General Plan policies are described below.

3.8.3.1 *Hazardous Materials Use and Potential for Accidental Releases*

The proposed General Plan allows for a greater mix of uses, including location of residential uses in proximity to businesses which could expose sensitive receptors to hazardous materials used, stored or disposed of as waste by industrial or in some cases, commercial, operations.

Hazardous materials presently stored and used in San José include flammable liquids, acids, toxic gases, and similar substances. Some of these substances are routinely transported and kept in large enough amounts that improper handling or an accidental spill or leak could result in off-site consequences that could adversely impact nearby workers or the public. Although hazardous materials are transported, stored and used throughout the City, the North San José, Alviso and portions of the Berryessa Planning Areas have an existing concentration of facilities that use toxic gases. Large, above ground propane or other fuel tanks are also present at several locations in the City and high pressure natural gas transmission lines extend through the San Felipe, Coyote,

Edenvale, Evergreen, Alum Rock, Central, South, Berryessa, and Alviso Planning Areas. Placement of additional sensitive receptors near facilities that could have an accidental release of a hazardous substance that would have off-site consequences, or conversely, location of a new industrial, commercial or institutional use that uses or stores toxic substances near sensitive receptors, could increase the risk of adverse health effects in the event of an accidental release. In addition to housing, it is likely that new sensitive receptors such as schools, day care centers, and assisted living facilities will be developed within Village, Corridor or Specific Plan Areas.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Impacts From Accidental Release of Hazardous Materials

The proposed *Envision San José 2040 General Plan* includes updated hazards policies that address proper hazardous materials use and storage and the proximity of sensitive uses to substantial hazards from accidental release of hazardous materials. Revisions to existing policies clarify that hazards reduction measures are required as a part of the City's development review process. Proposed General Plan Policies and Actions that provide program-level mitigation for risks associated with the use, storage, and disposal of hazardous materials within the City are identified below.

Hazardous Materials	
Policy EC-6.1	The City requires and shall continue to require all users and producers of hazardous materials and wastes to clearly identify and inventory the hazardous materials that they store, use or transport in conformance with local, state and federal laws, regulations and guidelines.
Policy EC-6.2	The City requires proper storage and use of hazardous materials and wastes to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal by businesses and residences. The City requires proper disposal of hazardous materials and wastes at licensed facilities.
Policy EC-6.4	All proposals for new or expanded facilities that handle hazardous materials that could impact sensitive uses off-site will be required to include adequate mitigation to reduce identified hazardous materials impacts to less than significant levels.
Policy EC-6.5	Transportation routes to and from hazardous waste facilities shall be designated by the City as part of the permitting process in order to minimize adverse impacts on surrounding land uses and to minimize travel distances along residential and other non-industrial frontages.
Policy EC-6.6	Environmental review for all proposals for new residential, park and recreation, school, day care, hospital, church or other uses that would place a sensitive population in close proximity to sites on which hazardous materials are or are likely to be located must address the likelihood of an accidental release, the risks posed to human health and for sensitive populations, and mitigation measures, if needed, to protect human health.
Policy EC-6.7	Land uses and development that use hazardous materials that could impact existing residences, schools, day care facilities, community or recreation centers, senior residences, or other sensitive receptors if accidentally released shall not be approved without the incorporation of adequate mitigation or separation buffers between uses.

Action EC-6.8	The City will use information on file with the County of Santa Clara Department of Environmental Health under the California Accidental Release Prevention (CalARP) Program as part of accepted Risk Management Plans to determine whether new residential, recreational, school, day care, church, hospital, seniors or medical facility developments could be exposed to substantial hazards from accidental release of airborne toxic materials from CalARP facilities.
Action EC-6.9	Adopt City guidelines for assessing possible land use compatibility and safety impacts associated with the location of sensitive uses near businesses or institutional facilities that use or store substantial quantities of hazardous materials by September 2011. The City will only approve new development with sensitive populations near sites containing hazardous materials such as toxic gases when feasible mitigation is included in the projects.
Action EC-6.12	Regulate new development on or in proximity to high pressure natural gas pipelines to promote public safety and reduce risks from land use incompatibility.
Community Health, Safety, and Wellness	
Policy CD-5.9	To promote safety and to minimize noise and vibration impacts in residential and working environments, design development that is proposed adjacent to railroad lines to provide the maximum separation feasible between the rail line and dwelling units, yards, or common open space areas, offices and other job locations, facilities for the storage of toxic or explosive materials and the like. To the extent possible, devote areas of development closest to an adjacent railroad line to use as parking lots, public streets, peripheral landscaping, the storage of non-hazardous materials and so forth. In industrial facilities, where the primary function is the production, processing or storage of hazardous materials, for new development follow the setback guidelines and other protective measures called for in the City's Industrial Design Guidelines when such facilities are to be located adjacent to or near a main railroad line.

Existing Regulations and Adopted Plans and Policies

Existing federal, state and local regulations and a City development guideline that would reduce or avoid possible hazards from accidental releases of hazardous materials include:

- Federal and California Pipeline Safety Regulations (Title 49, CFR and California Government Code, Section 51010-51019.1)
- California Health and Safety Code, Code of Regulations, RCRA, and CUPA Program (DTSC, Santa Clara County Department of Environmental Health)
- California Accidental Release Prevention (CalARP) Program
- City of San José Hazardous Materials Release Response Plans and Inventory
- City of San José Hazardous Materials Storage Ordinance and Toxic Gas Ordinance
- City of San José Building and Fire Codes
- Development Guideline for Land in Proximity to High Pressure Natural Gas Pipelines

Impact HM-1: New development and redevelopment allowed under the proposed General Plan could place sensitive uses in proximity to industrial, commercial or institutional hazardous materials users. An accidental release of hazardous materials that travels off-site or causes an explosion or fire could pose health or safety risks to these sensitive land uses. Implementation of proposed

policies for adequate mitigation or separation buffers between uses and existing regulations and adopted plans would substantially reduce hazards to people and the environment. **(Less Than Significant Impact)**

3.8.3.2 *Reported Hazardous Materials Releases and Existing Contamination*

Existing Soil, Soil Vapor and Groundwater Contamination

The presence of hazardous materials on future development and redevelopment sites could result in hazardous materials exposure of construction workers during the site preparation, demolition, and/or construction of new structures. Contaminated airborne dust could also migrate off-site during demolition or construction activities and affect adjacent land uses if improperly controlled.

Within San José a variety of chemical compounds associated with fuels, oil, flammable liquids, metals, pesticides or other hazardous substances originating from historical and/or current land uses may be found in soils that will be disturbed by future development or redevelopment. Releases of hazardous materials, such as volatile organic compounds and metals, into the environment could affect future residents or users through direct contact or, in the case of volatile organic compounds, inhalation of soil vapors. Contaminated groundwater, where encountered during site redevelopment activities, could result in potential health risks to construction workers or the public. If excavations extend to the groundwater table, dewatering could be required and extracted contaminated groundwater would require on-site management and/or treatment.

Several village or corridor areas are located near historic landfills or current landfills or other solid waste facilities. Hazards related to landfills for new development are primarily related to landfill gas moving through landfilled materials. There are reported land disposal sites in or within 1,000 feet of the Alviso Specific Plan Area, the North San José Employment Lands and East Gish Employment Lands areas, and near V57 and C33 in the Central/Downtown Planning Area.

Potentially hazardous environmental conditions from reported hazardous materials spills and releases are found in virtually all of the Planning Areas of the city. While a number of these reports represent cases considered closed by Responsible Agencies such as the Regional Water Quality Control Board, where there are changes in land uses or excavation into contaminated areas, a reevaluation of potential hazards and soil or groundwater management may be warranted.

Development and redevelopment allowed under the General Plan could occur on or near contaminated properties located throughout the City. Localized contamination of soil, soil vapor and ground water could adversely impact human health or the environment if not appropriately addressed and/or mitigated.

Hazards Associated with Building Materials

Remodel and repair activity, and demolition work in residential and commercial structures that disturbs asbestos-containing building materials may cause the release of asbestos fibers into the air, resulting in health impacts to workers, building occupants and the general public. There is no known health threat if asbestos-containing materials are in generally good condition and are left undisturbed.

Friable asbestos-containing material (i.e., material that can be crumbled, crushed or reduced to powder by hand pressure when dry) and non-friable asbestos-containing material that will be made

friable during renovation or demolition are subject to regulation. National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines require the removal of potentially friable asbestos-containing material prior to building demolition or renovation that may disturb these materials.

Demolition and renovation of buildings also have the potential to release lead particles to the air, resulting in health impacts to workers, building occupants and the general public. If demolition or renovation activities are planned, the removal of lead-based paint is not required if it is bonded to the building materials. However, if the lead-based paint is flaking, peeling, or blistering, it should be removed prior to demolition. In either case, applicable OSHA regulations must be followed; these include requirements for worker training, air monitoring and dust control, among others. Any debris or soil containing lead must be disposed appropriately.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Soil and Groundwater Contamination Impacts

The proposed *Envision San José 2040 General Plan* includes updated hazards policies that address soil and groundwater contamination. Revisions to existing policies clarify that hazards reduction measures are required as a part of the City's development review process. Proposed General Plan Policies and Actions that provide program-level mitigation for risks associated with the soil and groundwater contamination and hazardous building materials within the City are identified below.

Environmental Contamination	
Policy EC-7.1	For development and redevelopment projects, require evaluation of the proposed site's historical and present uses to determine if any potential environmental conditions exist that could adversely impact the community or environment.
Policy EC-7.2	Identification of existing soil, soil vapor, groundwater and indoor air contamination and mitigation for identified human health and environmental hazards to future users shall be provided as part of the environmental review process for all development and redevelopment projects. Mitigation measures for soil, soil vapor and groundwater contamination shall be designed to avoid adverse human health or environmental risk, in conformance with regional, state and federal laws, regulations, guidelines and standards.
Policy EC-7.3	Where a property is located near proximity of known groundwater contamination with volatile organic compounds or within 1,000 feet of an active or inactive landfill, the potential for indoor air intrusion of hazardous compounds shall be evaluated and mitigated to the satisfaction of the City's Environmental Compliance Officer and appropriate regional, state and federal agencies prior to approval of a development or redevelopment project.
Policy EC-7.4	On redevelopment sites, the presence of hazardous building materials shall be determined during the environmental review process or prior to project approval. Mitigation and remediation of hazardous building materials, such as lead-paint and asbestos-containing materials, shall be implemented in accordance with state and federal laws and regulations.
Policy EC-7.5	On development and redevelopment sites, all sources of imported fill shall have adequate documentation that it is clean and free of contamination and/or acceptable for the proposed land use considering appropriate environmental screening levels for contaminants. Disposal of groundwater from excavations on construction sites shall comply with local, regional, and state requirements.

Policy EC-7.7	Any development or redevelopment site that is within 1,000 feet of a known, suspected, or likely geographic ultramafic rock unit (as identified in maps developed by the Department of Conservation – Division of Mines and Geology) or any other known or suspected locations of serpentine or naturally occurring asbestos, shall determine if naturally occurring asbestos exists and, if so, comply with the Bay Area Air Quality Management District's Asbestos Air Toxic Control Measure requirements.
Action EC-7.8	Where an environmental review process identifies the presence of hazardous materials on a proposed development site, the City will ensure that feasible mitigation measures that will satisfactorily reduce impacts to human health and safety and to the environment are required of or incorporated into the projects. This applies to hazardous materials found in the soil, groundwater, soil vapor, or in existing structures.
Action EC-7.9	Ensure coordination with the County of Santa Clara Department of Environmental Health, Regional Water Quality Control Board, Department of Toxic Substances Control or other applicable regulatory agencies, as appropriate, on projects with contaminated soil and/or groundwater or where historical or active regulatory oversight exists.
Action EC-7.10	Require review and approval of grading, erosion control and dust control plans prior to issuance of a grading permit by the Director of Public Works on sites with known soil contamination. Construction operations shall be conducted to limit the creation and dispersion of dust and sediment runoff.
Action EC-7.11	Require sampling for residual agricultural chemicals, based on the history of land use, on sites to be used for any new development or redevelopment to account for worker and community safety during construction. Mitigation to meet appropriate end use such as residential or commercial/industrial shall be provided.

Existing Regulations and Adopted Plans and Policies

Existing federal, state and local regulations that would reduce or avoid possible contamination hazards include:

- Federal CERCLA or Superfund and California Health and Safety Code
- California Health and Safety Code, Code of Regulations, RCRA, and CUPA Program [Hazardous Waste Generator, Aboveground and Underground Storage Tank programs]
- Porter-Cologne Act, California Water Code
- California Code of Regulations [Cal/OSHA Worker Health and Safety Regulations]
- California Education Code Section 17210.1 and 17213.1 [Schools Property Evaluation and Cleanup]

Impact HM-2: New development and redevelopment allowed under the proposed General Plan could occur in areas with soil or groundwater contamination or involve demolition of buildings containing hazardous building materials. Implementation of proposed policies and existing regulations would substantially reduce hazards to people and the environment. **(Less Than Significant Impact)**

3.8.3.3 *Airport Hazard Impacts*

Mineta San José International Airport

Development is limited within safety zones identified for the Mineta San José International Airport (SJC). As previously described, the safety zones identified in the CLUP extend for approximately 8,000 feet north and south from the end of the runways (refer to Figure 3.8-1). Lands beneath the approach to the south end of the main runways are city-owned and cleared of structures. Populations within these safety zones are limited as described in Table 3.8-4. Within and beyond the safety zones, building height restrictions are in place within the arrival and departure flights paths to keep these areas clear of tall buildings that could interfere with aviation to ensure safety upon takeoff and during landing.

Portions of the Downtown Area and in the North San José Employment Lands near US 101 are within FAA Part 77 building height restriction zones of SJC. The Height Restriction Area in the CLUP also includes several planned Urban Villages (North First Street, The Alameda (West and East), San Carlos Street, Santa Clara Street, Five Wounds BART, Berryessa BART, William Street, and a portion of Stevens Creek). The proposed General Plan does not include specific height limits within intensification areas and future development is expected to result in some mid-rise and high-rise development within these areas. Development and redevelopment projects within the Height Restriction area are subject to building height requirements and airspace safety evaluations, as required by the FAA.

As noted in Table 3.8-4, future development in the Downtown, an Urban Village, and other properties can be accommodated within airport safety zones and height restriction zones, although uses, intensities and building heights will need to conform with conditions established within the CLUP and by the FAA.

Reid-Hillview Airport

The Reid-Hillview Airport, a General Aviation Reliever airport, is located at the northwest corner of Tully Road and Capitol Expressway in southeast San José. A vacant area designated for future intensification (VR 22) in the Evergreen Planning Area is located adjacent to, but outside of, the Inner Airport Safety Zone established for Reid-Hillview Airport in the Reid-Hillview Airport CLUP adopted in 2007. The Inner Airport Safety Zone is an area where uses should be limited to activities that attract relatively few people and there are no hazardous material facilities such as gasoline stations. In the Alum Rock Planning Area, one commercial corridor (C34 near Tully Road) and a village area (V52 along Capitol Expressway) are located within the airport's Traffic Pattern Safety Zone. There are no limits on residential uses in the Traffic Pattern Safety Zone. There are open area requirements for the entire zone (not individual properties) of approximately 10 percent.

Table 3.8-4
Safety Restriction Areas and Proposed Land Uses
Surrounding Norman Y. Mineta San José International Airport

Safety Zone	Density and Use Limitations	Proposed Land Use Designations	Conformance and Constraints
Inner	The Inner Safety Zone limits population density to 120 people per acre, requires 30 percent of the site area to be open and prohibits residential development. Non-residential uses are limited to those that do not involve concentrations of people or hazardous materials.	Light Industrial Open Space, Parklands and Habitat	The Light Industrial and Open Space, Parkland and Habitat uses can generally conform to these requirements.
Turning	The Turning Safety Zone limits population density to 200 people per acre, requires 20 percent of site area to be open, discourages residential use and prohibits some specific uses (e.g., hospitals, schools, shopping centers, etc.) and storage of hazardous materials.	Heavy Industrial Light Industrial Combined Industrial/Commercial, Employment Center Public Quasi-Public Urban Village (North First Street) Residential Neighborhood (existing)	Each of the proposed land use designations within the Turning Safety Zone support some uses that could meet these criteria. While the Village designation is intended to support intensification, the preparation of a Village Plan will allow the portion of the Urban Village within the Turning Safety Zone to be specifically planned for uses and intensities that meet CLUP requirements. The Residential Neighborhood designation is applied to an existing neighborhood not planned for further expansion. A planned soccer stadium near Coleman Avenue is within this zone. The ALUC found the stadium consistent with the previous land use plan for Santa Clara County Airports in March 2009.
Outer	The Outer Safety Zone limits population density to 300 people per acre, requires 20 percent of site area to be open, discourages residential use and prohibits some assembly uses and above ground fuel storage.	Employment Center Combined Industrial/Commercial Public/Quasi-Public and Downtown	The planned land uses are generally consistent with these parameters, although they may limit the intensification that can be achieved within the Employment Center and Downtown areas to densities at the lower end of the range supported by these designations. Residential development within the Downtown area within this Zone may be possible if it conforms with the conditions established within the CLUP. The Downtown designation also supports non-residential uses.

Note: There are three other safety zones listed in the CLUP. The *Runway Protection* and *Sideline Safety Zones* are primarily over Airport property. As noted in the CLUP, the potential for aircraft accidents in the *Traffic Pattern Zone* is relatively low and the need for land use restrictions is minimal.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Safety Impacts
Around Airport Facilities

The proposed *Envision San José 2040 General Plan* includes transportation policies that address maintaining safe operations in and around airport facilities in the San José. Proposed General Plan Policies and Actions that provide program-level mitigation for risks associated with airport operations within the City are identified below.

Safe Airport	
Policy TR-14.2	Regulate development in the vicinity of airports in accordance with Federal Aviation Administration regulations to maintain the airspace required for the safe operation of these facilities and avoid potential hazards to navigation.
Policy TR-14.3	For development in the vicinity of airports, take into consideration the safety and noise policies identified in the Santa Clara County Airport Land Use Commission (ALUC) comprehensive land use plans for Mineta San José International and Reid-Hillview airports.
Policy TR-14.4	Require avigation easement dedications, setting forth maximum elevation limits, as needed, as a condition of approval of development in the vicinity of airports.
Community Health, Safety and Wellness	
Policy CD-5.8	Comply with applicable Federal Aviation Administration regulations identifying maximum heights for obstructions to promote air safety.

Existing Regulations and Adopted Plans and Policies

Existing federal, state and local regulations that would reduce or avoid possible airport hazards impacts include:

- Federal Aviation Administration (FAA) Federal Aviation Regulations Part 77 [airspace standards for the design and construction of buildings in the vicinity of airports]
- State Aeronautics Act and California Public Utilities Code Sections 21658 and 21659 [regarding obstructions and airport safety].

Impact HM-3: New development and redevelopment allowed under the proposed General Plan could occur in areas subject to airport-related building height restrictions and other land use or density limitations. Implementation of the proposed policies and existing regulations would substantially reduce aviation hazards to people and property. **(Less Than Significant Impact)**

3.8.3.4 *Wildfire Hazards*

Within the City limits, very high fire hazard severity zones identified by the California Department of Forestry and Fire Hazard Protection are located in Alum Rock Park, east of The Villages Golf and Country Club in the Evergreen Planning Area and on both sides of Casa Loma Road in the Calero Planning Area (refer to Figure 3.8-3). All of these areas are outside the City's Urban Growth Boundary and none are located in Village, Corridor, Employment Lands or Specific Plan areas where intensified development and redevelopment with urban uses is planned. Limited new development,

such as park improvements or hillside development as allowed in the General Plan and zoning ordinance, could occur in these areas.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Impacts From Wildland Fires

The proposed *Envision San José 2040 General Plan* includes updated hazards policies that address development in very high fire hazard severity zones. Revisions to existing policies clarify that hazards reduction measures are required as a part of the City's development review process. Proposed General Plan Policies and Actions that provide program-level mitigation for risks associated with wildland fires within the City limits are identified below.

Wildland and Urban Fire Hazards	
Policy EC-8.1	Minimize development in very high fire hazard zone areas. Plan and construct permitted development so as to reduce exposure to fire hazards and to facilitate fire suppression efforts in the event of a wildfire.
Policy EC-8.2	Avoid actions which increase fire risk, such as increasing public access roads in very high fire hazard areas, because of the great environmental damage and economic loss associated with a large wildfire.
Policy EC-8.3	For development proposed on parcels located within a very high fire hazard severity zone or wildland-urban interface area, continue to implement requirements for building materials and assemblies to provide a reasonable level of exterior wildfire exposure protection in accordance with City-adopted requirements in the California Building Code.
Policy EC-8.4	Require use of defensible space vegetation management best practices to protect structures at and near the urban/wildland interface.
Hillside Development Hazard Avoidance	
Policy LU-18.1	Allow development in hillside areas only if potential danger to the health, safety, and welfare of the residents, due to landslides, fire, or other environmental hazards, can be mitigated to an acceptable level as defined in State and City ordinances and policies. Demonstrate that all new development will not result in significantly increased risks associated with natural hazards.

Existing Regulations and Adopted Plans and Policies

Existing state and local regulations that would reduce or avoid possible urban-wildland fire hazards include:

- Wildland-Urban Interface Fire Area Standards in the California Building Code
- City of San José Building and Fire Codes

Impact HM-4: Under the proposed General Plan, only limited new development could occur in or adjacent to very high fire hazard severity zones within the City limits. The focus of allowed new development and redevelopment would be within the City's Urban Growth Boundary and away from the urban-wildland interface. Implementation of proposed policies and existing regulations

would substantially avoid exposure of people or structures to a significant risk of loss, injury or death involving wildland fires. **(Less Than Significant Impact)**

3.8.3.5 *Siting Considerations For Electrical Transmission Lines*

Implementation of the proposed General Plan would result in considerable population and employment growth and that growth could result in the need for new electrical infrastructure including transmission lines and electrical substations.

Electro-Magnetic Fields (EMF)

EMFs are invisible fields of force created by electric voltage (electric fields) and by electric current (magnetic fields). Wherever there is a flow of electricity, both electric and magnetic fields are created; in appliances, homes, schools and offices, and in power lines. The California Public Utility Commission (CPUC) and the California Department of Health Services have not concluded that exposure to magnetic fields from utility electric facilities is a potential health hazard. Nonetheless, in accordance with the CPUC's EMF Decision (D.93-11-013) and PG&E's Transmission and Substation EMF Design Guidelines prepared in accordance with that decision, PG&E incorporates "no cost" and "low cost" magnetic field reduction steps in the design of new transmission and substation facilities. The design guidelines include the following measures that would be available to reduce the magnetic field strength levels from electric power facilities:

- Increase the height of overhead lines to reduce EMF strength at ground level
- Reduce conductor spacing to increase cancellation of the magnetic field and decrease the resultant field strength
- Minimize current through energy efficiency measures (adequate load compensation will be provided by using capacitors)
- Optimize phase configuration by "cross-phasing" individual circuits to cancel magnetic fields

The EMF Decision and PG&E's Guidelines require PG&E to prepare an EMF Field Management Plan ("FMP") that specifically delineates the no-cost and low-cost EMF measures that will be installed as part of the final engineering design for a project. PG&E will submit the final FMP to the CPUC prior to any construction activity, and will make it available to the public upon request. PG&E also relies on organizations and health agencies such as the California Department of Health Services, U.S. Environmental Protection Agency and the Electric Power Research Institute to review research on EMF and provide a foundation for developing policies. Development of new electrical transmission lines in accordance with individual FMPs would not result in substantial new EMF exposures or hazards to the public.

3.8.3.6 *Impacts of Rancho del Pueblo and iStar Residential Options*

As discussed in Section 2.2.8 in the Project Description, this PEIR also evaluates options for residential land use designations and anticipated future development on two properties; the Rancho del Pueblo Golf Course in the Alum Rock Planning Area and the iStar property in the Edenvale Planning Area (Residential Option Sites). Under these options one or both of these properties would be designated for residential uses instead of the industrial uses assumed on the iStar property and the park/open space on the existing Rancho del Pueblo Golf Course. Because these options also include

changes to other Growth Areas to balance the jobs and dwelling units, the overall amount of development capacity assumed under the Preferred Scenario would not change citywide.

A comparison and summary of hazards and hazardous materials impacts for the residential options is shown in Table 3.8-5. Implementation of the updated General Plan that includes one or both of the residential options for the Rancho del Pueblo and iStar sites would have impacts similar to those from the proposed project.

Table 3.8-5
Hazardous Materials Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance [1]
HM-1	Hazardous Materials Use and Potential for Accidental Releases	Like the proposed project, new development and redevelopment could place sensitive uses in proximity to industrial, commercial or institutional hazardous materials users. A high pressure natural gas line is also located within Monterey Road, near the iStar site. Implementation of proposed policies for adequate mitigation or separation buffers between uses and existing regulations and adopted plans would substantially reduce hazards to people and the environment.	same (LTS)
HM-2	Reported Hazardous Materials Releases and Existing Contamination	Neither site is listed as a former landfill or as a site where known soil or groundwater contamination is present. Like other vacant urban sites, some hazards related to building materials or use of persistent pesticides may be present.	same (LTS)
HM-3	Airport Hazard Impacts	Neither site is located within the airport referral zone or safe zones for Norman Y. Mineta San José International Airport or Reid Hillview Airport.	Same (LTS)
HM-4	Wildfire Hazards	Neither site is located in a very high fire hazard severity zone.	same (LTS)
Other	Siting Considerations for Electrical Transmission Lines	Overall population and employment would remain the same as the proposed project and the need for new electrical infrastructure (transmission lines and substations) would be similar.	

[1] S= Significant; LTS = Less Than Significant
The determination of significance assumes implementation of proposed General Plan policies and actions and existing regulations and adopted plans and policies previously identified throughout Section 3.8.3 Hazardous Materials and Hazards Impacts.
Bold = New Significant Impact

3.8.4 Mitigation and Avoidance Measures for Hazardous Materials and Hazards Impacts

3.8.4.1 *Proposed General Plan*

No mitigation measures are required.

3.8.4.2 *Rancho del Pueblo and iStar Residential Options*

No mitigation measures are required.

3.8.5 Significance Conclusions

3.8.5.1 *Proposed General Plan*

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions and existing regulations would result in less than significant hazardous materials, airport safety, and wild land fire hazards impacts and no mitigation measures are required. **(Less Than Significant Impacts)**

3.8.5.2 *Rancho del Pueblo and iStar Residential Options*

Implementation of the proposed *Envision San José 2040 General Plan* with the Rancho del Pueblo and iStar Residential Options in accordance with existing regulations, proposed policies, and actions would result in less than significant hazardous materials, airport safety, and wild land fire hazards impacts and no mitigation measures are required. **(Less Than Significant Impacts)**

3.9 PUBLIC FACILITIES AND SERVICES

3.9.1 Existing Setting

3.9.1.1 *Fire Protection*

Fire protection services in San José are provided by the San José Fire Department (SJFD). The SJFD responds to all fires, hazardous materials spills, and medical emergencies (including injury accidents) in the City. The SJFD senior command structure consists of a Fire Chief, an Assistant Fire Chief, three Deputy Chiefs, and three Deputy Directors. The SJFD itself consists of six Bureaus: Field Operations; Fire Prevention; Administrative Services; Support Services; Emergency Medical Services (EMS) & Training; and the Office of Emergency Services. Emergency response is provided by 30 engine companies, nine (9) truck companies, one (1) urban search and rescue (USAR) company, one (1) hazardous incident team (HIT) company, and numerous specialty teams and vehicles.

The SJFD protects 206 square miles (178 square miles incorporated) and approximately 1.2 million residents (City and county areas). As of August 2010, the SJFD included approximately 660 authorized sworn personnel, 40 non-sworn uniformed Fire Communication Dispatchers, and 64 civilian personnel.[113] There are currently 33 active fire stations in the City. A map showing the locations of the existing 34 fire stations is provided in Figure 3.9-1. Fire Station 33 was closed in August 2010 due to budgetary constraints.

In 2002, San José voters approved the Neighborhood Security Act Bond Measure which allowed for the construction of four new fire stations, relocation of six fire stations, remodeling of 16 fire stations and enhancing fire training facilities to implement the SJFD Strategic Plan. Most of the remodeling or rebuilding of stations has been completed; all stations scheduled for relocation are in design, construction, or have been completed; all new fire stations are in design, construction, or have been completed. Five stations are currently in the process of being rebuilt, relocated, and/or constructed. Once the additional facilities included in the bond measure are complete the SJFD will have a total of 36 fire stations to serve San José residents.

For fire protection, the existing General Plan identifies a goal of having a four-minute average response time to all calls. It is the SJFD's goal not to exceed four minutes for the "first response" and six minutes for the "second response" times. The SJFD employs two standards to measure service performance: *travel time* and *total reflex time.* Travel time is a measure of the period of time from when a responding emergency fire apparatus leaves the fire station until it arrives at the scene of the emergency. Total reflex time refers to the amount of time that passes from receipt of the emergency call by the Emergency Communications Dispatching Center to the arrival of the responding unit at the emergency scene. Travel times and total reflex times, evaluated both individually and together, represent the more accurate measure of the level of service being provided to the community.

[113] City of San José Fire Department. "Fast Facts." Accessed August 3, 2010 and updated per personal discussion with Ivan Lee, Fire Marshall, November 18, 2010. <http://www.sjfd.com/FastFacts/fastfacts.asp>

The City's level of service standard for emergency medical services and fire protection services establishes a maximum travel time performance standard of four minutes for first engine response, and six minutes for the second engine and first truck/Urban Search and Rescue (USAR) responses. The four minute response is expected to be achieved 80 percent of the time. The performance standard for total reflex time is eight minutes for the first-due apparatus, 80 percent of the time. Table 3.9-1 shows the standards for travel and total reflex times.

Table 3.9-1
Standards for Travel and Total Reflex Times

Unit	Travel Time (min)	Total Reflex Time (min)
1st Engine	4	8
2nd Engine	6	10
1st Truck/USAR	6	10
1st Battalion Chief	9	13
3rd Engine	6	10
2nd Truck/USAR	11	15
2nd Battalion Chief	11	15

Note: Response and reflex times are for fires in buildings of less than four stories.
Source: City of San José Fire Department, Bureau of Support Services. *Standards for Travel Times and Total Reflex Times for Fires in Buildings of Less Than 4 Stories*. Table. November 17, 2003.

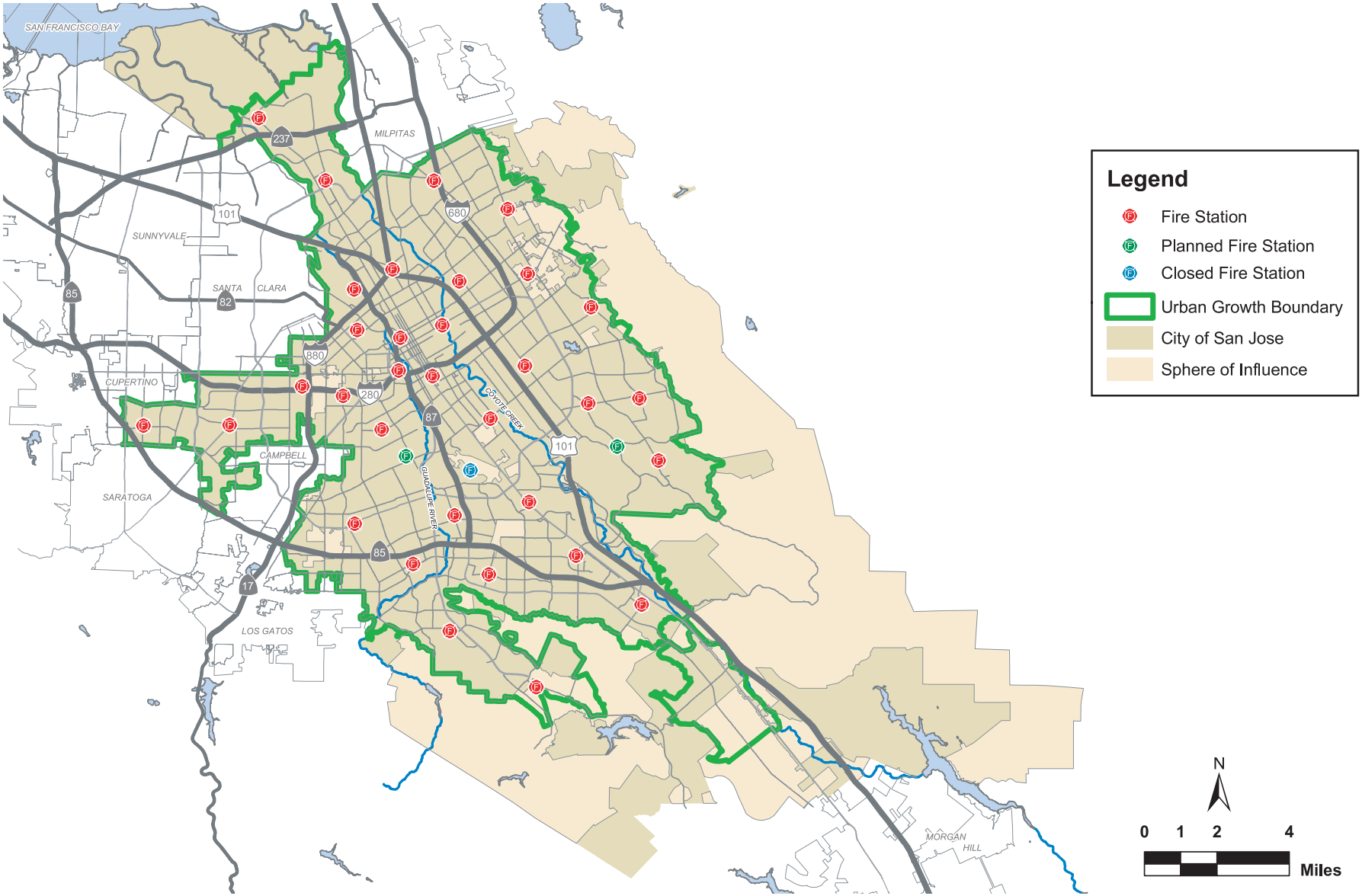
In fiscal year 2007-2008, the overall department compliance rate for achieving four-minute travel times was 67.5 percent. The primary causes for this sub-optimal performance for calls are: 1) some station districts have excessively high call volumes resulting in simultaneous requests for service requiring the next closest available unit to respond, increasing reflex times and 2) some other stations have very large service areas, which cannot be traversed within the four minute travel time goal.[114] Potential solutions to address these issues are focused on adding and rearranging response capacity to locate resources for maximum effectiveness. The Fire Department Strategic Plan and the new facilities included in the Neighborhood Security Act Bond Measure are intended to help improve response times.

In addition to the San José 2020 General Plan service goals, the Fire Department measures services by additional standards for response times, which are determined by the nature of the fire emergency call, either Priority 1 (emergency) calls or Priority 2 (non-emergency) calls. In fiscal year 2008-2009, compliance with the goal of arrival within eight (8) minutes for a Priority 1 call remained unchanged from the previous year at 79 percent. For Priority 2 calls, compliance with the Fire Department goal of arrival within 13 minutes was 99 percent in fiscal year 2007-2008.

In 2007-2008, approximately 84 percent (43,784 calls) of the emergency calls received by the SJFD were medically-related, 10 percent (5,418 calls) were classified as miscellaneous, and the remaining six percent (3,185 calls) were fire-related.[115] Not counted in this breakdown were the approximately 16,000 non-emergency medical calls that the Fire Department responded to in 2007-2008.

The City of San José participates in the Automatic Aid and Mutual Aid programs. San José, Santa Clara, Milpitas, and the Santa Clara County Fire Department are all members of the Automatic Aid program. This program allows the station closest to the scene of the fire, when available, to respond to the scene first. Therefore, neighboring departments can work together to reduce reflex and response times. The Mutual Aid program is a countywide program. When a developing fire overburdens one department, other departments will send the necessary assistance to reduce the burden.

[114] City of San José. *Draft Envision San José 2040 General Plan Update Analysis of San José's Fiscal Conditions and Projections of Future Scenarios*. February 12, 2010.
[115] City of San José Fire Department. "SJFD Response by Company: Fiscal Year 2007-2008." Accessed May 3, 2010. <http://www.sjfd.org/Stats/0708Company.asp>



LOCATION MAP OF SJFD STATIONS

FIGURE 3.9-1

3.9.1.2 *Police Protection*

Police protection services in San José are provided by the City of San José Police Department (SJPD). The SJPD is administered by a command staff including the Chief, Assistant Chief and four Deputy Chiefs, presiding over an Operations Command divided into four Bureaus: the Bureaus of Administration, Field Operations, Investigations, and Technical Services. The Bureaus are comprised of 11 divisions with over 67 specialized units and assignments. The SJPD employs over 1,300 sworn officers.[116]

Officers patrolling the City are dispatched from police headquarters, located at 201 West Mission Street. The City has four patrol divisions, which consist of a total of 16 patrol districts. The patrol districts consist of 83 patrol beats, and the patrol beats consist of 357 patrol beat building blocks.

The City has constructed a Police substation at Great Oaks Boulevard and Brooklyn Avenue in south San José. This substation will include a variety of components/services including office of the chief; Bureaus of Administration, Field Operations, Investigations, and Technical Services; community services; victim witness and rape crisis programs; locker rooms; fitness facilities; and other related City offices. Due to budgetary constraints, it is anticipated that this substation will not open until September 2011.

The SJPD also has three community policing centers located in Alviso, at Oakridge Mall in the Edenvale Planning Area, and on Williams Road in the West Valley Planning Area.

The existing General Plan identifies a response time goal of six minutes or less for 60 percent of all Priority 1 calls, and 11 minutes or less for 60 percent of all Priority 2 calls.

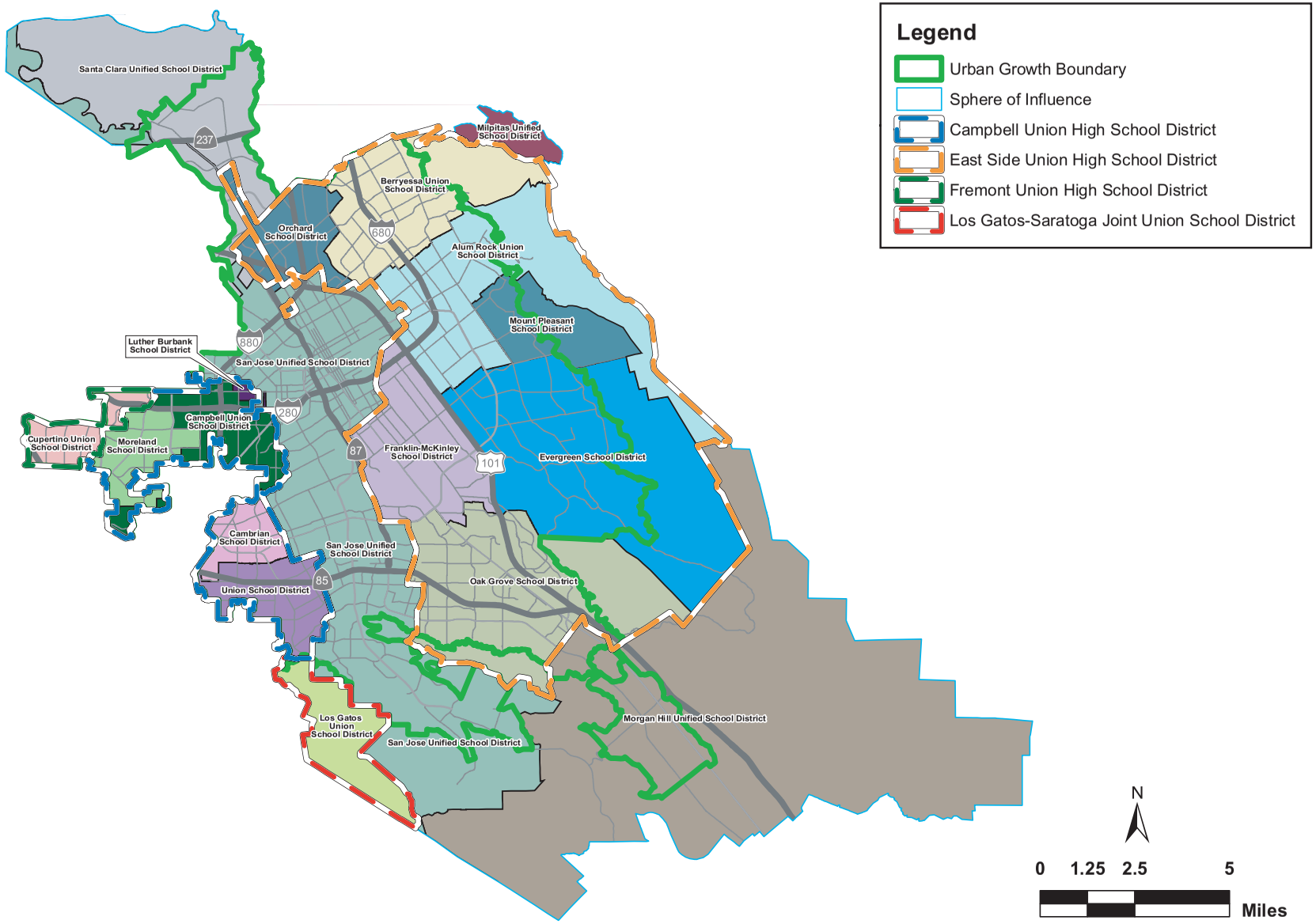
In 2009, the City had 22,755 reported property crimes, 3,439 reported violent crimes, 2,867 domestic violence calls, and 43 reported hate crimes.[117]

3.9.1.3 *Schools*

The City of San José includes 22[118] public school districts that currently operate 222 public schools serving students in San José. Approximately 23 additional schools within these districts are currently vacant or leased. The districts and number of schools serving San José, the enrollment within each district for the 2008-2009 school year, and the currently available capacity are shown in Table 3.9-2. The school district boundaries are shown graphically in Figure 3.9-2. Based on the school district boundaries and locations of schools within the districts, some students living in San José attend school in adjacent jurisdictions.

As of the 2008-2009 school year, there is excess capacity available within all of the local districts combined to serve students in San José. However, the planned Growth Areas depending on their location may be served by schools with inadequate capacity. Capacity information for each of the

[116] City of San José Police Department. "Inside SJPD – Department Information." July 28, 2010. Accessed August 2, 2010. <http://www.sjpd.org/InsideSJPD/>
[117] City of San José Police Department. "Official Crime Statistics." March 5, 2010. Accessed May 3, 2010. <http://www.sjpd.org/CrimeStats/crimestats.html>
[118] A portion of the Milpitas Unified School District is within the City's Sphere of Influence but outside the Urban Growth Boundary and is not anticipated to serve additional students under the proposed Envision San José 2040 General Plan.



SCHOOL DISTRICT BOUNDARIES

FIGURE 3.9-2

school districts is based on information provided to the City of San José by those districts. Where no response from a school district was received by the City capacity information was based on publicly available information for the schools assumed to serve the planned Growth Areas.

Table 3.9-2
School Districts Serving San José

District	Number of Schools and Type	Enrollment	Existing Capacity	Available Capacity
Alum Rock Union	18 elementary 6 middle	13,028	17,340	4,312
Berryessa Union	10 elementary 3 middle	8,336	8,408[1]	72
Cambrian	4 elementary 1 middle	3,262	3,550	288
Campbell Union	9 elementary 3 middle	7,263	7,341[1]	78
Campbell Union High	6 high	7,690	7,316[1]	-374
Cupertino Union[2]	13 elementary 4 middle	11,665	11,377[1]	-288
East Side High	12 high	24,712	24,502	-210
Evergreen	15 elementary 3 middle	13,375	13,403[1]	28
Franklin-McKinley	15 elementary 2 middle	10,302	10,436	134
Fremont Union	5 high	10,219	8,970	-1,219
Los Gatos Union[2]	1 elementary 1 middle	1,580	1,554[1]	-26
Los Gatos-Saratoga Joint Union[2]	1 high	1,803	1,664[1]	-139
Luther Burbank	1 elementary	576	482[1]	-94
Moreland	5 elementary 1 middle	4,066	4,253	187
Morgan Hill Unified[2]	1 elementary 1 middle 1 high	2,847	2,528[1]	-319
Mount Pleasant Elementary	4 elementary 1 middle	2,963	2,912[1]	-51

Table 3.9-2
School Districts Serving San José

District	Number of Schools and Type	Enrollment	Existing Capacity	Available Capacity
Oak Grove	16 elementary 3 middle	11,611	13,920	2,309
Orchard	1 elementary	830	1,150	320
San José Unified	27 elementary 6 middle 9 high	31,524	30,520[1]	-1,004
Santa Clara Unified[2]	4 elementary 1 high	3,997	4,158	161
Union	6 elementary 2 middle	4,733	5,000	267
	Totals	176,382	180,784	4,382

Notes: [1]Based on a ten year average from CA Dept of Education, Educational Demographics Unit.
[2]School district contains additional schools not currently serving students in San José.

3.9.1.4 *Parks and Recreation*

Parks

The City provides and maintains developed parkland and open space to serve its residents. The City's Departments of Parks, Recreation, and Neighborhood Services is responsible for the development, operation, and maintenance of all City park facilities.

The City of San José manages a total of 3,435 acres[119] of regional and neighborhood/community serving parkland. Park facilities vary in size and amenities. The city classifies parks as neighborhood-serving/community and regional. The City owns 180 neighborhood-serving parks and nine regional parks.

- Neighborhood/Community Parks may include amenities that serve the immediate or nearby neighborhood. They may include but are not limited to the following amenities: playgrounds, water features, dog parks, horseshoe pits, softball/baseball fields, soccer fields, tennis courts, basketball courts, handball courts, volleyball courts, bocce ball courts, and exercise and par courses.
- Regional Parks attract visitors from throughout the Bay Area and may include larger or unique amenities: access to a native open space, cultural heritage buildings, landscaped gardens, festival sites for large community events, and lakes.
- Open Space lands are those lands managed by the City, or another public agency, which are open to the public for recreation usages, which do not require a formalized delineated playing field or turf areas, where picnicking, fishing, non-motorized boating, bicycling, horseback riding and

[119] Only existing parks are included in the above cited acreage. Secured or potential parks, which total approximately 118 acres, are not included in this total. (Source: City of San José. *Greenprint 2009 Update for Parks, Recreation Facilities and Trails.* December 2009.)

permitted environmental education programs or renovation projects for viewing of natural habitats-type land are allowed.

Figure 3.9-3 shows the location of parks, recreational lands, and community centers in the City.

In 2000, San José voters approved the Safe Neighborhood Parks and Recreation Bond for the purpose of renovating park improvements and recreation facilities, besides constructing some trails throughout the City. As of June 2009, improvements had occurred at 69 neighborhood and five regional parks. The bond also supported construction of seven community centers and completion of three trail projects. The largest improvement project in the bond program was Happy Hollow Park and Zoo which reopened in March 2010. Construction of two sports complexes, two community centers and one trail project (scheduled completion is December 2010) remain to be completed under the approved bond program.

Table 3.9-3 summarizes the City's existing parkland acreage and level of service (i.e., number of acres per 1,000 population), and the City's existing General Plan level of service goals. As outlined in the table below, based on the existing General Plan goals, the City has sufficient neighborhood/ community and combined City and other Citywide/regional parkland. [120] However, the City is deficient in school recreation and City-owned Citywide/regional parkland.

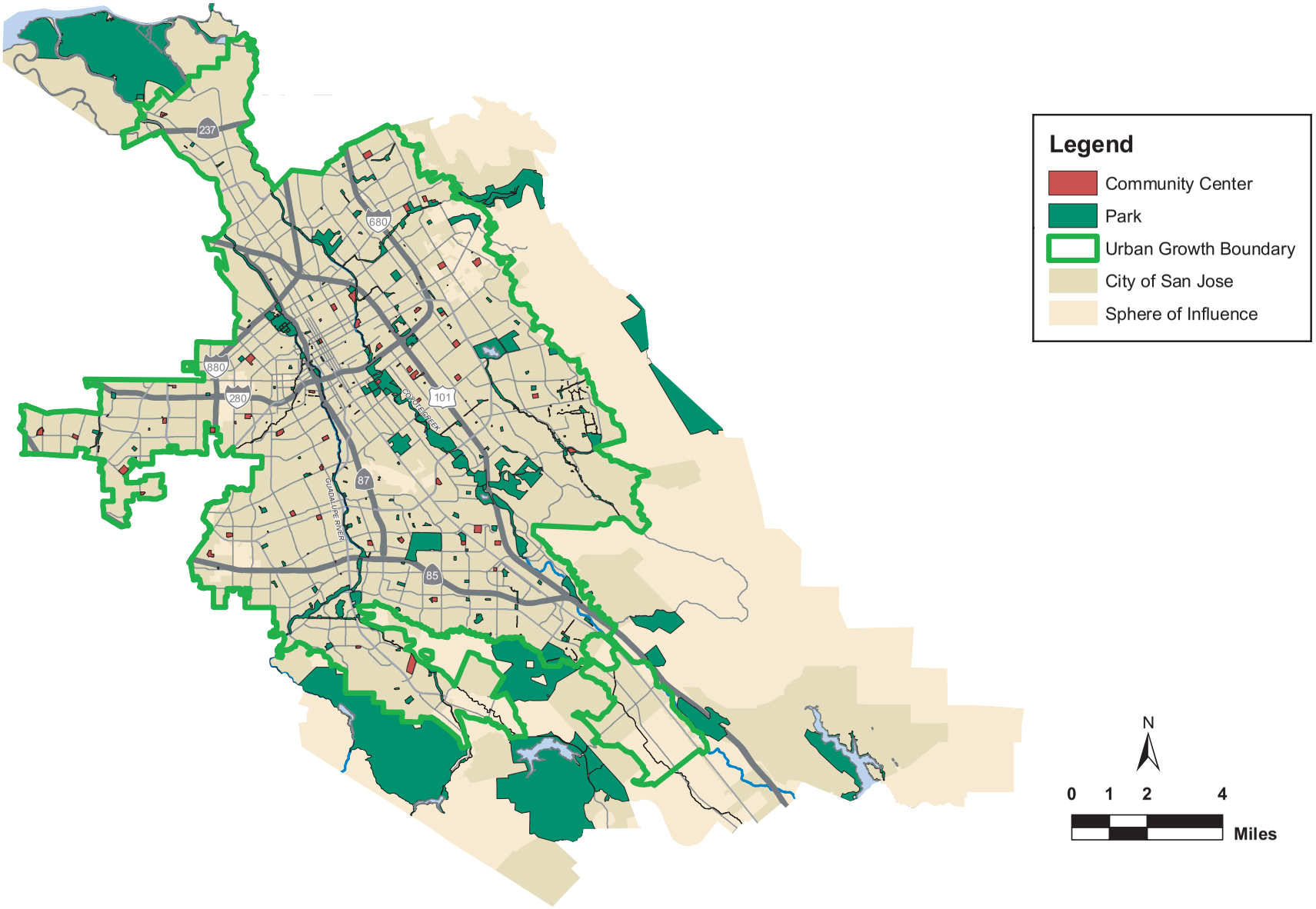
Table 3.9-3
City Parkland Existing Conditions and 2020 General Plan Goals

Description	Existing Conditions		2020 General Plan		Current Surplus/ Deficit (acres)
	Area (acres)	Service Level (acres/1,000 population)	Service Level Goal (acres/1,000 population)	Area Required to Meet Goal (acres)	
Neighborhood/Community Serving Parkland (City-owned)	1,586.9	1.6	1.5	1,459.5	+127.4
Recreational School Grounds	1,334.2	1.4	2.0	1,946.0	-611.8
City-owned Parkland and Recreational School Grounds Combined	2,921.1	3.0	3.5	1,946.0	-484.4
Citywide/Regional Parkland (City-owned)	1,848.5	1.9	7.5	7,297.5	-5,449.0
City and other Citywide/ Regional Parkland Combined	17,348.5[1]	17.8	7.5	7,297.5	+10,051.0

Source: City of San José. *Greenprint 2009 Update for Parks, Recreation Facilities and Trails*. December 2009.
Notes: [1]Includes 1,848.5 acres of City-owned regional parkland.

The 2020 General Plan service level objective for neighborhood/community serving parkland is 3.5 acres of land per 1,000 population, of which a minimum is 1.5 acres of City-owned parkland and up to two acres of recreational school grounds, is located within a reasonable walking distance. In order to meet the 2020 General Plan service level objective of 7.5 acres per 1,000 population for citywide/regional parklands within the City's boundaries, the City partners with the Santa Clara

[120] Other Citywide/regional parkland includes County, Open Space Authority and the Don Edwards National Wildlife Refuge.



LOCATION MAP OF PARKS, RECREATIONAL LANDS, AND COMMUNITY CENTERS

FIGURE 3.9-3

County Parks Department and the Santa Clara County Open Space Authority and the Don Edwards National Wildlife Refuge to provide such regional parks and open space lands.

Community Centers and Recreational Facilities

Other public services within the City that are important to the quality of life of its residents include community centers, senior centers, and youth centers. The City currently has a total of 25 community centers. The City has a total of 12 senior centers and 14 youth centers. Due to budget problems, the City as of 2010-2011 has temporarily closed some of these facilities. The City's service level objective for Community Center square footage is 500 square feet per 1,000 residents. The City's current service level is 601 square feet per 1,000 residents which meets the General Plan objectives. The community center locations are shown in Figure 3.9-3.

The City also has six public skate parks, including California's largest skate park at Lake Cunningham Regional Skate Park. This skate park was one of two hundred projects funded since the year 2000 by the Bond Program and other funding sources.

All of the City-owned, developed and managed park and recreational facilities are within the City limits, except for the San José Family Camp, which is located in the Stanislaus National Forest near Yosemite National Park. These parks and facilities are within the Urban Service and Urban Growth Boundary with the exception of Alum Rock Park and San José Family Camp.

Trail Network

In addition to the recreational facilities discussed above, the City has over 54 miles of trails. A map of the Trail Network is provided in Figure 3.9-4. The trail systems are accessible to pedestrians, bicyclists, and/or equestrians. The *Core Trail Systems* carry higher volumes of traffic due to adjacency or access to high density development and extend significant distances or link to regional systems outside the City's boundaries. They typically link housing to employment and therefore support commuting:

- Coyote Creek
- Guadalupe River
- Los Alamitos Creek
- Los Gatos Creek
- Highway 87 Bikeway
- Highway 237 Bikeway

Edge Trail Systems often link to the core systems, but function as neighborhood collectors or offer a more recreational function.

The combined Core and Edge systems form the City's overall Trail Network. This network is accessed from on-street bikeways. The City's 2020 Bike Plan defines a 400 mile system of bikeways. The combined Trail Network and Bikeways form the City's 500-mile *BikeWeb*.

The City has 54 miles of open trails. Per the Green Vision, it is seeking to develop 3.3 miles per year on average to complete the 100-mile Trail Network by 2022. The actual number of miles delivered each year fluctuates based on funding, design, planning and other factors.

TRAIL MAP

FIGURE 3.9-4

San José's distributed Trail Network is already accessible to all residents. An analysis of alignments to residential developments shows that all residents may access a trail within 3 miles of home.[121] Continued work to extend existing trails and close gaps will make the trail system more appealing and functional to residents.

3.9.1.5 *Libraries*

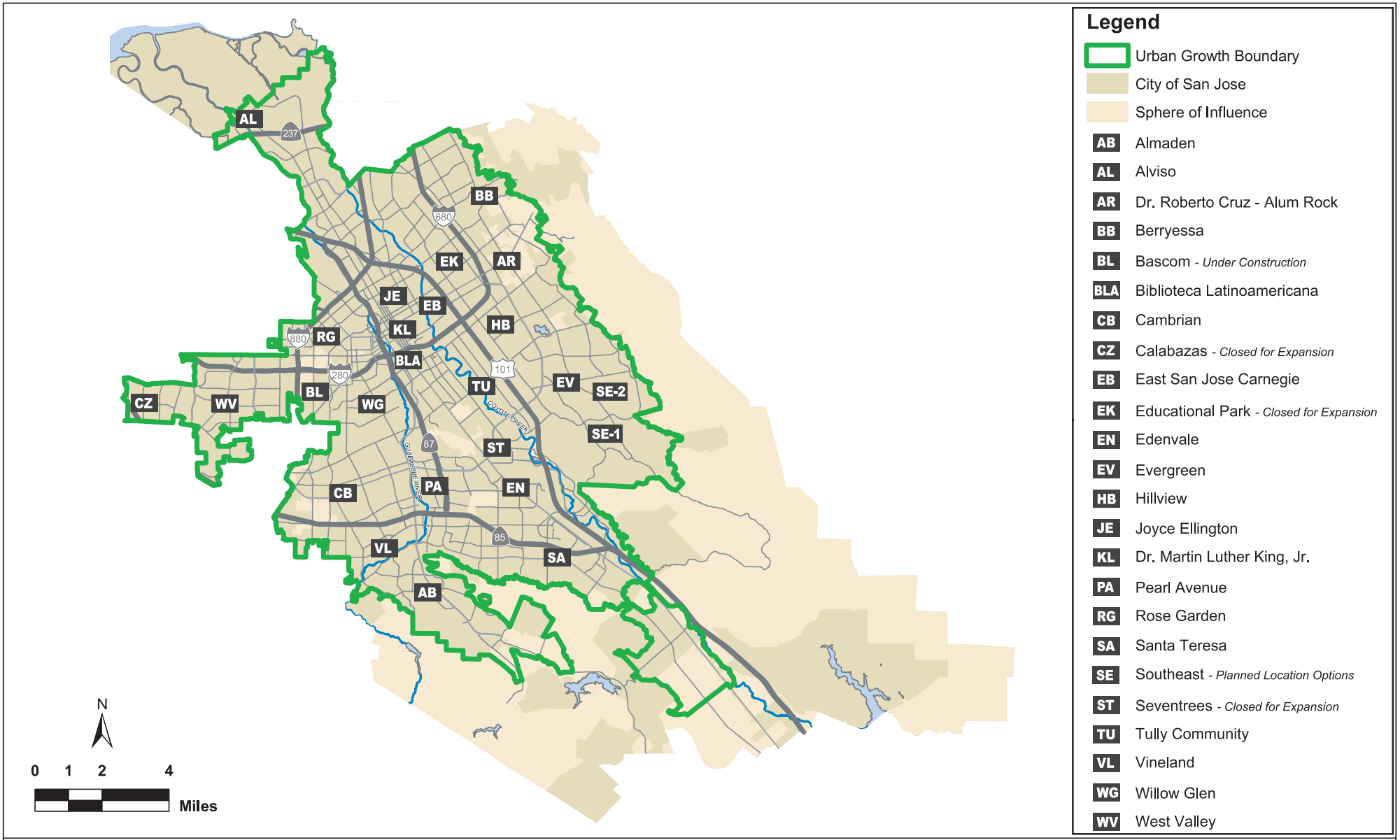
The San José Public Library System consists of one main library and 18 open branch libraries. An additional three branches are closed for expansion and one new library is being constructed. A new branch library is also planned for the Evergreen area of San José. The planned Southeast Branch Library would either be located on San Felipe Road south of Yerba Buena Road or south of the Evergreen Village Square.

In 2000, San José voters approved the Branch Library Bond Measure to provide funding over 10 years to construct six new branch libraries and expand 14 existing libraries in the City. As of April 2010, work on 15 branch libraries was completed, four branch libraries were undergoing construction or expansion, and one library is being planned. When construction under the Bond Measure is complete, the City will have over 950,000 square feet of library space.

The Dr. Martin Luther King Jr. Main Library, which is a joint San José State University/San José Public Library, is located at the corner of San Fernando and Fourth Streets, in Downtown San José. A map of the main and branch library locations is provided on Figure 3.9-5.

In 2009-2010, the City libraries had over 7.6 million visitors and loaned over 14.9 million items. The City libraries have a total of approximately 2.3 million items.[122] The existing General Plan has a policy of providing 2.75 volumes (items) in the San José Public Library System per capita and 0.59 square feet of library space per capita. Given the City's current population of 985,307 people, the City has 2.33 volumes per capita and 0.83 square feet of library space per capita.[123]

[121] City of San José, Department of Parks, Recreation, and Neighborhood Services. *Residents' Proximity to Off-Street Trails.* Map. May 2010. <http://www.sjparks.org/Trails/Reports/3-mile%20buffer%2011x17.jpg>
[122] San José Public Library. "Fact and History – Quick Statistics (FY2009/2010)." Accessed May 18, 2011. <http://www.sjpl.org/facts>
[123] The open library space per capita of 0.83 only includes open libraries. The library space per capita would increase to 0.90 if all libraries, including closed libraries were accounted for in the calculation.



LOCATION MAP OF MAIN AND BRANCH LIBRARIES

FIGURE 3.9-5

3.9.1.6 *Regulatory Framework*

State of California

California Government Code Section 65996 (School Facilities)

While impacts to school facilities must be disclosed under CEQA, there are statutory limits on how those impacts can be considered by lead agencies, such as the City of San José. California Government Code Section 65996 specifies that an acceptable method of offsetting a project's effect on the adequacy of school facilities is the payment of a school impact fee prior to issuance of a building permit. California Government Code Sections 65995-65998 sets forth provisions for the payment of school impact fees by new development as the exclusive means of "considering and mitigating impacts on school facilities that occur or might occur as a result of any legislative or adjudicative act, or both, by any state or local agency involving, but not limited to, the planning, use, or development of real property" [§65996(a)]. The legislation goes on to say that the payment of school impact fees "are hereby deemed to provide full and complete school facilities mitigation" under CEQA [§65996(b)]. The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code. The CEQA documents must identify that school impact fees and the school districts' methods of implementing measures specified by Government Code 65996 would mitigate project-related increases in student enrollment.

In accordance with California Government Code Section 65996, developers pay a school impact fee to the school district to offset the increased demands on school facilities caused by their proposed residential development project.

California Education Code Section 17251(b)

Pursuant to Section 17251(b) of the Education Code, the California Department of Education (CDE) developed the School Site Selection and Approval Guide (2000) to assist school districts in 1) selecting appropriate sites in compliance with regulations and CDE policies and 2) gaining state approval for the selected sites. The guide refers to the standards for school site selection as outlined in CEQA, the California Education Code, Title 5 of the CCR, and other state codes. The guide includes site selection criteria based on a variety of factors such as location, size, and cost; however, it focuses on safety as the most important criteria to be considered during site selection.

According to the guide, the following safety factors shall be considered when evaluating a potential school site: 1) proximity to airports; 2) proximity to high-voltage power transmission lines; 3) presence of toxic and hazardous substances; 4) hazardous air emissions and facilities within a quarter mile; 5) other health hazards; 6) proximity to railroads; 7) proximity to high-pressure natural gas lines, gasoline lines, pressurized sewer lines, or high-pressure water pipelines; 8) proximity to propane tanks; 9) proximity to major roadways; 10) noise; 11) results of geological studies and soils analyses; 12) condition of traffic and school bus safety; 13) safe routes to school; and 14) safety issues for joint-use projects.

Quimby Act-California Code Sections 66475-66478 (Parks)

The Quimby Act (California Government Code Sections 66475-66478) was approved by the California legislature to preserve open space and parkland in the State. This legislation was in response to California's increased rate of urbanization and the need to preserve open space and

provide parks and recreation facilities for California's growing communities. The Quimby Act authorizes local governments to establish ordinances requiring developers of new subdivisions to dedicate parks, pay an in-lieu fee, or perform a combination of the two.

The Quimby Act provides two standards for the dedication of parks. If the existing park acreage in a community is greater than three (3) acres per 1,000 persons, then the community may require dedication based on a standard of up to five (5) acres per 1,000 persons within a subdivision. If the existing park acreage in a community is less than 3 acres per 1,000 persons, then the community may require dedication based on a standard of only 3 acres per 1,000 persons residing in the subdivision. Section 66475.1 of the California Code also states that a new subdivision may be required to dedicate land for bicycle paths if they are dedicating roadways to the public.

As described below under *City of San José,* the City has adopted a Parkland Dedication Ordinance and a Park Impact Ordinance, consistent with the Quimby Act.

Regional

Countywide Trails Master Plan

The Santa Clara County Trails Master Plan Update (1995) was approved by the Santa Clara County Board of Supervisors in 1995. The goal of the plan is to direct the County's trail implementation efforts well into the 21st century with a balanced regard for the public good and individual desires for privacy. The plan implements the vision to provide a contiguous trail network that connects cities to one another, connects cities to the County's regional open space resources, connects County parks to other County parks, and connects the northern and southern urbanized regions of the County. The plan identifies regional trail routes, sub-regional trail routes, connector trail routes, and historic trails. The Countywide Trails Master Plan Update identified the following countywide trails within the City of San José:

- R1-A: Juan Bautista de Anza National Historic Trail
- R1-B: Juan Bautista de Anza National Historic Trail
- R5-C: Bay Area Ridge Trail (El Sombrosol Penitencia)
- S5: Coyote Creek Trail Llagas Sub-regional Trail
- S6: West Valley Sub-regional Trail
- C17: Almaden-Hicks Road Connector Loop
- C18: Guadalupe Reservoir/Calero Trail
- S3: Guadalupe River Sub-regional Trail
- C20: Bailey Avenue Connector Trail
- C3: Calabazas Creek Connector Trail
- C7: Calaveras Connector Trail
- C4: Hetch Hetchy Connector Trail
- S4: Los Gatos Creek Sub-regional Trail
- C5: San Tomas Aquino Creek Connector Trail
- C22: Silver Creek Connecting Loop Trail
- C9: Southern Pacific Rim Trail

The major regional trail routes identified in the County's Trail Master Plan that are within San José include the Coyote Creek Trail and the Guadalupe Trail. Both of these trails are identified in the

City's trail network and are an important part of the City's bicycle and pedestrian network. The City has current General Plan policies that encourage the development of bicycle and pedestrian facility connections to these trails.

City of San José

Urban Environmental Accords

On November 1, 2005, San José's City Council signed on to the Urban Environmental Accords (Accords), a declaration of participating city governments to build ecologically sustainable, economically dynamic, and socially equitable futures for their urban citizens. To date, 100 cities worldwide have signed on to the Accords including 23 in North America and 12 in California (which includes the City of San José).

The Urban Environmental Accords includes 21 actions in seven different areas such as energy, waste, and urban nature (including parks), that would help improve the quality of life for residents and preserve San José's environment and resources. The urban nature action that relates to parks is:

- Ensure that there is an accessible public park or recreational open space within half a kilometer (approximately 1/3 of a mile) of every city resident by 2015.[124]

The City currently has 51 underserved areas using the above goal of 1/3 of a mile radius which affects approximately six percent of the City's urban housing stock.[125]

San José 2020 General Plan

Existing policies in the City of San José 2020 General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Relevant General Plan Policies that directly address reducing and avoiding public service impacts include the following:

- Urban Conservation Policy #3
- Neighborhood Identity Policies #2 and 4
- Residential Land Use Policies #11
- Level of Service, Other Services Policies #16 and 17
- Level of Service, Schools Policies #22-25
- Parks and Recreation Policies #1, 3, 4, 6-14, and 16-19

City of San José Greenprint 2009 Update Plan for Parks, Recreation Facilities and Trails

In December 2009, the City Council adopted the City of San José Greenprint 2009 Update. The Greenprint 2009 Update is the City's 20-year strategic plan for parks, recreational facilities, and programs. The Greenprint 2009 Update is a guide for City staff and policy makers in the day to day decision making process, which provides opportunities to improve resident health and wellness through parks, recreational programs and facilities.

[124] City of San José, Environmental Services Department. "Urban Environmental Accords." February 26, 2009. Accessed May 3, 2010. <http://www.sanjoseca.gov/esd/urban-accords.asp>
[125] City of San José. *Greenprint 2009 Update for Parks, Recreation Facilities and Trails*. June 2009.

San José Green Vision

In October 2007, the City Council adopted the *San José Green Vision*. The *Green Vision* is a 15-year plan to transform San José into a world center of Clean Technology, promote cutting-edge sustainable practices, and demonstrate that the goals of economic growth, environmental stewardship and fiscal responsibility are inextricably linked. One of the goals of the *Green Vision* is to create 100 miles of interconnected trails.

Parkland Dedication Ordinance and the Park Impact Ordinance

The City of San José has adopted the Parkland Dedication Ordinance (PDO, Municipal Code Chapter 19.38) and Park Impact Ordinance (PIO, Municipal Code Chapter 14.25) requiring new residential development to either dedicate sufficient land to serve new residents, or pay fees to offset the increased costs of providing new park facilities for new development. These ordinances are intended to reduce the extent to which new development would exacerbate the existing shortfall of park and recreational facilities. Under the PDO and PIO, a project can satisfy half of its total parkland obligation by providing private recreational facilities on-site. For projects over 50 units, it is the City's decision as to whether the project will dedicate land for a new public park site or accept a fee in-lieu of land dedication. Affordable housing including low, very-low, and extremely-low income units are exempt from the PDO and PIO. The acreage of parkland required is based on the minimum acreage dedication formula outlined in the PDO.[126]

[126] Minimum Acreage Dedication = (0.003 acres) x (number of dwelling units) x (average persons per household).

3.9.2 Thresholds of Significance

Unlike utility services, public services are provided to the community as a whole, usually from a central location or from a defined set of nodes. The resources base for delivery of the services, including the physical service delivery mechanisms, is financed on a community-wide basis, usually from a unified or integrated financial system. The service delivery can be provided by a city, county, service, or other special district. Usually, new development will create an incremental increase in the demand for these services. The amount of the demand will vary widely, depending on both the nature of the development (residential vs. industrial, for instance) and the type of services, as well as on the specific characteristics of the development (such as senior housing vs. family housing). The impact of a particular project on public services and facilities is generally a fiscal impact. By increasing the demand for a type of service, a project could cause an eventual increase in the cost of providing the service (more personnel hours to patrol an area, additional fire equipment needed to service a tall building, etc.). These impacts are economic, not environmental.

CEQA does not require an analysis of fiscal impacts unless the increased demand triggers the need for a new facility (such as a school or fire station), since the new facility would have a physical impact on the environment.

For the purposes of this PEIR, a public facilities and services impact is significant if implementation of the proposed *Envision San José 2040 General Plan* would:

- Result in substantial adverse physical impacts from the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
  - Fire protection;
  - Police protection;
  - Schools;
  - Parks; or
  - Other public facilities.

3.9.3 Public Facilities and Services Impacts

3.9.3.1 *Fire Protection*

The proposed General Plan would result in an increase in development and service population requiring fire protection service. As shown in Figure 3.9-1, fire stations are located throughout the City in order to provide adequate response times to calls for service. Although the current General Plan response times are not being met, the SJFD is constructing new stations and relocating other stations in order to improve response times. Construction of new fire stations, other than those currently planned, are not anticipated to be required to provide service to development allowed under the General Plan. The General Plan may require the expansion of existing stations, which is not anticipated to result in new significant environmental impacts, but would be subject to supplemental environmental review.

Development and redevelopment allowed by the General Plan would be constructed to current fire code standards. New development allowed under the General Plan would be of a higher density than

is found throughout most of San José with buildings in the planned growth areas exceeding four stories in height. According to current Fire Department protocols, fires in structures four stories or taller in height will require responses from more than one fire station. Additional staffing and equipment may be needed to serve the proposed high density development envisioned under the General Plan.

The increases in roadway congestion identified as a result of development allowed under the General Plan could increase response times for emergency vehicles (refer to Section 3.2 Transportation). Traffic signal preemption will continue to be implemented as necessary to provide adequate response times in areas with heavy traffic resulting from implementation of the General Plan.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Fire Protection Services

The proposed *Envision San José 2040 General Plan* includes new implementation policies that address the provision of fire services within the City. Proposed General Plan Policies and Actions that provide program-level mitigation for additional fire services required within the City are identified below.

Education and Services Policies and Actions (Community Safety)	
Policy ES-3.1	Provide rapid and timely Level of Service response time to all emergencies: a. For police protection, achieve a response time of six minutes or less for 60 percent of all Priority 1 calls, and of eleven minutes or less for 60 percent of all Priority 2 calls. b. For fire protection, achieve a total response time (reflex) of eight minutes and a total travel time of four minutes for 80 percent of emergency incidents. c. Enhance service delivery through the adoption and effective use of innovative, emerging techniques, technologies and operating models. d. Measure service delivery to identify the degree to which services are meeting the needs of San José's community. e. Ensure that development of police and fire service facilities and delivery of services keeps pace with development and growth in the city.
Policy ES-3.3	Locate police and fire service facilities so that essential services can most efficiently be provided and level of service goals met. Ensure that the development of police and fire facilities and delivery of services keeps pace with development and growth of the city.
Policy ES-3.4	Construct and maintain architecturally attractive, durable, resource-efficient, environmentally sustainable and healthful police and fire facilities to minimize operating costs, foster community engagement, and express the significant civic functions that these facilities provide for the San José community in their built form. Maintain City programs that encourage civic leadership in green building standards for all municipal facilities.
Policy ES-3.5	Co-locate public safety facilities with other public or private uses to promote efficient use of space and provision of police and fire protection services within dense, urban portions of the city.

Policy ES-3.6	Work with local, State, and Federal public safety agencies to promote regional cooperation in the delivery of services. Maintain mutual aid agreements with surrounding jurisdictions for emergency response.
Policy ES-3.9	Implement urban design techniques that promote public and property safety in new development through safe, durable construction and publicly-visible and accessible spaces.
Policy ES-3.10	Incorporate universal design measures in new construction, and retrofit existing development to include design measures and equipment that support public safety for people with diverse abilities and needs. Work in partnership with appropriate agencies to incorporate technology in public and private development to increase public and personal safety.
Policy ES-3.11	Ensure that adequate water supplies are available for fire-suppression throughout the City. Require development to construct and include all fire suppression infrastructure and equipment needed for their projects.
Policy ES-3.13	Maintain emergency traffic preemption controls for traffic signals.
Policy ES-3.14	Encourage property maintenance and pursue appropriate code enforcement to reduce blight, crime, fire hazards or other unsafe conditions associated with under-maintained and under-utilized properties.
Policy ES-3.15	Apply demand management principles to control hazards through enforcement of fire and life safety codes, ordinances, permits and field inspections.
Policy ES-3.18	Maintain a program consistent with requirements of State law to inspect buildings not under authority of the Office of the State Fire Marshall.
Policy ES-3.19	Remove excessive/overgrown vegetation (e.g., trees, shrubs, weeds) and rubbish from City-owned property to prevent and minimize fire risks to surrounding properties.
Policy ES-3.20	Require private property owners to remove excessive/overgrown vegetation (e.g., trees, shrubs, weeds) and rubbish to the satisfaction of the Fire Chief to prevent and minimize fire risks to surrounding properties.
Action ES-3.21	Create long-range funding and deployment strategies for expanding and maintaining police and fire facilities and operations to address service delivery demands from new population growth.
Action ES-3.22	Maintain the City's Fire Department Strategic Plan as a tool to achieve General Plan Level of Service and other related goals and policies. Base fire station location planning on a four-minute travel radius.
Action ES-3.23	Engage public safety personnel in the land use entitlement process for new development projects.
Action ES-3.26	Evaluate potential strategies for the use of police substation type facilities, including opportunities to locate police facilities within new mixed-use development projects, to support law enforcement activities from a distributed network of facilities located within Villages or other new growth areas.

Impact PS-1: Implementation of the proposed General Plan would result in an increase in calls for fire protection services but is not anticipated to result in the need for construction of fire stations in excess of those currently planned. **(Less Than Significant Impact)**

3.9.3.2 *Police Protection*

The proposed General Plan would result in an increase in population in the City of approximately 367,200 residents which would require an increase in police services. Implementation of the General Plan would not result in an increased service area for the SJPD. Growth resulting from the General Plan would result in the need for additional police officers and equipment. Police services would continue to be dispatched from police headquarters and no additional stand-alone police facilities are anticipated; however, expansion of existing facilities on developed sites may be required. The SJPD may also increase the number of community policing centers which would be located in existing commercial buildings or within new private redevelopment (e.g. Oakridge Mall).

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Police Protection Services

The proposed *Envision San José 2040 General Plan* includes new implementation policies that address the provision of police services within the City. Proposed General Plan Policies and Actions that provide program-level mitigation for additional police services required within the City are identified below.

Education and Services Policies and Actions (Community Safety)	
Policy ES-3.1	Provide rapid and timely Level of Service response time to all emergencies: a. For police protection, achieve a response time of six minutes or less for 60 percent of all Priority 1 calls, and of eleven minutes or less for 60 percent of all Priority 2 calls. b. For fire protection, achieve a total response time (reflex) of eight minutes and a total travel time of four minutes for 80 percent of emergency incidents. c. Enhance service delivery through the adoption and effective use of innovative, emerging techniques, technologies and operating models. d. Measure service delivery to identify the degree to which services are meeting the needs of San José's community. e. Ensure that development of police and fire service facilities and delivery of services keeps pace with development and growth in the city.
Policy ES-3.3	Locate police and fire service facilities so that essential services can most efficiently be provided and level of service goals met. Ensure that the development of police and fire facilities and delivery of services keeps pace with development and growth of the city.
Policy ES-3.4	Construct and maintain architecturally attractive, durable, resource-efficient, environmentally sustainable and healthful police and fire facilities to minimize operating costs, foster community engagement, and express the significant civic functions that these facilities provide for the San José community in their built form. Maintain City programs that encourage civic leadership in green building standards for all municipal facilities.

Policy ES-3.5	Co-locate public safety facilities with other public or private uses to promote efficient use of space and provision of police and fire protection services within dense, urban portions of the city.
Policy ES-3.8	Use the Land Use/Transportation Diagram to promote a mix of land uses that increase visibility, activity and access throughout the day and to separate land uses that foster unsafe conditions.
Policy ES-3.9	Implement urban design techniques that promote public and property safety in new development through safe, durable construction and publicly-visible and accessible spaces.
Policy ES-3.14	Encourage property maintenance and pursue appropriate code enforcement to reduce blight, crime, fire hazards or other unsafe conditions associated with under-maintained and under-utilized properties.
Action ES-3.21	Create long-range funding and deployment strategies for expanding and maintaining police and fire facilities and operations to address service delivery demands from new population growth.
Action ES-3.23	Engage public safety personnel in the land use entitlement process for new development projects.
Action ES-3.26	Evaluate potential strategies for the use of police substation type facilities, including opportunities to locate police facilities within new mixed-use development projects, to support law enforcement activities from a distributed network of facilities located within Villages or other new growth areas.

Impact PS-2: The proposed General Plan would result in an increase in calls for service and may require the need for expansion of existing police facilities or the location of new facilities within planned growth areas. Construction of new police facilities would require supplemental environmental review but is not anticipated to have significant adverse environmental impacts. **(Less Than Significant Impact)**

3.9.3.3 *Schools*

Implementation of the proposed General Plan would result in approximately 35,185 new students in the school districts serving San José. The Santa Clara Unified School District is currently planning for one K-5 elementary school, one K-8 elementary school, and one high school to serve planned development in North San José. The Franklin-McKinley School District is planning to construct a K-8 elementary school on Communications Hill to serve students of proposed residential development in the Specific Plan area. Other districts have closed and/or leased school sites that may be able to accommodate additional students from future residential development depending on the timing of the development and any current leases for the schools in question. The Los Gatos Union School District and Los Gatos-Saratoga Joint Union High School District serve a limited area of San José within the City limits and Urban Growth Boundary that includes a pending application for residential development. This proposed development would generate new students, as identified in Table 3.9-4 below, however, no additional residential development is proposed under the *Envision San José 2040 General Plan* within the boundaries of the two Los Gatos districts. The number of new students anticipated to be generated by the proposed General Plan for each district serving residential development in San José is identified in Table 3.9-4. Currently planned facilities to serve

students are also identified as is the potential for new school facilities to be required due to development under the proposed General Plan.

Table 3.9-4
School Districts Serving San José

District	Available Capacity	Planned Facilities	Additional Capacity	New Students Generated	Additional Schools Required
Alum Rock Union	4,312	Yes	Unknown	1,579	None
Berryessa Union	72	No	N/A	954	2 schools
Cambrian	288	No	N/A	219	None
Campbell Union	78	No	N/A	1,456[3]	2 elementary/ middle school facilities
Campbell Union High	-374	No	N/A	3,751[4]	2 to 3 schools
Cupertino Union	-288	No	N/A	375[5]	1 elementary/ middle school facilities
East Side Union High	-210	No	Unknown	6,231	1 high/expand school facilities
Evergreen	28	No	Unknown	1,087[6]	1 to 2 schools
Franklin-McKinley	134	Yes	895 students	295	1 elementary
Fremont Union	-1,219	No	1,400[1]	580	1 high school
Los Gatos Union	-26	Yes	Unknown	30	additional facilities
Los Gatos-Saratoga Joint	-139	No	N/A	20	additional facilities
Luther Burbank	-94	No	N/A	134[3,5]	additional facilities
Moreland	187	No	2,750[1]	980	1 elementary/ additional facilities[7]
Morgan Hill Unified	-319	No	N/A	98	additional facilities
Mount Pleasant Elem.	-51	No	N/A	9[6]	additional facilities
Oak Grove	2,309	No	660[1]	500	None
Orchard	320	No	N/A	1,698[8]	1 to 2 elementary schools
San José Unified	-1,004	No	N/A[2]	11,079	7 elementary, 2 middle, 2 high
Santa Clara Unified	161	Yes	3,566	3,960	2 elementary, 1 high
Union	267	No	N/A[2]	200	None
			Total	35,185	

Notes: [1]Additional capacity available at a presently closed or leased school facility.
[2]District has additional school facilities that are currently leased or closed and no capacity information was obtained.
[3]Student generation rates from the Cambrian School District were used due to a lack of response from this district.
[4]Student generation rates from the Fremont Union High School District were used due to a lack of response from this district.
[5]Student generation rates from the Campbell Union School District were used due to a lack of response from this district.
[6]Student generation rates from the Evergreen/East Hills Vision Strategy EIR (2006) were used due to a lack of response from this district.
[7]Additional capacity is available in leased school sites that may not be available to serve students at the time they are needed.
[8] Student generation rates from North San José Vision Education Needs 2040 A Report on the Planning for New Schools (2008).

Several of the school districts serving San José students have voter-approved bond funds to modernize and construct new classroom facilities. The East Side Union High School District is currently modernizing and constructing new classroom facilities using funds from a bond passed in February 2008. The Evergreen School District is modernizing and constructing new facilities using bond funds from the passage of Measure I in 2006. The Fremont Union High School District is also upgrading facilities using a bond passed in June 2010 which includes adding new classrooms to avoid overcrowding. A bond (Measure E) was passed for the Los Gatos Union School District in June 2010 that will expand the capacity of Fisher Middle School with 10 additional classrooms. The addition of classrooms using bond funds may offset some of the demand created by the proposed General Plan; however, it is not currently known to what extent the additional capacity resulting from these improvements would offset future demand.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Impacts to School Facilities

The proposed *Envision San José 2040 General Plan* includes new implementation policies that address the provision of education facilities within the City. Proposed General Plan Policies and Actions that provide program-level mitigation for additional education facilities required within the City are identified below.

Education and Parks, Trails, Open Space, and Recreation Amenities Policies and Actions	
Policy ES-1.9	Provide all pertinent information on General Plan amendments, rezonings and other development proposals to all affected school districts in a timely manner.
Policy ES-1.15	Integrate school construction and/or renovation plans into the Village planning process.
Policy ES-1.16	Continue to work with public and private schools through programs such as the Street Smarts School Safety Education Program to improve pedestrian and bicycle safety and encourage walking and biking to and from school.
Policy PR-8.7	Continue to actively collaborate with school districts, utilities, and other public agencies to provide for appropriate recreation uses of their respective properties and rights-of-ways. Consideration should be given to cooperative efforts between these entities and the City to develop parks, pedestrian and bicycle trails, sports fields and recreation facilities.
Action PR-8.19	Pursue joint use projects with schools and colleges, Santa Clara Valley Water District, other public agencies, and private foundations. Whenever feasible, obtain permanent joint-use agreements when partnering with other organizations or agencies in providing parks or recreation facilities in order to ensure the amenities' availability in perpetuity.

Existing Regulations and Adopted Plans and Policies

Existing state regulations that would reduce or avoid possible impacts to schools include:

- California Government Code, Sections 65995 to 65998
- California Education Code Section 17251(b)

Impact PS-3: New development and redevelopment allowed under the proposed General Plan would increase the number of students attending local schools. Implementation of the proposed General Plan policies and programs would ensure that additional school facilities are sited to serve new residential development. Construction and/or expansion of schools that are fully consistent with proposed policies and existing regulations would reduce any physical impacts from development or expansion of school facilities to a less than significant level. **(Less Than Significant Impact)**

3.9.3.4 *Parks*

City and Regional Parkland

The City of San José adopted the *Greenprint 2009 Update Plan for Parks, Recreation Facilities and Trails* (Greenprint) in December 2009. The Greenprint provides a strategic plan for the development of parks in San José through 2020. The Greenprint assumed the population in San José would reach 1,137,700 persons by the year 2020 and identified underserved areas of the city that would require additional facilities in order to meet the City's Level of Service standards. The proposed General Plan would result in an estimated population of 1,313,811 by 2035. Residential development allowed under the proposed General Plan would increase the demand for park and recreational facilities and exceed the previous estimates for parkland acreage identified in the Greenprint. The project's estimated parkland demand is shown in Table 3.9-5.

Table 3.9-5
City Parkland Requirements for ESJ 2040 General Plan

Description	Service Level Goal (ac/ 1,000 population)	Existing Conditions		2020 Greenprint		ESJ 2040 General Plan	
		Service Level (ac/ 1,000 population)	Area (acres)	Projected Acreage Required	Projected Surplus/ Deficit (ac)	Projected Acreage Required	Projected Surplus /Deficit (ac)
Neighborhood/Community Serving Parkland (City-owned)	1.5	1.6	1,586.9	1,706.6	-119.7	1,970.7	-383.8
Recreational School Grounds	2.0	1.4	1,334.2	2,275.4	-941.2	2,627.6	-1,293.4
Citywide/Regional Parkland (City-owned)	7.5	1.9	1,848.5	8,532.8	-6,684.3	9,853.6	-8,005.1
City and other Citywide/ Regional Parkland Combined	7.5	17.8	17,348.5[1]	8,532.8	+8,815.7	9,853.6	+7,494.9

Source: City of San José. *Greenprint 2009 Update for Parks, Recreation Facilities and Trails*. June 2009.
Notes: [1]Includes 1,848.5 acres of City-owned regional parkland.

Development and redevelopment allowed under the proposed General Plan would result in the need for additional parkland throughout San José. The Greenprint identifies additional acreage estimated to be required by 2020 to meet the City's service objective based on the current San José 2020 General Plan. The City Planning Areas expected to meet the parkland service level objective with development under the proposed General Plan through 2035 are Almaden and Alviso and, therefore, would not require additional parkland acreage to serve residents. The proposed General Plan policies, identified on the following page, require development in the Villages and Corridors and other large scale residential development to provide park, trail and recreation amenities to ensure the increased demand for such facilities resulting from development are met and would not exacerbate existing deficiencies in the City. Consistency with the PDO/PIO and General Plan policies will ensure that no additional impact will result from increased development.

Community Centers and Recreational Facilities

The City currently has approximately 584,900 square feet of community center facilities[127] which includes all community centers in the City currently under construction and meets the service level objective of providing 500 square feet per 1,000 population. Based on an estimated population of 1,313,811 in San José by 2035 the City would require approximately 656,900 square feet of community center space to meet the service level objective. An additional 72,000 square feet of community center space would therefore be needed to serve the increased demand for services resulting from the proposed General Plan.

Trails

The Department of Parks, Recreation, and Neighborhood Services' Trail Program has identified trail network development with two long-term goals:

1. Per the Green Vision – complete a 100-mile interconnected Trail Network by 2022.
2. Per the Greenprint – develop 130 miles of interconnected trails by 2035.

The Countywide Trails Master Plan has identified 159 miles of trails within the City of San José. The Greenprint, Bike Plan 2020, and proposed General Plan policies are intended to implement a substantial network of trails to serve San José residents. The proposed General Plan is supportive of trail construction and future development allowed by the Plan would not result in adverse impacts to the existing and planned trail network in San José and Santa Clara County.

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Impacts to Parkland and Community Recreational Facilities

The proposed *Envision San José 2040 General Plan* includes new implementation policies that address the provision of parkland and community recreational facilities within the City. Proposed General Plan Policies and Actions that provide program-level mitigation for impacts related to parkland and community facilities required within the City are identified below.

[127] City of San José. *Greenprint 2009 Update for Parks, Recreation Facilities and Trails*. December 2009. Page 20.

Parks, Trails, Open Space, and Recreation Amenities Policies and Actions	
Policy PR-1.1	Provide 3.5 acres per 1,000 population of neighborhood/community serving parkland through a combination of 1.5 acres of public park and 2.0 acres of recreational school grounds open to the public per 1,000 San José residents.
Policy PR-1.2	Provide 7.5 acres per 1,000 population of citywide/regional park and open space lands through a combination of facilities provided by the City of San José and other public land agencies.
Policy PR-1.3	Provide 500 square feet per 1,000 population of community center space.
Policy PR-1.9	As Village and Corridor areas redevelop, incorporate urban open space and parkland recreation areas through a combination of high-quality, publicly accessible outdoor spaces provided as part of new development projects; privately, or in limited instances publicly, owned and maintained pocket parks; neighborhood parks where possible; as well as through access to trails and other park and recreation amenities.
Action PR-1.12	Regularly update and utilize San José's Parkland Dedication Ordinance/Parkland Impact Ordinance (PDO/PIO) to implement quality facilities.
Action PR-1.13	Maintain and periodically update a strategic plan (the *Greenprint*) establishing criteria and standards for the provision of parks and recreation services.
Action PR-1.15	Develop community sports parks to serve existing and future residents, workers, and visitors in San José.
Policy PR-2.4	To ensure that residents of a new project and existing residents in the area benefit from new amenities, spend Park Dedication Ordinance (PDO) and Park Impact Ordinance (PIO) fees for neighborhood serving elements (such as playgrounds/ tot-lots, basketball courts, etc.) within a 3/4 mile radius of the project site that generates the funds.
Policy PR-2.5	Spend, as appropriate, PDO/PIO fees for community serving elements (such as soccer fields, dog parks, sport fields, community gardens, community centers, etc.) within a 3-mile radius of the residential development that generates the PDO/PIO funds.
Policy PR-2.6	All new residential developments over 200 units in size should be located within 1/3 of a mile walking distance of an existing or new park, trail, open space or recreational school grounds open to the public after normal school hours or shall include one or more of these elements in the project design.
Policy PR-6.2	Continue to develop trails, parks and recreation facilities in an environmentally sensitive and sustainable manner.
Policy PR-6.5	Design and maintain park and recreation facilities to minimize water, energy and chemical (e.g., pesticides and fertilizer) use. Incorporate native and/or drought-resistant vegetation and ground cover where appropriate.
Action PR-6.9	Obtain applicable LEED Certification (or its equivalent) for new and existing parks and recreation facilities, as dictated by applicable City policies.
Policy PR-7.2	Condition land development and/or purchase property along designated Trails and Pathways Corridors in order to provide sufficient trail right-of-way and to ensure

	that new development adjacent to the corridors does not compromise safe trail access nor detract from the scenic and aesthetic qualities of the corridor.
Policy PR-8.5	Encourage all developers to install and maintain trails when new development occurs adjacent to a designated trail location. Use the City's Parkland Dedication Ordinance and Park Impact Ordinance to have residential developers build trails when new residential development occurs adjacent to a designated trail location, consistent with other parkland priorities. Encourage developers or property owners to enter into formal agreements with the City to maintain trails adjacent to their properties.
Policy PR-8.7	Continue to actively collaborate with school districts, utilities, and other public agencies to provide for appropriate recreation uses of their respective properties and rights-of-ways. Consideration should be given to cooperative efforts between these entities and the City to develop parks, pedestrian and bicycle trails, sports fields and recreation facilities.
Action PR-8.19	Pursue joint use projects with schools and colleges, Santa Clara Valley Water District, other public agencies, and private foundations. Whenever feasible, obtain permanent joint-use agreements when partnering with other organizations or agencies in providing parks or recreation facilities in order to ensure the amenities' availability in perpetuity.

Existing Regulations and Adopted Plans and Policies

Existing state regulations that would reduce or avoid possible impacts to park and recreational facilities include:

- Quimby Act

Impact PS-4: Since the specific locations and designs of parkland, community center, and trail facilities required to serve the increased development allowed under the proposed General Plan are not yet known, it cannot be determined conclusively at this time if future facilities might have an impact on the physical environment. Implementation of the proposed General Plan would involve the construction or expansion of recreational facilities which may have adverse physical impacts on the environment. The actual siting and construction of new recreational facilities to serve future residents would require supplemental environmental review on a case-by-case basis. Construction and/or expansion of parks and recreational facilities that are fully consistent with proposed policies and existing regulations would reduce any physical impacts from development or expansion of these facilities to a less than significant level. **(Less Than Significant Impact)**

3.9.3.5 *Libraries*

The City of San José has been expanding and constructing new library facilities over the last decade to meet the needs of current residents. The proposed General Plan would maintain the City's current policy of providing at least 0.59 square feet of library space per capita. Since adoption of the San José 2020 General Plan the City's libraries have incorporated additional services such as providing access to digital content (*e.g.,* eBooks, eAudioBooks, and digital music) via the internet which allows for patrons to use resources other than printed materials. The proposed General Plan, therefore, does

not propose any policy related to a specific per capita volume count. Development and redevelopment allowed under the proposed General Plan would increase the City's residential population to 1,313,811. The City's existing and planned facilities would provide approximately 0.68 square feet of library space for the anticipated population under the proposed General Plan by 2035.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Library Facilities

The proposed *Envision San José 2040 General Plan* includes new implementation policies that address the provision of library services within the City. Proposed General Plan Policies and Actions that provide program-level mitigation for library services required within the City are identified below.

Education and Services Policies and Actions (Libraries)	
Policy ES-2.2	Construct and maintain architecturally attractive, durable, resource-efficient, and environmentally healthful library facilities to minimize operating costs, foster learning, and express in built form the significant civic functions and spaces that libraries provide for the San José community. Library design should anticipate and build in flexibility to accommodate evolving community needs and evolving methods for providing the community with access to information sources. Provide at least .59 square feet of space per capita in library facilities.
Policy ES-2.12	Maintain City programs that encourage civic leadership in green building standards for library facilities.
Action ES-2.13	Identify preferred locations and acquire sites for library facilities in Neighborhood Business Districts, Urban Village Centers, and other commercial areas in San José.

Impact PS-5: Development and redevelopment allowed under the proposed General Plan would be served by adequate existing and planned library facilities. In the event additional library facilities are determined to be necessary, implementation of the proposed General Plan policies would reduce the physical impacts from development of these facilities to a less than significant level. **(Less Than Significant Impact)**

3.9.3.6 *Impacts of Rancho del Pueblo and iStar Residential Options*

As discussed in Section 2.2.8 in the Project Description, this PEIR also evaluates options for residential land use designations and anticipated future development on two properties; the Rancho del Pueblo Golf Course in the Alum Rock Planning Area and the iStar property in the Edenvale Planning Area (Residential Option Sites). Under these options one or both of these properties would be designated for residential uses instead of the industrial uses assumed on the iStar property and the park/open space on the existing Rancho del Pueblo Golf Course. Because these options also include modifications to other Growth Areas, adjusting the assumed dwelling units or jobs, the overall amount of development capacity assumed under the Preferred Scenario would not change citywide.

A comparison and summary of public facilities and services impacts for the residential options is shown in Table 3.9-6. Implementation of an updated General Plan that includes one or both of the

residential options for the Rancho del Pueblo and iStar sites would have impacts similar to those from the proposed project.

Table 3.9-6
Public Facilities and Services Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
PS-1	Fire Service	Both sites are located in developed, urban areas of San José currently served by the Fire Department. New fire stations would not be required to serve these sites.	same (LTS)
PS-2	Police Protection	Both sites are located in developed, urban areas of San José currently served by the Police Department. Additional stand-alone police facilities are not expected to be required to serve these sites.	same (LTS)
PS-3	Schools	The Rancho del Pueblo Residential Option would reduce the number of students in the San José Unified School District and increase the number of students in the Alum Rock Union Elementary School District and the East Side Union High School District. This shift in students would not result in any greater impact for these school districts than the proposed project. The iStar Residential Option would result in a slight reduction in the number of students in the San José Unified School District and a slight increase in the number of students in the Oak Grove School District and the East Side Union High School District. This shift in students would not result in any greater impact for these school districts than the proposed project.	same (LTS)
PS-4	Parks	Proposed General Plan policies require the provision of additional parkland for new residential development or payment of PDO/PIO fees to offset the need for new park facilities which would ensure the impact of residential development on parkland would be less than significant. The Rancho del Pueblo Residential Option would remove existing City-	same (LTS)

Table 3.9-6
Public Facilities and Services Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
		owned Regional Parkland which serves area residents with recreational golf facilities. General Plan Actions (PR-1.16) require the City to identify and pursue large park sites including other existing golf courses which could offset the loss of golf facilities on this site.	
PS-5	Libraries	Development of the Residential Option on the Rancho del Pueblo and iStar sites would not increase the residential population of San José above what is planned for in the General Plan. Existing and planned library space exceeds the City's policy standard for the planned population.	same (LTS)

[1] S= Significant; LTS = Less Than Significant
The determination of significance assumes implementation of proposed General Plan policies and actions and existing regulations and adopted plans and policies previously identified throughout Section 3.9.3 Public Facilities and Services Impacts.
Bold = New Significant Impact

3.9.4 Mitigation and Avoidance Measures for Public Facilities and Services Impacts

3.9.4.1 *Proposed General Plan*

No mitigation measures are required.

3.9.4.2 *Rancho del Pueblo and iStar Residential Options*

No mitigation measures are required.

3.9.5 Significance Conclusions

3.9.5.1 *Proposed General Plan*

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions and existing regulations would result in less than significant impacts from construction of public facilities to serve increased demand and no mitigation measures are required. **(Less Than Significant Impacts)**

3.9.5.2 *Rancho del Pueblo and iStar Residential Options*

Implementation of the proposed *Envision San José 2040 General Plan* including the Rancho del Pueblo and iStar Residential Options in accordance with proposed policies and actions and existing regulations would result in less than significant impacts from construction of public facilities to serve increased demand and no mitigation measures are required. **(Less Than Significant Impacts)**

3.10 UTILITIES AND SERVICE SYSTEMS

The following discussion evaluates water supply and utility services and the environmental effects of implementation of the *Envision San José 2040 General Plan*. The analysis in this section is based in part on the following technical reports:

- *City of San José General Plan Water Supply Assessment*, San Jose Water Company, June 2010.
- *Water Supply Assessment for Envision San José 2040 General Plan Update*, San José Municipal Water System, September 2010.

A copy of the Water Supply Assessments is included in the Technical Appendices to this Draft PEIR (Appendix I). Other documents referenced in the Draft PEIR are on file at the City of San José.

3.10.1 Existing Setting

3.10.1.1 *Water Service*

Water service is provided to the City of San José by three water retailers. The San José Water Company (SJWC) is the largest water retailer in San José. The City of San José Municipal Water System (SJMWS) provides water to North San José, Evergreen, and parts of Edenvale and Coyote Valley. The Great Oaks Water Company (Great Oaks) serves areas of southern San José including Blossom Valley, Santa Teresa, and parts of Edenvale, Coyote Valley, and Almaden Valley. The Santa Clara Valley Water District (SCVWD) manages water resources and wholesales treated water to the 13 water retailers in Santa Clara County.

Santa Clara Valley Water District

The SCVWD is required to prepare an Urban Water Management Plan (UWMP) every five years to provide long-term water resource planning and to ensure adequate water supplies are available to meet existing and future water demands.[128] The Final Draft 2010 UWMP was completed in April 2011 and is currently undergoing public review prior to preparation of the final report and submission to the California Department of Water Resources by July 1, 2011.[129] In order to maintain maximum efficiency and flexibility a mix of four primary sources are used to supply water to San José (refer to Figure 3.10-1).

Local Runoff

The SCVWD operates and maintains 10 local reservoirs with a combined capacity of approximately 169,000 acre-feet. The storage capacity of these reservoirs is currently restricted to approximately 113,800 acre-feet by the Department of Safety and Dams. One acre-foot equals approximately 326,000 gallons, the average amount of water used by two families of five in one year. An acre-foot of water would cover one acre one foot deep. These reservoirs collect local run-off during winter storms for later release to percolation ponds. From these ponds, water percolates and recharges the underground aquifers.

[128] Santa Clara Valley Water District. *Final Draft Urban Water Management Plan 2010*. April 2011. Page 3.
[129] Santa Clara Valley Water District. Final Draft Urban Water Management Plan 2010. April 2011. Accessed May 16, 2011. <http://www.valleywater.org/Services/UWMP2010.aspx>

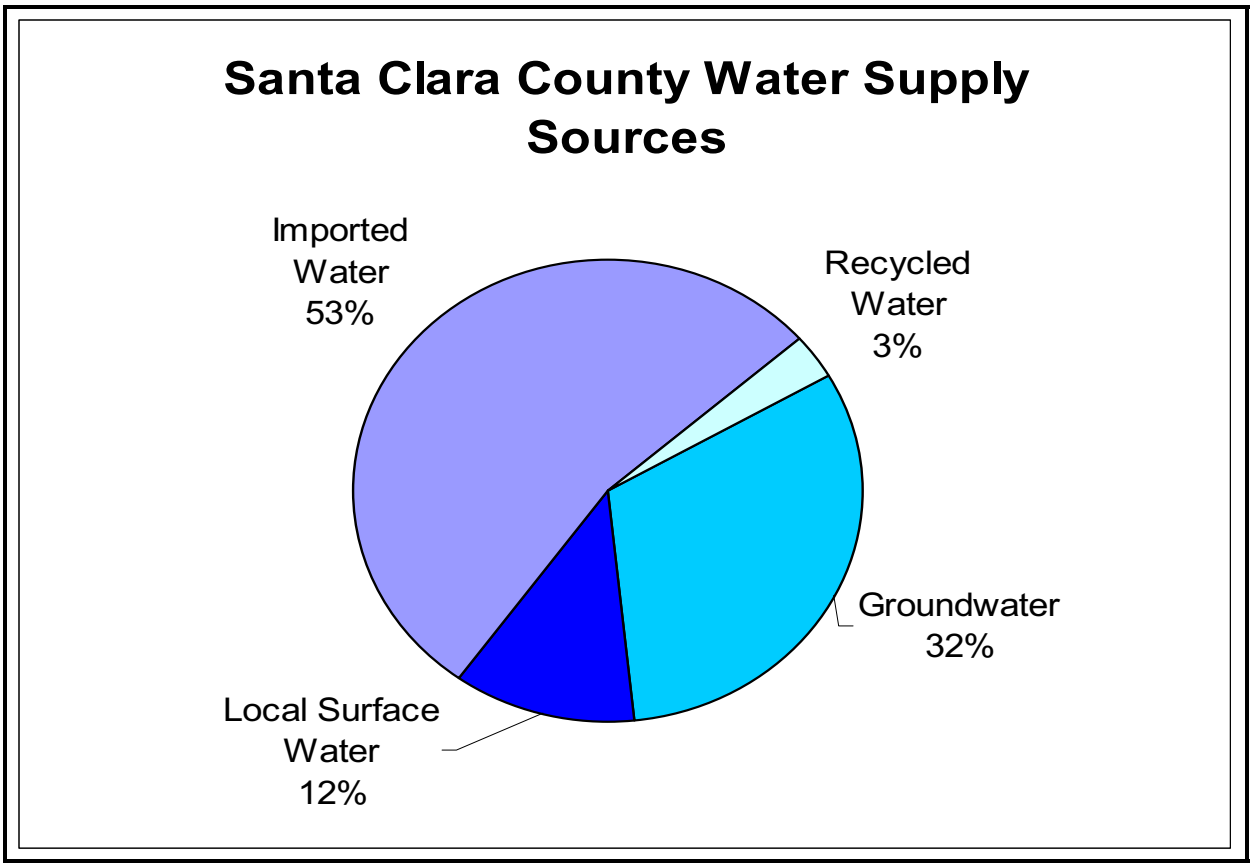


Figure 3.10-1 Santa Clara County Water Supply Sources
Source: Protection and Augmentation of Water Supplies 2010/2011 (SCVWD)

Imported Water

Roughly 50 percent of the water supply for Santa Clara County is imported water from the Sacramento-San Joaquin Delta, delivered by the California Department of Water Resources' State Water Project (SWP) and by the U.S. Bureau of Reclamation's Central Valley Project (CVP). The SCVWD has a contract for 100,000 acre-feet per year (AFY) from the SWP. The SCVWD's contract for CVP supply is 152,500 AFY, of which 130,000 acre-feet is for municipal and industrial needs and 22,500 acre-feet is for agricultural needs. The ability of the SWP and the CVP to meet contract deliveries varies from year to year and is dependent on hydrology and environmental regulations. The San Francisco Public Utilities Commission (SFPUC) also provides imported water from the Tuolumne River watershed directly to several local retailers, including the San José Municipal Water System, as discussed in more detail below.

Groundwater

The SCVWD manages the County's groundwater sub-basins to support pumping from aquifers which accounts for approximately half of the County's water supply. The SCVWD operates water supply reservoirs and groundwater recharge facilities in the local watersheds and imports Sierra runoff from the Central Valley and State Water Projects to replenish the aquifers. Local runoff stored in reservoirs and imported water is released into creeks and recharge ponds located throughout the County to augment natural percolation and maintain groundwater levels for a reliable water supply. The percolation process naturally cleans the groundwater.

Recycled Water

Tertiary treated (or "recycled") water serves as the fourth source of non-potable water supply and comprises approximately three percent of San José's overall water supply. Recycled water is supplied from the San José/Santa Clara Water Pollution Control Plant (WPCP), which is an advanced tertiary treatment facility through the South Bay Water Recycling (SBWR) Program. Recycled water is currently used for landscape irrigation, agriculture, cooling towers, and industrial processes. In the fiscal year 2009-2010, the SBWR supplied 8,652 acre-feet of water to the cities of San José, Santa Clara, and Milpitas.[130] Estimates of future use of recycled water total approximately 29,380 AFY throughout the County.[131]

San José Water Company

The privately owned San Jose Water Company's service area is 139 square miles, including most of the cities of San José and Cupertino, the entire cities of Campbell, Monte Sereno, Saratoga, the Town of Los Gatos, and parts of unincorporated Santa Clara County. The majority of connections to SJWC's distribution system are either residential or business; however, SJWC also provides water to private fire services, fire hydrants and agricultural connections. SJWC relies on groundwater, imported treated water and local surface water for its potable water supply. On average SJWC purchases approximately 55 percent of its water supply from the SCVWD, pumps 37 percent of its supply from the groundwater aquifer, and draws the remaining eight percent from local surface water sources.

San José Municipal Water System

The San José Municipal Water System is owned and operated by the City of San José. In May 1961, the City of San José purchased the Evergreen Water Company and established the San José Municipal Water System. In 1966, the North San José and Alviso service areas were added to the SJMWS with the annexation of the City of Alviso. In 1983 and 1986, the Council established the Edenvale and Coyote service areas, respectively. Since inception, the SJMWS has grown from a relatively small water utility to the fourth largest water retailer in the County of Santa Clara, with approximately 27,000 connections serving a population currently estimated at over 100,000.

SJMWS relies on different sources of water depending on the location of the service area. The North San José/Alviso area relies on a blend of Hetch Hetchy water and treated water from the San Francisco Public Utilities Commission (SFPUC). The Hetch Hetchy watershed provides most of the total SFPUC water supply, with the rest supplemented by local watersheds in Alameda and Santa Clara Counties. The major water source originates from spring snowmelt flowing down the Tuolumne River and is stored in the Hetch Hetchy Reservoir. The Alameda Watershed spans more than 35,000 acres in Alameda and Santa Clara Counties. Surface water from rainfall and runoff is collected in the Calaveras and San Antonio Reservoirs. Prior to distribution, water from the watershed is treated at the Sunol Valley Water Treatment Plant (SVWTP). Fluoridation, chloramination and corrosion control treatment are provided for the combined Hetch Hetchy and SVWTP water at the Sunol Chloramination and Fluoridation Facilities.

[130] Santa Clara Valley Water District. *Final Draft Urban Water Management Plan 2010*. April 2011. Table 7-1. Chapter 7, Page 3.
[131] Santa Clara Valley Water District. *Final Draft Urban Water Management Plan 2010*. April 2011. Table 10-1. Chapter 10, Page 5.

The SJMWS purchases treated surface water from the SCVWD for their Evergreen service area. The SCVWD's source water comes from the SWP and CVP as well as local water sources including Anderson and Calero Reservoirs. Water from Anderson and Calero Reservoirs is pumped to the Santa Teresa Water Treatment Plant in San José. Groundwater from deep-water wells provides all of SJMWS's supply for the Edenvale and Coyote Valley service areas.

Great Oaks Water Company

Great Oaks Water Company (Great Oaks) is a privately-owned water retailer providing service to areas of southern San José since the early 1960s. All of Great Oaks' water is pumped from 19 wells located throughout their service area. Great Oaks' service area is approximately 14 square miles.

Groundwater

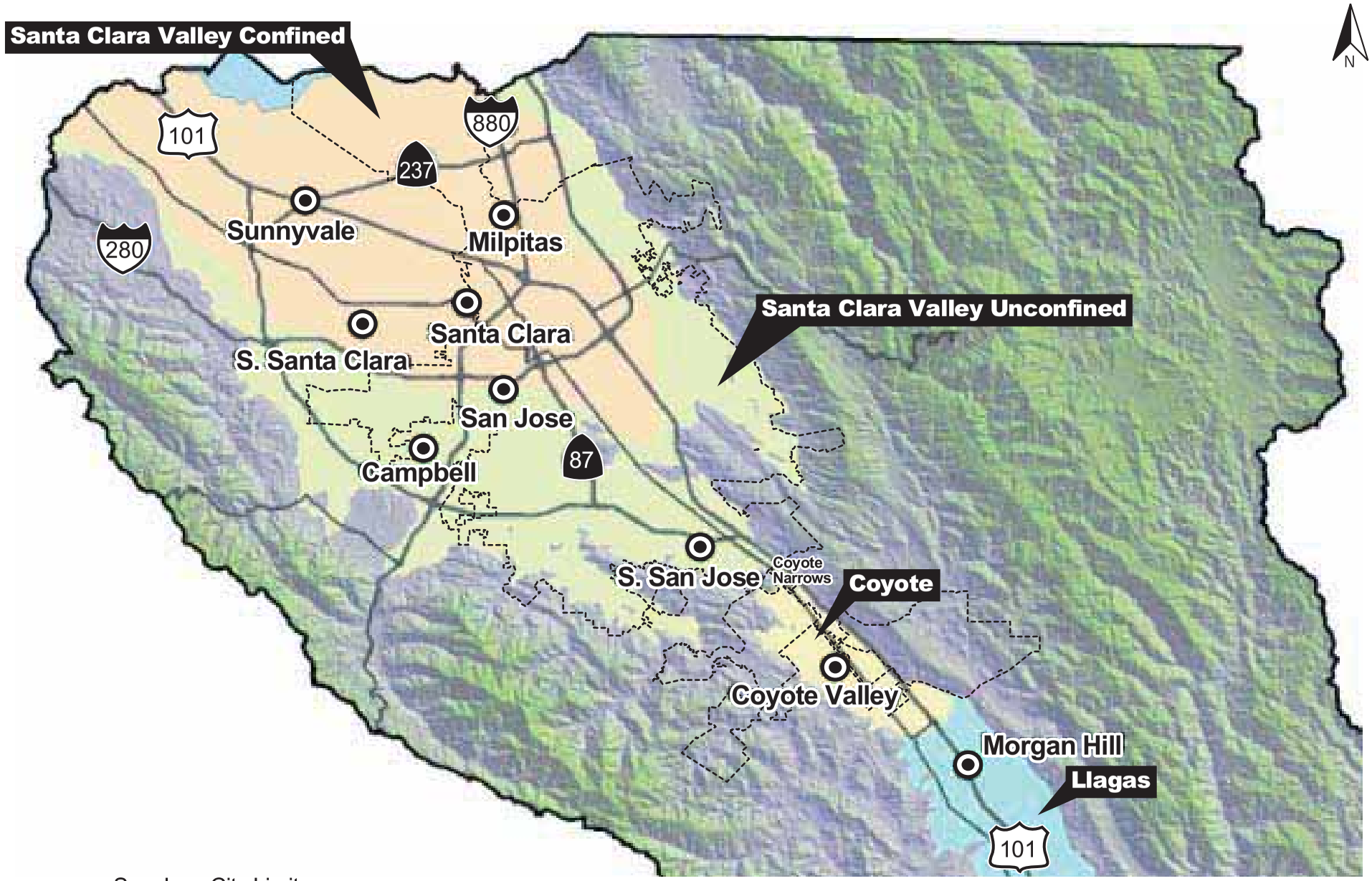
Santa Clara Valley Sub-basin

SJWC, SJMWS and Great Oaks draw water from the Santa Clara Valley sub-basin in the northern part of Santa Clara County (refer to Figure 3.10-2). The basin extends from near Coyote Narrows at Metcalf Road to the County's northern boundary. The basin is 22 miles long and 15 miles wide, with a surface area of 225 square miles. SCVWD estimates that in 2002, 28,800 acre-feet were naturally recharged to the basin and 72,000 acre-feet were artificially recharged to the basin and in 2003, 29,400 acre-feet were naturally recharged and 74,800 acre-feet were artificially recharged. In 2002 and 2003, 104,800 and 96,600 acre-feet of groundwater, respectively, was extracted from the Santa Clara Valley sub-basin.[132] The SCVWD estimates the long-term operational storage capacity[133] of the Santa Clara Valley Sub-basin to be 350,000 acre-feet. The SCVWD has determined that in order to avoid land subsidence groundwater withdrawals in the Santa Clara Valley Sub-basin should not exceed 200,000 acre feet in any one year. As part of the 2010 UWMP process, SCVWD is analyzing the sustainable level of groundwater extraction based on ABAG population projections for the County, water demands of retailers who use groundwater, hydrological conditions, groundwater levels, and the recharge needed to prevent subsidence and saltwater intrusion.

The groundwater elevation in the basin has been steadily rising for the past 40 years under the management of the SCVWD. As of 2000, the groundwater elevation in the Santa Clara sub-basin is within approximately 15 feet of historic levels (1915) after decreasing substantially during the mid-20th century. SCVWD has set up a successful artificial recharge system employing local reservoirs, percolation ponds, and an injection well to supplement the natural recharge of the basin to prevent overdraft. The groundwater basin level is currently high at most SJWC well fields and historically better prepared for the effects of a multi-year drought. Over the past five years, SJWC has annually pumped an average of 55,115 AFY from the Santa Clara Valley sub-basin.

[132] Santa Clara Valley Water District. *Groundwater Conditions 2002/2003*. January 2005. Pages 15-17. Available at: <http://www.valleywater.org/Services/GroundwaterMonitoring.aspx>

[133] The operational storage capacity is defined as the volume of groundwater that can be stored in a basin or sub-basin as a result of management measures.



San Jose City Limits

Monitoring Wells

Source: Santa Clara Valley Water District

SANTA CLARA VALLEY GROUNDWATER SUB-BASINS

FIGURE 3.10-2

Coyote Valley Sub-basin

The Coyote Valley Sub-basin is a narrow structural trough bounded by the Diablo Range to the east and the Santa Cruz Mountains to the West. The Coyote Valley Sub-basin is bordered by the Santa Clara Valley sub-basin to the north and Llagas sub-basin to the south. The surface area of Coyote Valley Sub-basin is approximately 15 square miles, or just less than 10,000 acres. The total available groundwater in the Coyote Sub-basin was examined by SCVWD for the Coyote Valley Specific Plan. With appropriate management, sustainable yield was estimated at 13,000 AFY.

Land Subsidence

The SCVWD estimates that the Santa Clara Valley Sub-basin has experienced as much as 13 feet of non-recoverable land subsidence that necessitated the construction of additional dikes, levees, and flood control facilities to protect properties from flooding. Imported water from the State Water Project and Central Valley Project has increased SCVWD water supplies, reducing the demand on the groundwater basin, and providing water for the recharge of the basin. As a result, the rate of inelastic land subsidence has been curtailed to less than 0.01 feet per year.[134]

San Francisco Public Utilities Commission's Hetch Hetchy System

North San José/Alviso is provided water from the San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy aqueduct. In 2009, the City of San José accepted both a master Water Supply Agreement [the agreement common to all Bay Area Water Supply and Conservation Agency (BAWSCA) agencies], and a Water Sales Contract (specific to SJMWS). The City of San José's current Water Sales Contract is for delivery of up to 5,039 AFY from the SFPUC, this contract is both temporary and interruptible. The Water Supply Agreement with SFPUC is temporary in that it provides an assurance of supply only until December 2018. By December 2018, SFPUC will make further decisions on future water supply beyond 2018, after completing necessary cost analyses and CEQA evaluation/documentation. The supply is interruptible before December 2018 if the SFPUC determines that aggregate use by all BAWSCA agencies will exceed 184 million gallons per day (MGD) in 2018. The supply cannot be reduced or terminated until five years after San José has received notice of SFPUC's intention to reduce or terminate deliveries, or until two years after completion of the relevant CEQA process, whichever is longer. BAWSCA is currently working on a long-term reliable water supply strategy to help ensure future supply to the member agencies. For the purposes of this PEIR, it is assumed that the supply available to SJMWS will remain the same through 2035 based on current and historical water deliveries. Deliveries from the SFPUC have been fulfilled for more than three decades.

As part of the new Water Supply Agreement, SJMWS may purchase excess water, providing the combined purchases of SJMWS and the City of Santa Clara do not exceed nine MGD. SJMWS may also purchase excess water supplies from other BAWSCA agencies. SJMWS is committed to purchasing the maximum amount of water available and reducing its reliance on other sources due to the uncertainties regarding the availability and sustainability of the groundwater basin. The City of San José has historically been able to obtain more water than its contracted amount under normal water supply conditions.

[134] Santa Clara Valley Water District. *Urban Water Management Plan 2005.* December 20, 2005.

3.10.1.2 *Sanitary Sewer/Wastewater Treatment*

Sanitary Sewer

The City's sanitary sewer system includes approximately 2,200 miles of sewer pipelines ranging from six to 90 inches in diameter. The topography of San José permits most of the sewer system to serve the City by gravity. Sixteen sewer pump stations are included in the system, the largest of which is the Lamplighter Pump Station located at North First Street between Headquarters Drive and Holger Way. Sewage from the West Valley Sanitation District (which serves the Cities of Campbell, Saratoga, Los Gatos, Monte Sereno, and unincorporated areas in the West Valley), County Sanitation District 3, and portions of the Cupertino Sanitary District and the City of Santa Clara also flows through the City's wastewater collection system.

Approximately 79 percent of the sewer lines are eight inches and smaller in diameter. The remaining 21 percent, primarily the 10-inch and larger pipes, comprise the trunk and interceptor system, which is the primary network for conveying flows generated from the City's service area to the San José/Santa Clara Water Pollution Control Plant (WPCP). The interceptor system forms the backbone of the City's wastewater collection system and consists of approximately 28 miles of large sanitary sewer pipes ranging from 54-inches to 90-inches in diameter, and conveys the entire flow from the City's service area to the treatment facilities.

The majority of water used in San José ends up in the sanitary sewer system. As a general rule, average wastewater flow rates are approximately 70 to 80 percent of domestic water use. For industries without internal recycling or reuse programs, it can be assumed that approximately 85 to 95 percent of water used in the various operations and processes will become wastewater. As water demand increases due to growth in the city, the need for sanitary sewer service also increases.

The San José 2020 General Plan calls for a level of service (LOS) D for sanitary sewer lines. At LOS D, the sewer main is occasionally running full. New development is required by existing policies to avoid or minimize impacts upon any existing or anticipated LOS E sewer lines by constructing or contributing to the construction of new lines or by waiting for completion of planned sewer line improvements. Sewer lines are inspected and maintained by the Department of Transportation, and are rehabilitated or replaced by the Department of Public Works.

The City's existing sanitary sewer system operates with approximately 95 percent of the trunk sewer pipelines at LOS D or better, under dry weather conditions. The City is currently working on a sanitary sewer master plan that divides San José into five areas (North, Central, South, East, and West). The North, Central and South areas of San José were studied under Phase I of the Master Plan Study (2004). The study identified 37 capacity improvement projects addressing deficiencies in approximately 26 miles of sewer lines.

Since the completion of the Phase I Master Plan, the City Council has approved the update to the North San José Area Development Policy in the Rincon Area and many planned developments and General Plan Amendments. In addition, the *Envision San José 2040 General Plan* is taking a very different approach and framework for land use development from the *Focus on the Future San José 2020 General Plan*. The General Plan's objective is for San José to become a regional job center and introduces the concept of Growth Areas in which to focus new job and housing growth capacity while most of the City would not be planned for additional growth or intensification. During the timeframe of the General Plan, no housing capacity is allocated to the Coyote Valley Urban Reserve

and the South Almaden Valley Urban Reserve. Most of the Growth Areas with capacity for substantial growth are located in the City's South, Central, and North sewer master planning areas.

The Phase I Master Plan will be updated to reflect the proposed land use changes. An update of the Phase I Master Plan is currently underway along with completion of the Phase II Master Plan for the East and West areas of the City. The Master Plan Study will develop a hydraulic model of the trunk sewer system of 10-inch or greater in diameter lines based on the updated land use and flow information. The Master Plan Study will identify existing and future capacity deficiencies of the trunk sewer system and develop a prioritized list of capital improvement projects to address predicted system capacity deficiencies. The updated priority list will replace the projects identified by the initial Phase I Master Plan.

Wastewater Treatment

The San José/Santa Clara Water Pollution Control Plant (WPCP) is a regional wastewater treatment facility serving eight tributary sewage collection agencies and is administered and operated by the City of San José's Department of Environmental Services. The WPCP provides primary, secondary, and tertiary treatment of wastewater and has the capacity to treat 167 million gallons of wastewater per day (mgd) average dry weather influent flow (ADWIF). ADWIF is defined in the current NPDES permit as the maximum of the average daily flow over any five-weekday period between the months of June and October. The design peak hour wet weather flow (PHWWF), according to the NPDES permit, is 271 mgd.[135]

The WPCP is currently operating under a 120 million gallon per day dry weather effluent flow constraint. This requirement is based upon the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) concerns over the effects of additional freshwater discharges from the WPCP on the saltwater marsh habitat, and pollutant loading to the Bay from the WPCP. Approximately ten percent of the plant's effluent is recycled for non-potable uses and the remainder flows into San Francisco Bay.[136]

The average daily dry weather sewage flow treated by the WPCP from sources in the City of San José is approximately 69.8 mgd.[137] The City's share of the WPCP's treatment capacity is approximately 108.6 mgd which, based on current sewage flows, leaves the City with approximately 38.8 mgd of excess treatment capacity.

An Advanced Water Treatment facility designed to enhance the quality of recycled water used in San José, Santa Clara and Milpitas is under construction. Effluent from the adjacent wastewater treatment plant will undergo three additional advanced treatment stages: microfiltration, reverse osmosis and ultraviolet disinfection. The water produced at the Advanced Water Treatment facility will then be blended with recycled water produced for the South Bay Water Recycling program. The blended water will have a much lower level of salinity and can be used on a wider variety of landscapes as well as reduce maintenance costs for industrial users.

---

[135] City of San José, Environmental Services Department. *San José/Santa Clara Water Pollution Control Plan Master Plan Task No. 3 Project Memorandum No. 5 Capacity Rating of Existing Facilities Final Draft*. November 2009.

[136] City of San José, Environmental Services Department. "San José/Santa Clara Water Pollution Control Plant." May 4, 2010. Accessed October 12, 2010. <http://www.sanjoseca.gov/esd/wastewater/water-pollution-control-plant.asp>

[137] Krupp, Matt. City of San José Environmental Services Department. Personal communication. October 2010.

3.10.1.3 *Storm Drainage*

Storm Sewer

The City of San José storm drainage system is comprised of a vast network of storm drain inlets, manholes, pipes, outfalls, channels, and pump stations designed to protect infrastructure and the traveling public from flood waters during storm events. The various components of the storm drainage system function collectively to collect, convey, and discharge stormwater runoff to receiving water bodies. In general, storm water runoff is intercepted by pavement surfaces and channeled along curbs and gutters to receiving storm drain inlets. Inlets are usually placed at low points in the gutter grade, at intersections, and along side streets to limit the spread of water onto roadways and to reduce the rate of runoff. The underground collection system consists of approximately 1,250 miles of reinforced concrete pipes varying in size from 12 to 144 inches in diameter that function by gravity to carry untreated stormwater to local creeks and rivers. Collected stormwater runoff is discharged to the creeks and rivers via storm outfall structures. The creeks and rivers, in turn, flow to the San Francisco Bay. In low lying areas of the City, stormwater pump stations are employed to facilitate drainage when gravity drainage is not possible or feasible.

To date, most of the City's storm system improvement projects have been identified and selected for implementation based on public complaints, City staff observation, and historical knowledge of chronic/re-occurring drainage problems. These improvement projects are funded by the Storm Sewer Capital Improvement Program (CIP). The Storm CIP Program has a $25 million five-year budget that provides capacity, rehabilitation and minor neighborhood storm drainage improvements. Between two to three small to medium neighborhood capacity improvement projects are completed each year based on the current funding level. It is important to note that while the Storm CIP program provides a short-term solution for dealing with minor neighborhood drainage problems, it does not address system-wide capacity needs stemming from significant development activities that have occurred over the past few decades and those planned for future years.

Most new storm drain systems built within the City are installed and paid for by private development projects (averaging less than five miles of new storm sewers per year). Although developers are required to design their on-site storm drain system to meet the 10-year design standard, they are not required to upgrade the downstream (existing) systems to which their system connects to meet this standard. However, lack of capacity within an existing downstream system can trigger the need for upgrades in the storm sewer system if a capital project has not been identified and/or funded for the area within the project timeline. It is estimated that over 95 percent of the City's storm drain system is designed for the three-year storm event. The condition and capacity of the receiving system and end-of-the-pipe outfalls are not regularly assessed.

Storm Pump Stations

The average age of the City's 28 pump stations is over 36 years. The standard design life of the mechanical and electrical components of a pump station is 10 to 25 years. Approximately 25 percent of the City's pump stations are already beyond the 30-year design life with this estimate continuing to climb in coming years. To address this issue, the Department of Public Works and Department of Transportation have been working together since 2005 to develop a plan for prioritizing and rehabilitating the City's storm pump stations. Through this partnership, one to two pump station projects have been completed each year, however, funding for this work is limited and subject to approval on a year-to-year basis. The typical improvements include but are not limited to, replacing

pumps and electrical control panels, retrofitting wet wells, sluice gates and/or flap gates, and outfitting pump stations with communications equipment to enable remote monitoring. Completed and planned capital improvement projects for storm pump stations are shown in Table 3.10-1.

Table 3.10-1
Storm Pump Station Rehabilitation and Replacement Plan

Project Location	Pumping Capacity	Fiscal Year Completion
Willow Street Pump Station	5.9 cfs	2005-06
Alma Avenue Pump Station	7.8 cfs	2007-08
Bird Avenue Pump Station	14.5 cfs	2007-08
Gold Street Pump Station	30 cfs	2009-10
Oakmead Pump Station, Ph 1	735 cfs	2009-10
Oakmead Pump Station, Ph 2	735 cfs	2010-11
Oakmead Pump Station, Ph 3	735 cfs	2011-12
River Oaks Pump Station	67 cfs	2010-11
Liberty Street Pump Station	0.2 cfs	2012-13

Notes: cfs = cubic feet per second

Storm Drainage System Master Plan

Due to a lack of funding in the past, the City does not have a current Storm Master Plan. The latest Storm CIP Program Budget includes 3.8 million dollars over the next three years in order to initiate a Citywide Storm Master Planning effort. An estimated total of three to four million dollars will be needed to accurately study and identify storm system capital improvement needs, including potential pump stations, on a citywide level. In response to the current plan to transform the North San José area from a traditional industrial park into a multi-faceted residential, commercial, high-tech research and development business district, the master plan effort will include a comprehensive study of the North San José area. In addition, the master plan effort will include an assessment of the stormwater infrastructure needs based on the quality measures and objectives established by the Municipal Regional Stormwater NPDES Permit.

Charcot Pump Station

One new pump station will be needed on the storm drainage system that drains the Charcot Avenue area of the North San José to handle the increased runoff from planned and approved new development. The new Charcot Pump Station would be located next to Coyote Creek in the vicinity of Charcot Avenue, with a 10-year storm design capacity of 300 cubic feet per second or a 100-year storm design capacity of 480 cubic feet per second within a catchment area of approximately 427 acres within North San José, bounded on the south by US 101, on the east by I-880, on the north by Charcot Avenue, and on the west by North First Street.

3.10.1.4 *Solid Waste Service*

The City of San José currently generates approximately 1.7 million tons of solid waste annually. In 2008, approximately 60 percent of the waste generated was diverted through a variety of programs including residential curbside recycling and yard trimmings collection programs, civic recycling, and

the construction demolition and diversion program. The remaining 40 percent of the waste generated is sent to the landfill. Of the amount landfilled, approximately 260,000 tons comes from residential sources, 254,000 tons comes from commercial, industrial and institutional sources, and 195,000 tons comes from construction and demolition sources.[138]

Residential solid waste accounts for 25 percent of the City's waste generation with non–residential uses (including construction and demolition waste) comprising the other 75 percent. The City of San José's Construction & Demolition Diversion Deposit Program (CDDD) is an incentive program to encourage the recovery of debris from construction and demolition projects. The City collects a deposit that is fully refundable with proper documentation that the construction and demolition (C&D) debris has been diverted from burial in the landfill.

Solid waste and recycling collection services for businesses in San José are provided by various franchised waste and recycling haulers. The City of San José has, in the past, offered businesses a free market system for garbage and recycling and businesses can chose a hauler and/or recycler that best suits the needs of their business. Non-residential waste may be disposed at any of four privately owned landfills in San José, or at other landfills outside the County. The City is currently evaluating changes in this system, including required collection by exclusively franchised haulers, in order to increase rates of diversion of the non-residential waste stream.

According to Santa Clara County's 2007 five-year countywide integrated waste management plan review report (which is based on 2005 data), the County has adequate disposal capacity (i.e., greater than 15 years).[139]

3.10.1.5 *Regulatory Framework*

Federal

Clean Water Act

The major federal legislation governing water quality is the Clean Water Act, as amended by the Water Quality Act of 1987. The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the Clean Water Act, the EPA has implemented pollution control programs such as setting wastewater standards and water quality standards for all contaminants in surface waters.

Three key regulatory programs are outlined in the Clean Water Act. Sections 303 and 304 of the Act call for the establishment of water quality standards, criteria, and guidelines, including for wastewater effluent. Activities that may result in discharges to Waters of the United States and that require a federal permit are regulated under Section 401 of the Act.

[138] City of San José, Environmental Services Department. "Waste Prevention." January 7, 2009. Accessed May 4, 2010. <http://www.sjrecycles.org/waste_prevention.asp>

[139] Santa Clara County. *Five-Year CIWMP/RAIWMP Review Report*. 22 August 2007. Accessed May 4, 2010. <http://www.sccgov.org/SCC/docs%2FIntegrated%20Waste%20Management%20%28DIV%29%2FSCC%202nd%205yr%20rpt%202006%20rev4.pdf>

National Pollutant Discharge Elimination System (NPDES) Permit Program

The EPA's regulations, as called for under Section 402 of the Clean Water Act, include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into waters of the United States (e.g., streams, lakes, bays, etc.). These regulations are implemented at the regional level by water quality control boards, which for the San José area is the San Francisco Bay RWQCB.

The RWQCB is authorized to protect the quality of surface waters and groundwater by issuing and enforcing compliance with the NPDES permits and by preparation and revision of the Regional Water Quality Control Plan, also known as the Basin Plan.

The NPDES permit, though a federal program, is administered on the local level and will therefore be discussed under regional regulations.

State of California

Senate Bill 610

Senate Bill 610 (SB 610), codified at Water Code Section 10910 et seq., requires that certain water supply and demand information be prepared for "projects" which are the subject of an EIR. Water Codes Section 10912 defines a "project" as, among other things, any proposal subject to discretionary approvals that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

SB X7 – 7

Senate Bill X7 – 7, the Delta and Water Reform Legislation requires the state to achieve 20 percent reduction in urban per capita water use by December 31, 2020, requires agricultural water management plans and efficient water management practices for agricultural water suppliers, and promotes expanded development of sustainable water supplies at the regional level. Urban water retail suppliers must determine their baseline water use and set reduction targets according to specified requirements. Urban retail water suppliers have the option to monitor and report compliance on an individual or regional basis. Reporting is done through agencies' Urban Water Management Plans and must include baseline water use, reduction targets and compliance analyses.

State Water Resources Control Board

The State of California's Porter-Cologne Water Quality Control Act provides the basis for water quality regulation within California and the Act assigns primary responsibility for the protection and enhancement of water quality to the State Water Resources Control Board (SWRCB) and the nine RWQCBs. The SWRCB protects water quality by setting statewide policy, coordinating and supporting the Regional Water Board efforts, and reviewing petitions that contest Regional Board actions. The State Board is also solely responsible for allocating surface water rights.

SWRCB Order No. 2006-0003 – Statewide General Waste Discharge Requirement for Sanitary Sewer Systems

Order No. 2006-0003 requires public sewer agencies to develop and implement a Sewer System Management Plan (SSMP) aimed at reducing sanitary sewer overflows (SSOs). The Order also requires agencies to report all SSOs to the State Water Resources Control Board. The State's SSMP Guidelines require best management practices for sanitary sewer systems, including providing adequate capacity for peak wet weather flows, funding for required capacity improvements, and appropriate design standards for sewer facilities.

California Green Building Standards Code

In January 2010, the State of California adopted the California Green Building Standards Code (CALGreen) that establishes mandatory green building standards for all buildings in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. These standards include a mandatory set of minimum guidelines, as well as more rigorous voluntary measures, for new construction projects to achieve specific green building performance levels.

Mandatory measures include:

- Reducing indoor water use by 20 percent
- Reducing wastewater by 20 percent
- Recycling and/or salvaging 50 percent of nonhazardous construction and demolition debris
- Providing readily accessible areas for recycling by occupant

Local communities may institute more stringent versions of the code if they choose. The code went into effect as part of a local jurisdiction's building code on January 1, 2010.

Assembly Bill 939

Assembly Bill 939 established the California Integrated Waste Management Board and required all California counties to prepare integrated waste management plans. AB 939 also required all municipalities to divert 25 percent of their solid waste from landfill disposal by January 1, 1995. Fifty percent of the waste stream was to be diverted by the year 2000.

The City of San José currently generates approximately 1.7 million tons of solid waste annually, and diverts approximately 60 percent of its waste streams through a variety of waste diversion programs including curbside recycling and yard waste collection and composting.

California Air Resources Board Scoping Plan – Mandatory Commercial Recycling Measure

The California Air Resources Board (CARB) Scoping Plan for the California Global Warming Solutions Act of 2006 (AB 32) was adopted with a Mandatory Commercial Recycling measure designed to achieve a reduction in greenhouse gas emissions of five million metric tons of carbon dioxide equivalents.

According to 2008 Statewide Waste Characterization data, the commercial sector generates more than half of the solid waste in California (approximately 68 percent of waste disposed). While

significant commercial recycling already occurs, much of the commercial sector waste disposed in landfills is clean enough to be recycled. The private sector (neither businesses nor residents) is not directly subject to the requirements of the Integrated Waste Management Act of 1989 (AB 939) to divert waste from landfills; the law only applies to local governments. The significant recycling programs implemented by local governments all over California have, however, focused on residential waste generators.

As a result, CARB'S Mandatory Commercial Recycling measure focuses on increased commercial waste diversion as a method to reduce greenhouse gas emissions. To achieve the measure's objective, an additional two to three million tons of materials will need to be recycled from the commercial sector by the year 2020 and beyond.

The California Department of Resources Recycling and Recovery (CalRecycle) is engaged in an informal rulemaking process while developing the mandatory commercial recycling measure. CalRecycle and CARB anticipate that the commercial recycling regulation will be in effect January 2012, and jurisdictions and businesses would likely be required to implement the commercial recycling programs developed for this regulation in July 2012.[140]

Regional

NPDES Wastewater Permit

As discussed in Section 3.7, Hydrology and Water Quality, to discharge wastewater, an NPDES wastewater permit is required to discharge sewage into the environment. Wastewater is water containing wastes from residential, commercial, and industrial processes. Municipal wastewater contains sewage, gray water (e.g., water from sinks and showers), and sometimes industrial wastewater. The WPCP's NPDES permit (No. CA0037842) sets limits for two types of pollutants contained in wastewater – conventional and toxic. Conventional pollutants are represented by biological oxygen demand (BOD), nutrients, and solids. Toxic pollutants are represented by heavy metals, organics, pesticides and solvents. Treated wastewater effluent from the WPCP is discharged into Artesian Slough, which is a tributary to Coyote Creek and South San Francisco Bay. The WPCP is currently permitted to discharge 120 million gallon per day dry weather effluent flow.

Municipal Regional Stormwater NPDES Permit

The EPA has delegated oversight of NPDES requirements for municipal urban runoff discharges in California to the SWRCB and the nine RWQCB offices. In 2009, the San Francisco Bay Regional Water Quality Control Board issued a regional NPDES permit (NPDES Permit Order R2-2009-0074, NPDES Permit No. CAS612008) for stormwater consolidating requirements for all Bay Area municipalities and flood control agencies that discharge directly to San Francisco Bay. Some provisions require regional action and collaboration, but others relate to specific municipal activities over which the municipalities have individual responsibility and control. The current permit is effective for five years, until October 14, 2014.

Under the Municipal Regional Stormwater NPDES Permit (also referred to as MRP), development projects that create, add, or replace 10,000 square feet or more of impervious surface area are required to control post-development storm water runoff through source control, site design, and

[140] CalRecycle. "Mandatory Commercial Recycling". October 13, 2010. Accessed November 12, 2010. <http://www.calrecycle.ca.gov/climate/Recycling/default.htm>

treatment control best management practices (BMPs). Additional requirements must be met by certain large projects that create one acre or more of impervious surfaces (see Hydromodification discussion below). Beginning December 1, 2011, the impervious surface threshold for Regulated Projects will be decreased from 10,000 square feet to 5,000 square feet for special land use categories (e.g., auto services facilities, gas stations, restaurants, parking lots) and most Regulated Projects will have to treat stormwater runoff with additional treatment measures, such as harvesting and re-use, infiltration, evapotranspiration, or biotreatment.

Hydromodification Management Plan

Hydromodification is a change in stormwater runoff characteristics from a watershed caused by changes in land use conditions (i.e., urbanization) that alter the natural cycling of water. Changes in local land use can cause runoff volumes and velocity to increase which can result in a decrease in natural vegetation, changing of river/creek bank grades, soil compaction, and the creation of new drainages.

In addition to water quality controls, the Regional Municipal NPDES permit has hydromodification controls as defined in the Hydromodification Management Plan (HMP). The NPDES permit requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams, and creeks. Projects may be deemed exempt from the permit requirements if they do not meet the size threshold and they do not create an increase in impervious surface over pre-project conditions, drain into tidally influenced areas or directly into the Bay, drain into hardened channels, or are infill projects in subwatersheds and/or catchments that are 65 percent or more impervious based on the current SCVURPPP subwatersheds and catchments map.

City of San José

San José 2020 General Plan

Existing policies in the City of San José General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Relevant General Plan Policies that directly address reducing and avoiding utilities and service system impacts include the following:

- Economic Development Policy #7
- Urban Design Policy #2
- Level of Service Policies #1-3
- Level of Service, Sanitary Sewer System Policies #6
- Level of Service, Sewage Treatment Policies #7-10
- Level of Service, Other Services Policies #16 and 20
- Infrastructure Management Policies #1-2
- Solid Waste Policies #1-4
- Water Resources Policies #2, 4, 5, 10, 11, and 13

Urban Environmental Accords

On November 1, 2005, San José's City Council signed on to the United Nations Urban Environmental Accords, a declaration of participating city governments to build ecologically sustainable, economically dynamic, and socially equitable futures for their urban citizens. To date, 100 cities worldwide have signed on to the Accords including 23 in North America and 12 in California (which includes the City of San José).

The Urban Environmental Accords includes 21 actions in seven different areas such as energy, waste reduction, and water (including wastewater reduction), that would help improve the quality of life for residents and preserve San José's environment and resources. The actions that relate to utilities and service systems are:

Waste Reduction

- Establish a policy to achieve zero waste to landfills and incinerators by 2040.
- Adopt a citywide law that reduces the use of a disposable, toxic, or non-renewable product category by at least fifty percent in seven years.
- Implement "user-friendly" recycling and composting programs, with the goal of reducing by 20 percent per capita solid waste disposal to landfill and incineration in seven years.

Water

- Develop policies to increase adequate access to safe drinking water, aiming at access for all by 2015. For cities with potable water consumption greater than 100 liters per capita per day, adopt and implement policies to reduce consumption by ten percent by 2015.
- Protect the ecological integrity of the city's primary drinking water sources (i.e., aquifers, rivers, lakes, wetlands and associated ecosystems).
- Adopt municipal wastewater management guidelines and reduce the volume of untreated wastewater discharges by 10 percent in seven years through the expanded use of recycled water and the implementation of a sustainable urban watershed planning process that includes participants of all affected communities and is based on sound economic, social, and environmental principles.

Post-Construction Urban Runoff Management Policy 6-29

The City of San José's Post-Construction Urban Runoff Management Policy 6-29 requires all new and redevelopment projects to implement post-construction BMPs and Treatment Control Measures (TCMs). This policy also established specific design standards for post-construction TCMs for projects that create, add, or replace 10,000 square feet or more of impervious surfaces. Policy 6-29 will need to be updated as changes to the City's NPDES Municipal Permit requirements are made.

Post-Construction Hydromodification Management Policy 8-14

The City of San José's Post-Construction Hydromodification Management Policy 8-14 requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams, and creeks. The policy requires these projects to be designed

to control project-related hydromodification through a HM plan. Projects are not required to include hydromodification controls for peak runoff under this policy if they: 1) do not create an increase in impervious surface over pre-project (existing) conditions; or 2) are located within catchment areas that drain to hardened channels that extend continuously to the Bay, or are located within tidally-influenced creek areas or Bayland areas; or 3) are located within catchment and subwatershed areas that are greater than or equal to 65% impervious; or 4) drain to an underground storm drain that discharges directly to the San Francisco Bay. Policy 8-14 has been updated to reflect current NPDES Municipal Permit requirements and may change further based on future permit requirements.

Sanitary Sewer Level of Service Policy 8-7

The City's current General Plan Policy and the adopted Council Policy that guides its implementation, Sanitary Sewer LOS Policy 8-7, was approved in 1982 to ensure that an adequate and safe level of public services was provided to residences and businesses, and to prevent sewage spills from the collection system that could be a threat to public health and safety. The Sanitary Sewer LOS Policy established LOS D as the City's design standard. LOS D defines a condition in which the sewer main is occasionally running full; however, problems from completely surcharged lines would not exist and sewage flows could be added to these lines with minimal effect on sewer life or maintenance costs. If a proposed development would create a level of service lower than LOS D or would add to sewer lines functioning at LOS E or F, it must be conditioned to either install improvements to maintain LOS D or to serve its own needs, or wait to proceed until construction of necessary capacity occurs through the City's Capital Improvement Program. This policy, as amended, would bring City policies into consistency with state and federal laws, and will continue to ensure that adequate sanitary sewer capacity is available when it is needed, but does not allow construction of significant excess capacity that could be growth inducing beyond the proposed General Plan.

San José Green Vision

In October 2007, the City Council adopted the *San José Green Vision*. The *Green Vision* is a 15-year plan to transform San José into a world center of Clean Technology, promote cutting-edge sustainable practices, and demonstrate that the goals of economic growth, environmental stewardship and fiscal responsibility are inextricably linked. The goals of the *Green Vision* that are applicable to utilities and service systems are to:

- Build or retrofit 50 million square feet of green buildings;
- Divert 100 percent of the waste from our landfill and convert waste to energy;
- Recycle or beneficially reuse 100 percent of our wastewater (100 million gallons per day);

Zero Waste Resolution

In October 2007, the City Council adopted a Zero Waste Resolution (No. 74077), which set a goal of 75 percent waste diversion by 2013 and a goal of zero waste by 2022 for the City. "Zero Waste" is a perception change. It requires rethinking what is traditionally regarded as garbage and treating all materials as valued resources instead of items to discard. Zero waste entails shifting consumption patterns, more carefully managing purchases, and maximizing the reuse of materials at the end of their useful life. Zero waste takes into account the whole materials management system, from product design and the extraction of natural resources, to manufacturing and distribution, to product

use and reuse, to recycling or disposal. The Zero Waste Resolution identified the City's zero waste principles as:

- Improving "downstream" reuse and recycling of end-of-life products and materials to ensure their highest and best use;
- Pursuing "upstream" redesign strategies to reduce the volume and toxicity of discarded products and materials while promoting less wasteful lifestyles;
- Supporting the reuse of discarded products and materials to stimulate and drive local economic workforce development; and
- Preserving land for sustainable development and green industry infrastructure.

Zero Waste Strategic Plan

The City of San José Environmental Services Department prepared the Integrated Waste Management Zero Waste Strategic Plan in November 2008. The Zero Waste Strategic Plan supports several Green Vision Goals, but its primary focus is to identify the path to achieve zero waste. The Zero Waste Strategic Plan identifies policies, programs, and facilities to help the City reach its goal. To achieve zero waste, the City has adopted the following phased approach:

- Phase 1 – voluntary actions, education, and creation of incentives;
- Phase 2 – new programs and advocacy; and
- Phase 3 – bans, mandates, and legislation.

San José has been active over the years in phase one and two activities, but to meet zero waste goals, the City may need to focus on bans, mandates, advocacy, and legislation.

To achieve the City's short-term goal of diverting 75 percent of waste from landfills, the Zero Waste Strategic Plan identifies that the City needs to:

- Enhance residential recycling;
- Redesign the commercial waste system to provide recycling and composting services;
- Enhance the construction and demolition debris recycling;
- Evaluate anaerobic digestion of food scraps at the WPCP; and
- Pursue opportunities to support Extended Producer Responsibility initiatives and target reduction of single-use carryout bags as well as non-recyclable/non-compostable take-out food packaging.

To achieve the long-term goal of zero waste, the Zero Waste Strategic Plan identifies that the City needs to:

- Modify existing revenue streams to mitigate funding lost from zero waste efforts;
- Support implementing zero waste policies locally, regionally, and statewide;
- Continue implementing mixed waste recycling of single-family residential garbage and recycling processing residue;
- Develop and strengthen markets for recoverable and reusable materials, and lead by example;
- Promote the future development of energy conversion technologies for converting residual wastes into energy; and
- Educate the public about the benefits of reducing wasteful consumption.

Environmentally Preferable Procurement Policy (City Council Policy 4-6)

The goal of the Environmentally Preferable Procurement Policy (EP^3) is for the City to utilize its purchasing power to influence commerce to offer goods and services with better environmental performance, and to procure products and services from manufactures and suppliers that demonstrate a high level of environmental and social responsibility.

By incorporating environmental considerations into public purchasing, the City intends to reduce impacts to human health and the environment, reduce its carbon footprint, remove unnecessary hazards from its operations, reduce costs and liabilities, fulfill its commitments under the City's Green Vision and Urban Environmental Accords, meet LEED requirements for U.S Green Building Council (USGBC) certification, and improve the environmental quality of the region.

This policy guides the City's efforts to procure environmentally sustainable products and services. This policy includes purchasing policies regarding product content, extended producer responsibility, environmental product standards, and other environmental factors.

Green Building Policy (8-13)

The Green Building Policy fosters long-term social, economical, and environmental sustainability in building and development while making green building the standard practice in San José and celebrating sustainability as a core value to the community. The vision for Green Building in San José is a place where the people have knowledge and opportunities to build and occupy dwellings that have a maximum impact on the well being of the occupants and minimal impact on the environment. The Green Building Policy goals center on five main categories: sustainable sites, energy and atmosphere, water efficiency, materials and resources, and indoor environmental quality.

Private Sector Green Building Policy (6-32)

In October 2008, the City adopted the Private Sector Green Building Policy (6-32) that establishes baseline green building standards for private sector new construction and provides a framework for the implementation of these standards. This policy requires that applicable projects achieve minimum green building performance levels using the Council adopted standards.

3.10.2 Thresholds of Significance

For the purposes of this PEIR, a utilities and service systems impact is significant if implementation of the proposed *Envision San José 2040 General Plan* would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Comply with federal, state, and local statutes and regulations related to solid waste.

3.10.3 Utilities and Service Systems Impacts

3.10.3.1 *Water Supply*

Water Supply Reliability

Delta Pumping Restrictions

Restrictions imposed by the biological opinions issued by the US Fish and Wildlife Service (December 2008) and the National Marine Fisheries Service (June 2009) to protect the Delta Smelt and other endangered fish affect the ability of the SWP and CVP to deliver imported water to multiple parts of the State, including Santa Clara Valley. Due to the December 2008 US Fish and Wildlife Services' Delta smelt Biological Opinion, SCVWD's CVP and SWP water supplies have been reduced by approximately 15 to 30 percent, depending on water year conditions. In addition, a recent Biological Opinion on salmon has the potential to further reduce imported water supply allocations. Water supply issues associated with the San Joaquin Delta will continue to be a concern until these endangered species concerns are resolved. The SWP allocation was 50 percent for 2010 which was a higher allocation than in the previous two years of drought and represented a 13 percent reduction compared to an average delivery year. The Central Valley Project (CVP) allocation was 75 percent for south of Delta Municipal and Industrial contractors.[141]

To address the biological impacts of continued Delta pumping by the SWP and CVP, the Bay Delta Conservation Plan (BDCP) is being prepared by State, federal and local agencies. The BDCP's purpose is to provide for the conservation of at-risk species in the Delta and improve the reliability of the State's water supply system. The BDCP is being developed under the Federal Endangered

[141] Santa Clara Valley Water District. "Water Tracker". October 2010. Accessed November 15, 2010. <http://www.valleywater.org/Services/WaterTracker.aspx>

Species Act (ESA) and the California Natural Community Conservation Planning Act (NCCPA) and will:

- Identify conservation strategies to improve the overall ecological health of the Delta;
- Identify ecologically friendly ways to move fresh water through and/or around the Delta;
- Address toxic pollutants, invasive species, and impairments to water quality; and
- Provide a framework and funding to implement the plan over time.

The DWR is the lead agency for an EIR/EIS that is being prepared to evaluate the potential effects of the BDCP. The BDCP is scheduled to be available for public review in summer 2011 and the Draft EIR/EIS is expected to be available for public review and comment in 2012.[142]

Effects of Climate Change

Global climate change represents a serious threat to water supply and the total impact is not fully understood or quantified. According to the Intergovernmental Panel on Climate Change global warming could significantly alter California's hydrologic cycles and water supply. These impacts could include decreased Sierra snowpack, increased temperatures, more severe droughts, sea level rise, and increased floods. Climate models indicate that precipitation as rainfall is expected to increase as snowfall decreases over the Sierra Nevada and Cascade mountain ranges. A 25 percent decrease in the Sierra Nevada snowpack is expected by 2050 which directly impacts the volume of imported water sources for the SJMWS and SJWC and the availability of a sustainable groundwater yield for all three water retailers in San José. Sierra snowmelt feeds reservoirs like Hetch Hetchy and rivers that flow to the Delta, which are the sources of SFPUC and SCVWD imported water, respectively.

Climate change may also increase regional temperatures and cause more variable weather patterns. The minimum daily temperature in California has increased over one degree Fahrenheit and continues to rise. In addition to decreasing snowpack, these increased temperatures may also increase water demand. Higher temperatures could increase water demand throughout the state through increased agricultural irrigation and in San José through increased outdoor residential and commercial irrigation. Changing weather patterns could cause more severe flooding and longer droughts.

According to the Department of Water Resources, the Sacramento-San Joaquin Delta is at risk from climate change. More severe flooding and a rising sea level threaten the waterways that serve as a vital link in the state's water system. Additional threats to water supply and the Delta are discussed below. The State of California and Department of Water Resources (DWR) are working to reduce the effects of climate change both through reduction of emissions and strategies to address the impacts of climate change. The State of California plans to reduce its impact on climate change through the implementation of AB 32 which requires cities to reduce greenhouse gas emissions (refer to Section 3.15 Greenhouse Gas Emissions). DWR voluntarily joined the California Climate Action Registry, a tool to track and report emissions. DWR has developed strategies to address impacts from climate change including increased monitoring of climatologic and water resource conditions, reduction of greenhouse gas emissions from water management activities, studying the combined

[142] Bay Delta Conservation Plan. "Plan Development Schedule". 2010. Accessed November 15, 2010. <http://baydeltaconservationplan.com/Schedule/PlanDevelopmentSchedule.aspx>

effects of increased atmospheric carbon dioxide and increased temperature (to predict future water demand), and adaptation of statewide water management systems by incorporating more flexibility.

Imported Water Delivery

The DWR has estimated potential SWP deliveries under future conditions in 2029 based on Delta pumping restrictions and climate change scenarios.[143] Future water deliveries are estimated using probabilities, i.e., the probability that deliveries will exceed a certain quantity of water in a given year. For instance, under current conditions, DWR estimates there is a 75 percent chance that SWP deliveries will be above 2,397,000 AFY, or alternatively that there is a 25 percent chance that deliveries will be below this amount. Under future conditions accounting for pumping restrictions and climate change in 2029, DWR estimates there is a 75 percent chance that SWP deliveries will be above 2,137,000 AFY, or 25 percent chance that deliveries will be below this amount. Comparing current and future (2029) conditions under the 75 percent probability scenario, DWR estimates a 260,000 AFY reduction in SWP deliveries (i.e. the difference between 2,397,000 and 2,137,000 AFY), or slightly more than 10 percent decrease in deliveries. Both the State and federal systems' watersheds are expected to experience similar hydrological changes due to climate change, and both face similar Delta pumping restrictions, therefore it is reasonable to assume similar future reductions to CVP deliveries.

Water Use Impacts

CEQA requires that an EIR disclose and consider the impacts of supplying water to a proposed project, which in this case is the *Envision San José 2040 General Plan*.[144] The EIR must identify current and future sources of supply, disclose any uncertainty about the reliability of future supplies, and if needed, where additional water is likely to come from, and what environmental impacts would occur from developing the additional water sources and delivering the water. An EIR is not required to demonstrate that the project is definitely assured water through signed, enforceable agreements with a provider and already built or approved treatment and delivery facilities; however, it must show at least an approximate long-term sufficiency in supply, including the foreseeable cumulative demands on the planned water supply from other water users.

Projected Countywide Demand

The SCVWD's baseline projection in the Integrated Water Resources Planning Study estimates Countywide water demand to grow from approximately 382,000 acre-feet per year to approximately 475,000 acre-feet per year in 2040, an increase of approximately 24 percent. Over this same period, Countywide population is expected to grow by 54 percent, from 1.7 million people to 2.6 million. San José's population growth and associated water demand, as represented by the proposed *Envision San José 2040 General Plan*, are included in these projections. Although the SCVWD forecasts that supplies will be adequate to meet needs in wet and average years, there are expected to be dry-year shortages that grow over time from approximately 50,000 acre-feet in 2010 to 75,000 acre-feet by 2040.[145]

---

[143] California Department of Water Resources, Bay-Delta Office. *Draft State Water Project Delivery Reliability Report*. 2009. Pages 50-51. Available at <http://baydeltaoffice.water.ca.gov/swpreliability/>

[144] Vineyard Area Citizens for Responsible Growth, et al. v. City of Rancho Cordova (February 1, 2007) 53 Cal.Rptr.3d 821. Available at: <http://ceres.ca.gov/ceqa/cases/2007/>

[145] Santa Clara Valley Water District. *Integrated Water Resources Planning Study 2003*. December 2005. Available at: <http://www.scvwd.dst.ca.us/Services/WaterSupplyPlanning.aspx>

Projected Water Demand and Supply

The three water retailers serving the City of San José rely on four sources of water supply including imported water from the SFPUC and imported water treated by SCVWD, local surface water treated by SCVWD, groundwater, and recycled water. The SCVWD provides treated surface water directly to the SJWC and SJMWS and also indirectly supplies groundwater to all three water retailers by recharging the Santa Clara Valley sub-basin (of which San José is one of multiple users) with imported Delta water. These four sources would remain the primary sources of water over the life of the proposed *Envision San José 2040 General Plan*. Conservation is also anticipated to be necessary in order to ensure supply meets the increased demand resulting from the proposed General Plan. Estimates of future water demand and supply are shown in Table 3.10-2. Due to unanswered requests for preparation of a Water Supply Assessment to address increased growth with the General Plan, information regarding future water supply and demand for Great Oaks Water Company is based on their 2005 Urban Water Management Plan.

Table 3.10-2
Water Demand Projections by Retailer (AFY)

Sources	2015	2020	2025	2030	2035
San José Water Company[1]					
SCVWD Treated Water	93,109	101,628	111,002	121,194	132,451
Groundwater	61,786	66,789	72,294	78,280	84,892
Local Surface Water	12,094	12,094	12,094	12,094	12,094
Recycled Water[2]	1,950	2,261	2,621	3,038	3,522
Total w/out Conservation	168,938	182,771	198,011	214,606	232,959
Conservation	-11,012	-18,449	-27,292	-37,492	-49,453
Total with Conservation *(Subtotal)*	157,926	164,322	170,719	177,114	183,506
2005 UWMP Total[3]	165,278	172,795	178,577	183,958	--
San José Municipal Water System					
SFPUC	5,039	5,039	5,039	5,039	5,039
SCVWD Treated Water	16,185	16,592	17,019	17,500	17,500
Groundwater (Santa Clara)	3,822	5,290	6,671	8,216	10,348
Groundwater (Coyote)	1,945	2,698	3,580	4,593	5,540
Recycled Water	5,148	5,609	6,150	6,770	7,351
Subtotal	32,138	35,227	38,459	42,119	45,779
Great Oaks Water Company					
Groundwater (Santa Clara)	20,180	23,279	26,125	29,209	31,030
Subtotal	20,180[4]	23,279[4]	26,125[4]	29,209[4]	31,030[5]
Total	210,244	222,828	235,303	248,442	260,315

Notes: [1] Projections for SJWC were based on *Envision San José 2040* Scenario 4 which was shown to have the highest demand of any of the growth scenarios considered by the Task Force.
[2]SJWC has estimated that recycled water usage will increase by three percent annually. If recycled water demands increase due to expansion of the recycled water system, then there should be a corresponding decrease in potable water usage.
[3]Assumes conservation throughout entire system.
[4]Great Oaks' water demand estimate from the 2005 Urban Water Management Plan which assumes different quantities of development than currently proposed by the *Envision San José 2040 General Plan*.
[5]Future demand determined using San José Water Company demand factors.

San José Water Company

The amount of surface and groundwater identified in Table 3.10-2 is based on a five year annual average percentage. The groundwater and SCVWD Treated Water projections reflect SJWC's plan to acquire additional water needed for future development by increasing well production within the distribution system and by purchasing additional treated water from SCVWD and recycled water from the South Bay Water Recycling Program. The overall long-term strategy for groundwater as discussed in the 2003 SCVWD Integrated Water Resource Planning Study is to maximize the amount of water available in the groundwater basins to protect against drought and emergencies. SCVWD seeks to maximize the use of treated local and import water when available.

SJWC's 2005 UWMP assumed an overall increase in conservation of three percent every five years throughout the existing service area beginning in year 2005. Water usage throughout the SJWC system is expected to increase at a rate much lower than population growth. The growth in conservation is anticipated as a result of an increase in the use of ultra-low-flush toilets, low-flow showerheads, low water demand washers, individual conservation, and reductions in landscaping due to development trends. Conservation is assumed to be spread among the residential and business categories in proportion to their anticipated usage and would reduce the use of groundwater and imported water from the SCVWD. Future groundwater quantities in the Santa Clara Valley sub-basin were assumed to follow SJWC's five-year groundwater trend and comprise 37 percent of total system demand.

Over the four years since SJWC's 2005 UWMP was approved, the annual average daily flow throughout SJWC's system has decreased. A portion of this decrease can be attributed to efforts by both SJWC and SCVWD to change water use behavior in response to the drought over the past few years. This decrease in usage may also be partially attributed to the economic downturn and a shift in San José away from single-family residential development towards condominium, townhome and multi-family residential development which include less landscaping. Due to observed usage and demand trends, the 2010 annual average daily flow was lowered by nearly eight million gallons per day (MGD) or 8,957 acre-feet per year compared with the 2005 SJWC UWMP estimates shown in Table 3.10-2.

SJWC will meet future demand through increased groundwater pumping, increased treated water delivery, increased recycled water use, and conservation. SJWC does not anticipate additional storage capacity will be required to meet projected demand from the General Plan. Future development may require isolated infrastructure improvement to SJWC facilities which will be funded by developers on a project-specific basis.

By 2035, water demand is anticipated to exceed historic water supply levels during single-dry and multiple-dry water years by approximately 24,000 AFY. During future droughts, SJWC may experience shortages of supply and will continue to enact their Water Shortage Contingency Plan.

San José Municipal Water System

SJMWS assumes use of its entire allocation of SFPUC imported water would be available through 2035. Increases in groundwater from the Santa Clara Sub-basin and other supplies from the SCVWD will be necessary to meet future demand. Previous analysis of the total available groundwater for the Coyote Valley Sub-basin indicates a sustainable yield of 13,000 AFY. SJMWS does not anticipate

requiring use of its entire allocation of SCVWD imported water until 2030. Recycled water is anticipated to remain constant during normal year and drought year conditions.

Potable water demand in 2035 for the SJMWS is expected to reach 38,428 AFY with development under the proposed General Plan. The recycled water supply would provide an additional 7,351 AFY for non-potable uses. The SJMWS 2005 UWMP assumed potable water demand in 2030 of 46,500 AFY and 13,500 AFY for non-potable use of recycled water. The proposed General Plan, therefore, would result in less water demand than previously assumed for the SJMWS.

Water supplies in 2035 would be adequate to meet demand under normal conditions. Single-dry and multiple-dry year water supplies would fall short of normal demand by 17,347 AFY and 8,997 AFY. During dry years, various levels of conservation will be needed to respond to the severity of the supply reduction in order to reduce demand, as documented in Chapter 15.10 of the Municipal Code. The SJMWS anticipates that water demand could be adequately reduced with the use of conservation measures to an extent that it would not exceed water supply in dry years.

Assuming that additional SCVWD supplies can be used in-lieu of SFPUC water beyond 2018, water supply for the SJMWS would be sufficient to meet the future demand from the General Plan.

Great Oaks Water Company

Great Oaks relies entirely on groundwater to serve its customers. SCVWD treated water would also be available to Great Oaks were it to connect to existing pipelines in its service area. The UWMP prepared by Great Oaks in 2005 assumed that they could provide a water supply of 62,030 AFY through 2030 under normal conditions. This is greater than the assumed total demand of 31,030 AFY for development under the proposed General Plan. Water supply available under the single-dry and multiple-dry year scenarios would also still be greater than anticipated demand under the General Plan through 2035.[146]

Groundwater Use

The SCVWD's assumed safe yield for the Santa Clara Sub-basin is 200,000 AFY. Additional groundwater pumping is identified as a significant source of water supply to meet development needs under the proposed General Plan. Increased groundwater pumping is expected to exceed current annual recharge levels by 2035 but would not exceed 200,000 AFY. In the event future groundwater pumping from the Santa Clara Sub-basin were to result in overdraft conditions land subsidence is a potential consequence. The SCVWD actively manages water supplies to optimize the use of groundwater and surface water, and to prevent groundwater overdraft and land subsidence. Future groundwater use throughout the Santa Clara Sub-basin is estimated to be substantially below the 200,000 AFY safe yield. The SCVWD recharges the Santa Clara Sub-basin, in part through imported water supplies, which if reduced may affect the SCVWD's ability to maintain current groundwater levels. Future reductions in imported water supply may result in demands on the groundwater basin exceeding the aquifer's safe yield.

[146] Great Oaks Water Company. *2005 Urban Water Management Plan.* April 2005. Page 12. Available at: <http://www.sanjoseca.gov/coyotevalley/publications_DEIR.htm>

Water Supply Improvements

The SCVWD has a planning process to evaluate future water supply options to address additional water supply needs under a variety of weather scenarios. These options include various combinations of new supplies such as additional water recycling, new surface storage, desalination, additional water banking, and dry-year transfer options. The process considers various risk scenarios such as climate change, unexpected increases in demand, and reduced imported water. Based on the SCVWD's Final Draft UWMP 2010, water demands in Santa Clara County would exceed supply in normal rainfall years after 2030 and in single-dry and multiple-dry years the SCVWD would not be able to meet demand without severe water use restrictions after 2025. The SCVWD is beginning work on the Water Supply and Infrastructure Master Plan (Water Master Plan) to be completed in 2012. Implementation of key water supply investments identified as part of the Water Master Plan will be necessary to meet future water demand in Santa Clara County. Water supply improvements identified in the Final Draft 2010 UWMP include increased recycled water, increased conservation, additional imported supplies, desalination, and new storage. The timing and location of projects that would increase water supply are not known; however, the construction of such facilities in conformance with proposed General Plan policies and existing regulations would ensure the impact of such facilities would be less than significant. The need for additional water supply facilities will be determined based on continued water supply planning efforts over the life of the General Plan.

Additional groundwater pumps may be needed in North San José, Edenvale, and Coyote Valley to meet the SJMWS demand projections in these areas. The exact location and size of replacement and new pumping facilities is not known at this time. The addition of pumping facilities within the City in conformance with proposed General Plan policies and existing regulations would ensure the impact of such facilities is less than significant. Such facilities; however, would be subject to further project specific environmental review at the time they are proposed.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Water Supply

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce impacts from increased water demand resulting from the project. Proposed General Plan Policies and Actions that provide program-level mitigation for development impacts to water supplies in the City are identified below. San José cannot avoid all water supply impacts alone. Therefore many of these policies require cooperation with other agencies to create solutions or facilitate regional programs. Because San José cannot ensure the implementation of these policies and programs, they do not suffice as enforceable mitigation. San José's participation, however, will likely be essential to their success.

Water Conservation and Quality Policies and Actions	
Policy MS-3.1	Require water-efficient landscaping, which conforms to the State's Model Water Efficient Landscape Ordinance, for all new commercial, institutional, industrial, and developer-installed residential development unless for recreation needs or other area functions.
Policy MS-3.2	Promote use of green building technology or techniques that can help reduce the depletion of the City's potable water supply as building codes permit. For example, promote the use of captured rainwater, graywater, or recycled water as

	the preferred source for non-potable water needs such as irrigation and building cooling, consistent with Building Codes or other regulations.
Policy MS-3.3	Promote the use of drought tolerant plants and landscaping materials for non-residential and residential uses.
Action MS-3.6	Develop and maintain policies, ordinances, and guidelines that require reduced use of potable water and that reduce water pollution.
Action MS-3.7	Update the Green Building Ordinance to require installation of water efficient fixtures and appliances that are WaterSense certified, Energy Star rated, or equivalent during construction or renovation of bathrooms, kitchens, laundry areas, and/or other areas with water fixtures/appliances that are proposed to be replaced.
Action MS-3.8	Continue programs to educate the community on water conserving landscaping methods and materials to discourage the use of turf when it is not required for a specific function.
Action MS-3.9	Develop policies to promote water use efficiency, particularly for water-intensive activities.

Responsible Management of Water Supply Policies

Policy MS-17.1	Manage the limited water supply in an environmentally, fiscally, and economically sustainable manner, by working with local, regional and statewide agencies to establish policies that promote water use efficiency programs, including recycled water programs to support the expanded use of recycled water within San José and neighboring jurisdictions.
Policy MS-17.2	Ensure that development within San José is planned and built in a manner consistent with sustainable use of current and future water supplies by encouraging sustainable development practices, including low-impact development, water-efficient development and green building techniques. Support the location of new development within the vicinity of the recycled water system and promote expansion of the SBWR system to areas planned for new development. Residential development outside of the Urban Service Area can be approved only at minimal levels and only allowed to use non-recycled water at urban intensities. For residential development outside of the Urban Service Area, restrict water usage to well water, rainwater collection or other similar sustainable practice. Non-residential development may use the same sources and potentially make use of recycled water, provided that its use will not result in conflicts with other General Plan policies, including geologic or habitat impacts. To maximize the efficient and environmentally beneficial use of water, outside of the Urban Service Area, limit water consumption for new development so that it does not diminish the water supply available for projected development within San Jose's urbanized areas.

Water Conservation Policies and Actions

Policy MS-18.1	Demonstrate environmental leadership by adopting citywide policies that encourage or require new and existing development to incorporate measures to reduce potable water demand and/or increase water efficiency in order to reduce the City's need for imported water.

Policy MS-18.2	Require new development outside of the City's Urban Service Area to incorporate measures to minimize water consumption.
Policy MS-18.4	Retrofit existing development to improve water conservation.
Policy MS-18.5	Reduce citywide per capita water consumption by 25% by 2040 from a baseline established using the 2010 Urban Water Management Plans of water retailers in San José.
Policy MS-18.6	Achieve by 2040, 50 million gallons per day of water conservation savings in San José, by reducing water use and increasing water use efficiency.
Action MS-18.9	Partner with other agencies to incentivize water conservation by developing cost-sharing agreements on rebates and other incentive programs.
Action MS-18.11	Adopt guidelines or ordinances that encourage or require Bay-friendly, water-efficient design, landscape and irrigation within San José.
Action MS-18.15	Adopt city water use efficiency codes and standards and work with local, regional, state and other public and private agencies to increase water use efficiency within San José and neighboring jurisdictions.
Water Recycling Policies and Actions	
Policy MS-19.1	Require new development to contribute to the cost-effective expansion of the recycled water system in proportion to the extent that it receives benefit from the development of a sustainable local water supply.
Policy MS-19.3	Expand the use of recycled water to benefit the community and the environment.
Policy MS-19.4	Require the use of recycled water wherever feasible and cost-effective to serve existing and new development.
Policy MS-19.5	Improve the treatment of recycled water so that it can be used to help augment streams and recharge groundwater aquifers that provide a portion of the City's potable water supply.
Action MS-19.6	Develop and enact ordinance(s) that require new development to contribute to the improvement and expansion of the South Bay Water Recycling system.
Action MS-19.10	Develop incentives to encourage the use of recycled water and enact ordinances that ensure that new buildings in the vicinity of the SBWR pipeline are constructed in a manner suitable for connection to the recycled water system and that they use recycled water wherever appropriate.
Action MS-19.12	Adopt city recycled water use codes and standards and work with local, regional, state and other public and private agencies to substantially increase use of recycled water within San José and neighboring jurisdictions.
Infrastructure Policies	
Policy IN-3.3	Meet the water supply, sanitary sewer and storm drainage level of service objectives through an orderly process of ensuring that, before development occurs, there is adequate capacity. Coordinate with water and sewer providers to prioritize service needs for approved affordable housing projects.

General Plan Phasing/Planning Horizons/Major Review Policies	
Policy IP-2.4	Conduct a Major Review of this General Plan by the City Council every four years to evaluate the City's achievement of key economic development, fiscal and infrastructure/service goals, greenhouse gas emission reduction goals and targets, availability and affordability of housing supply, Healthful Community goals, and review changes and trends in land use and development. Based on this review, determine the City's readiness to begin the next General Plan Horizon or to modify the number of "pool" residential units available for non-specific Urban Village areas within the current Plan Horizon. Amend the Land Use/Transportation Diagram and/or General Plan policies and actions to achieve key General Plan goals.
Policy IP-2.5	During each Major Review of the General Plan evaluate input provided by the reconvened Task Force and achievement of the following key General Plan goals to inform the City Council's decision to begin the next General Plan Horizon or to increase the number of residential units available for non-specific Urban Village areas: 1. Jobs/Housing Balance – Demonstrate improvement of the City's jobs to employed resident ratio (J/ER) consistent with achievement of 1.3 jobs per employed resident by the year 2040. 2. Fiscal Stability – Demonstrate sustainable improvement above 2010 levels in the level of service for City services provided to the San Jose community. 3. Housing Supply – Verify that the current Planning Horizon contains adequate capacity to meet San Jose's Regional Housing Needs Allocation for the upcoming 4-year term. 4. Infrastructure – Confirm that adequate infrastructure and service facilities, especially transit, exist or that a secure plan for them is in place to support the planned jobs and housing capacity in the current and contemplated Horizon.

Existing Regulations and Adopted Plan and Policies

Existing regulations and local programs that would reduce or avoid possible impacts due to increased water use include:

- Senate Bill X7 – 7
- California Green Building Standards Code
- Urban Environmental Accords
- San José Green Vision
- Green Building Policy (8-13)
- Private Sector Green Building Policy (6-32)

Discussion of Water Supply Impacts

Implementation of the *Envision San José 2040 General Plan* would increase the demand for water from the SCVWD and three water retailers serving San José. Based on the SCVWD's Final Draft UWMP 2010, the potential for water demand to exceed supply after 2025 would result in the need for additional water storage and sources of supply. The proposed General Plan policies (including MS-18.4, MS-18.5, and MS-18.6), existing regulations, adopted plans and other City policies would

continue to require water conservation measures be incorporated in new development which will substantially reduce water demand. The SCVWD has initiated work on the Water Master Plan which will identify additional sources of water supply and storage to serve development through 2035. The proposed General Plan also includes policies that only allow new development to occur when adequate water supply and facilities exist to serve that development.

Impact UTIL-1: Implementation of the *Envision San José 2040 General Plan* would potentially increase demand for water from the three water retailers serving San José. Water demand could exceed water supply with implementation of the General Plan during dry and multiple dry years after 2025. Existing regulations and proposed policies would substantially reduce demand resulting from current and future development. With the implementation of the proposed General Plan policies water demand from increased development in San José would not exceed water supply. **(Less Than Significant Impact)**

3.10.3.2 *Sanitary Sewer/Wastewater Treatment*

Sanitary Sewer

As part of the *Envision San José 2040 General Plan* process the Phase I Sanitary Sewer Master Plan Update and the Phase II Sanitary Sewer Master Plan effort, a hydraulic analysis of the existing sanitary sewer system's ability to convey project sewage flows is being completed. In order to adequately convey sanitary sewer flows, the system is designed to accommodate the peak wet weather flow (PWWF) which assumes additional rainfall-derived and infiltration flow from a 10-year design storm. Sewage flows increase during storm events due to inflow from surface water that enters the system through improper sewer connections and manhole covers and from infiltration of groundwater through leaky sewer pipes and connections. The hydraulic analysis modeled the 10-inch and larger pipes (i.e., the trunk sewer system) and identified capacity deficiencies that would result from implementation of the project. The City is revising the Sanitary Sewer LOS Policy to address State and Federal regulations and best management practices for sanitary sewer systems. The revised policy provides clearer guidance for the City and developers in calculating the impact of proposed development and ensuring that sufficient capacity is provided to serve new development and protect public health. The analysis of the existing sanitary sewer system is being completed based on the revised Sanitary Sewer LOS Policy. Based on preliminary model results, approximately 67.8 miles or 15 percent of the trunk sewage pipelines in San José would operate below the City's level of service standard. The capacity deficiencies are located throughout the City of San José and concentrated in those areas where capacity is already limited. The project would contribute to existing deficiencies within sections of the system in, for example, Blossom Hill Road, Cottle Road, Chynoweth Avenue, Monterey Road, Dellwood Way, Camden Avenue, Ross Avenue, West Latimer Avenue, Parkwest Drive, Bascom Avenue, Moorpark Avenue, Sunol Street, Stockton Avenue, Curtner Avenue, Little Orchard Street, King Road, Aborn Road, Old Bayshore Highway, Airport Parkway, Brokaw Road, Cornish Lane, Oakland Road, Hostetter Road, Capitol Expressway, Morrill Avenue, Montague Expressway, North First Street, and Zanker Road. A complete list of the capacity deficiencies will be included in the Phase II Sanitary Sewer Master Plan.

As part of the Phase II Sanitary Sewer Master Plan process, each pipe deficiency will be evaluated and expansion project alternatives will be identified and analyzed prior to recommending capital

improvement projects. Further study and flow monitoring will be necessary to validate recommendations prior to the design and construction of the projects.

With implementation of the proposed General Plan, the Lamplighter Pump Station would exceed its existing operational pumping capacity. Due to limited space at the current pump station site the potential for expansion is limited. A new pump station would be needed and is anticipated to be constructed along North First Street to increase the system capacity to accommodate sewage flows resulting from implementation of the General Plan, consistent with the updated Sanitary Sewer LOS Policy discussed in Section 3.10.1.5, Regulatory Framework.

New local sewer lines are typically provided by new development requiring the new or additional sewer line capacity. Revenues for capital projects initiated by the City primarily come from the Sanitary Sewer Connection Fee Fund, transfers from the Sewer Service and Use Charge Fund, and "Joint Participation" contributions from the County Sanitation District 2-3 and the West Valley Sanitation District. The City is currently undertaking a Sewer Connection Fee Study and recommendations for changes in the sewer connection fee are anticipated. Future development allowed under the proposed *Envision San José 2040 General Plan* will continue to be required to provide adequate sanitary sewer capacity.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to the Sanitary Sewer System

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce impacts to wastewater facilities from increased sewage generation resulting from the project. Proposed General Plan Policies and Actions that provide program-level mitigation for development impacts to wastewater facilities in the City are identified below.

Infrastructure Policies	
Policy IN-3.1	Achieve minimum level of services: • For sanitary sewers, achieve a minimum level of service "D" or better as described in the Sanitary Sewer Level of Service Policy and determined based on the guidelines provided in the Sewer Capacity Impact Analysis (SCIA) Guidelines. • For storm drainage, to minimize flooding on public streets and to minimize the potential for property damage from stormwater, implement a 10-year return storm design standard throughout the City, and in compliance with all local, State and Federal regulatory requirements.
Policy IN-3.3	Meet the water supply, sanitary sewer and storm drainage level of service objectives through an orderly process of ensuring that, before development occurs, there is adequate capacity. Coordinate with water and sewer providers to prioritize service needs for approved affordable housing projects.
Policy IN-3.4	Maintain and implement the City's Sanitary Sewer Level of Service Policy and Sewer Capacity Impact Analysis (SCIA) Guidelines to: • Prevent sanitary sewer overflows (SSOs) due to inadequate capacity so as to ensure that the City complies with all applicable requirements of the Federal Clean Water Act and State Water Board's General Waste Discharge Requirements for Sanitary Sewer Systems and National Pollutant Discharge

	Elimination System permit. SSOs may pollute surface or ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters. • Maintain reasonable excess capacity in order to protect sewers from increased rate of hydrogen sulfide corrosion and minimize odor and potential maintenance problems. • Ensure adequate funding and timely completion of the most critically needed sewer capacity projects. • Promote clear guidance, consistency and predictability to developers regarding the necessary sewer improvements to support development within the City.
Policy IN-3.5	Require development which will have the potential to reduce downstream LOS to lower than "D", or development which would be served by downstream lines already operating at a LOS lower than "D", to provide mitigation measures to improve the LOS to "D" or better, either acting independently or jointly with other developments in the same area or in coordination with the City's Sanitary Sewer Capital Improvement Program.
Policy IN-3.6	Consistent with the Goals, Policies and Implementation Actions for Water Supply, expand San José's infrastructure for the delivery of recycled water.
Action IN-3.14	Maintain and implement the Sanitary Sewer Master Plan Program to determine sewer system capacity needs using a computerized hydraulic model of San José's sewer system, supported by sewer flow monitoring at strategic locations within the system.
Action IN-3.15	Develop a sewer capacity improvement program to prioritize and construct improvement projects to address the capacity needs identified in the Sewer Master Plan Program.
Development Fees, Taxes, and Improvement Requirements Policies	
Policy IP-15.1	New development is required to construct and dedicate to the City all public improvements directly attributable to the site. This includes neighborhood or community parks and recreation facilities, sewer extensions, sewer laterals, street improvements, sidewalks, street lighting, fire hydrants and the like. In the implementation of the level of service policies for transportation, sanitary sewers, and neighborhood and community parks, development is required to finance improvements to nearby intersections or downstream sewer mains in which capacity would be exceeded, and dedicate land, pay an in lieu fee or finance improvements for parks and recreation needs which would result from the development.

Existing Regulations and Programs

Existing regulations and local programs that would reduce or avoid possible impacts due to increased wastewater flows include:

- California Green Building Standards Code
- Urban Environmental Accords
- San José Green Vision

Impact UTIL-2: Implementation of the *Envision San José 2040 General Plan* would generate additional sewage that will contribute to existing deficiencies in the sanitary sewer system. The proposed General Plan policies ensure that proposed development would be required to expand the sewer system capacity to meet the needs of new development. Since the specific location of future pump stations is not currently known, it cannot be determined conclusively at this time if future facilities might have an adverse impact on the environment. Construction and/or expansion of pump stations would require supplemental environmental review; however, construction of such facilities consistent with proposed policies and existing regulations would reduce any physical impacts from these facilities to a less than significant level. **(Less Than Significant Impact)**

Wastewater Treatment

Based on 2009 data, the City's average dry weather flow is approximately 69.8 mgd. The City's share of the WPCP's treatment capacity is approximately 108.6 mgd which, based on current sewage flows, leaves the City with approximately 38.8 mgd of excess treatment capacity. The proposed *Envision San José 2040 General Plan* would allow development that increases sewage generation throughout the City. Based on the sanitary sewer hydraulic analysis, the increment of additional development allowed by the proposed General Plan is estimated to generate average dry weather flow of approximately 30.8 mgd. The development allowed under the proposed General Plan, therefore, would not exceed the City's allotted capacity of the WPCP.

Projected Sea Level Rise and WPCP Operations

One widely publicized effect of global climate change is sea level rise. Various studies predict that sea level will rise by 12 to 18 inches by 2050, as compared to 2000 levels, as a result of global climate change. Existing and projected mean sea level by 2050 and 2100 within the City's UGB are shown in Figure 3.7-6. An 18-inch rise in sea level by 2050 would inundate the Alviso Village area if there was no tidal flood protection provided by levees. A 55-inch rise in sea level by 2100 could extend the inundation zone to the vicinity of SR 237. A primary concern with sea level rise in the South Bay is the likely increased pressure on existing levees and the potential for breaches.

The increase in global mean sea level may have a range of impacts to developed areas of San José, particularly the Alviso area and in tidally influenced reaches of streams and creeks. Discharge pipes for treated wastewater from the WPCP, will operate differently under higher average tide cycles. The City is aware that implementation of adaptive management techniques may be required in the future for this critical infrastructure. The WPCP is currently preparing a Master Plan that will account for the constraints sea level rise will place on the WPCP's operations. Potential solutions for adapting to sea level rise include levees, berms, sea walls, and graduated beaches with mud flats and upland riparian habitat. It is anticipated, based on the work scope for the WPCP Master Plan effort, that this Plan and/or other future plans for capital improvements at the WPCP, will include a planned approach to address sea level rise in order to maintain wastewater treatment operations.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to Wastewater Treatment Capacity

The proposed *Envision San José 2040 General Plan* includes updated policies that would help reduce impacts to wastewater treatment facilities from increased sewage generation resulting from the project. Proposed General Plan Policies and Actions that provide program-level mitigation for development impacts to wastewater treatment facilities in the City are identified below.

Infrastructure Policies	
Policy IN-4.1	Monitor and regulate growth so that the cumulative wastewater treatment demand of all development can be accommodated by San José's share of the treatment capacity at the San José/Santa Clara Water Pollution Control Plant.
Policy IN-4.2	Maintain adequate operational capacity for wastewater treatment and water reclamation facilities to accommodate the City's economic and population growth.
Policy IN-4.3	Adopt and implement new technologies for the operation of wastewater treatment and water reclamation facilities to achieve greater safety, energy efficiency and environmental benefit.
Policy IN-4.4	Maintain and operate wastewater treatment and water reclamation facilities in compliance with all applicable local, State and federal clean water, clean air, and health and safety regulatory requirements.
Policy IN-4.5	Develop projects, policies and programs to convert wastewater treatment streams into energy so that the wastewater treatment facilities can operate as fully energy self-efficient.
Policy IN-4.6	Continue to encourage water conservation and other programs which result in reduced demand for wastewater treatment capacity.
Policy IN-4.7	Support programs to maximize the beneficial use of wastewater treatment and water reclamation byproducts, which may include water, bio-solids and nutrients.
Action IN-4.8	Prepare, maintain and implement a Master Plan(s) for the ongoing capital improvement, maintenance, and operation of the wastewater treatment and water reclamation facilities.
Flooding and Stormwater Runoff	
Action EC-5.20	Monitor information from regional, state, and federal agencies on water level rises in San Francisco Bay on an on-going basis. Use this information to determine if additional adaptive management actions are needed and implement those actions to address flooding hazards from increasing sea levels for existing or new development and infrastructure.
Development Fees, Taxes, and Improvement Requirements Policies	
Policy IP-15.1	New development is required to construct and dedicate to the City all public improvements directly attributable to the site. This includes neighborhood or community parks and recreation facilities, sewer extensions, sewer laterals,

	street improvements, sidewalks, street lighting, fire hydrants and the like. In the implementation of the level of service policies for transportation, sanitary sewers, and neighborhood and community parks, development is required to finance improvements to nearby intersections or downstream sewer mains in which capacity would be exceeded, and dedicate land, pay an in lieu fee or finance improvements for parks and recreation needs which would result from the development.
Policy IP-15.2	To finance the construction and improvement of facilities and infrastructure systems for which the demand for capacity cannot be attributed to a particular development, impose a series of taxes through which new growth collectively finances those facilities and systems. These taxes are over and above cost-recovery fees charged for processing and reviewing applications for development approvals and permits. Examples of development taxes include: 1. Construction Tax and the Conveyance Tax (the latter paid in connection with any transfer of real property, not just new development) provide revenue for parks, libraries, library book stock, fire stations, maintenance yards and communications equipment. 2. The Building and Structures Tax and Commercial/Residential/Mobilehome Park Tax provide revenue for the construction of San José's major street network. 3. Connection Fees provide revenue for the construction of storm sewers, sanitary sewers and expansions of sewage treatment capacity at the Water Pollution Control Plant. Fees and taxes may need to be adjusted from time to time to reflect changing costs and new requirements. Additionally, new fees or taxes may need to be imposed to finance other capital and facility needs generated by growth. Where possible, if a developer constructs facilities or infrastructure for which these taxes are imposed, the developer may be provided with corresponding credits against the applicable taxes or fees.

Existing Regulations and Adopted Plan and Policies

Existing regulations and local programs that would reduce or avoid possible impacts due to increased wastewater that could require additional wastewater treatment facilities include:

- California Green Building Standards Code
- NPDES Wastewater Permit
- Urban Environmental Accords
- San José Green Vision

Impact UTIL-3: Implementation of the *Envision San José 2040 General Plan* would not result in the need for additional wastewater treatment capacity due to the increase in sewage generated by development in the City of San José. The General Plan policies, existing regulations, and local programs ensure that the *Envision San José 2040 General Plan* would not require increased wastewater treatment capacity. **(Less Than Significant Impact)**

3.10.3.3 *Storm Drainage*

The City's underground storm pipelines are designed to handle various storm event frequencies, including the three-year, five-year, 10-year, or 100-year storm events. Up until approximately 15 years ago, the City of San José's design standard for storm pipelines was the three-year storm event, which conformed to locally accepted standards at that time. Many local municipalities, including San José, have since replaced this standard with a more robust 10-year storm event design standard (meaning there is a 10 percent chance of a storm of this magnitude occurring within a given year). Approximately 40 of the 1,250 miles of storm pipelines installed in the City meet the 10-year storm event design standard.

All new developments are required to design storm pipes with capacity to convey the 10-year storm event under full flow conditions. In addition, overland releases are to be provided as a means of protection against storm frequencies of greater than 10 years, and as an emergency against clogged inlets or malfunctioning storm drains. Streets may be used for overland release so long as a minimum of one foot freeboard as measured from the flow line at the release point to the floor of any impacted structure can be maintained.

Storm pump stations (or lift stations) must be designed to accommodate the 100-year storm event per the current City of San José design standards. In addition, a minimum of two pumps are required at all times; and the maximum pumping capacity must be achieved with at least one pump in reserve unless the station is a redundant system.

The City of San José does not have a level of service measure for the storm drainage system. The level of service provided by the existing storm drainage system varies greatly from one neighborhood to the next because of changes to the storm system design criteria (three-year storm event vs. 10-year storm event) and due to the number of years over which the local systems have been built. Some areas of the City are already served by systems capable of conveying the 10-year event while others were designed for the equivalent of a three-year event or less. The community of Alviso in North San José is an example of an area where the storm drainage system has capacity to convey only the two to three-year storm event. Localized flooding and ponding is still a fairly common occurrence in other City neighborhoods due to undersized pipes, displaced curb and gutter, and/or inefficient pump station performance.

Storm drain system capacity needs are typically determined through a master planning process that includes characterization of the watershed/drainage basin areas; assessment of existing storm drain infrastructure; review of current and future land use; identification of needed capital improvements to accommodate projected storm water flows resulting from future new development and/or redevelopment areas; evaluation of environmental clearances and permit requirements; development of an implementation/priority plan and cost estimates; and establishment of a legally defensible financing plan.

Development impact fees are "one-time" fees assessed on new projects to allow connection to the public storm drain system. Collected funds can only be used for capital improvement projects, and not for operation and maintenance. The connection fees have not been increased in over twenty years and are the lowest in the Bay Area. The City is currently in the process of conducting a Sewer Connection Fee Study to determine whether increases to the current fee structure should be considered. The master planning effort will provide vital information for the completion of the fee study.

Storm sewer use fees are assessed annually on properties and collected with real property taxes. Collected funds can be used for capital improvement projects and/or operation and maintenance activities. The funding allocated to the Public Works CIP Program will be used primarily to fund minor neighborhood storm drainage improvement projects, flood protection improvements in the Alviso community, and storm pump stations rehabilitation. Additional funding needs may be necessary for the implementation the current Municipal Regional Stormwater NPDES Permit.

Redevelopment allowed under the proposed *Envision San José 2040 General Plan* will be required to design and construct storm sewer systems meeting the City's 10-year storm event design standard. Constructing improvements to the existing storm drainage system would occur primarily in existing roadway right-of-ways and within project sites planned for redevelopment. Replacement of storm sewers consistent with City permits to prevent polluted runoff during construction would avoid impacts from the replacement of existing systems. The construction of storm sewer improvements on sites proposed for development and redevelopment would not result in any greater impact than the proposed development project and would be subject to the City's construction permits to avoid impacts to stormwater quality. Implementation of the City's NPDES permit, which requires the use of BMPs for development projects that create, add, or replace 10,000 square feet or more of impervious surface area, would ensure that runoff from these sites would not result in significant impacts. The use of BMPs in addition to the City's HMP would reduce the rate and amount of runoff such that increased pipeline sizes conforming to the City's design standards are not anticipated to result in significant impacts. The project may result in the need for additional storm pump stations. The Storm Master Plan effort will identify improvements, including potential pump stations that would be subject to environmental review but are not anticipated to result in significant impacts with implementation of the proposed General Plan policies. The future replacement and reconstruction of existing pump stations involving little or no expansion of capacity would not result in significant impacts with implementation of the proposed General Plan policies.

Proposed General Plan Policies and Actions
That Reduce or Avoid Adverse Impacts to the Storm Drainage System

The proposed *Envision San José 2040 General Plan* includes updated policies and actions that would reduce impacts from the potential for the project to result in increased stormwater runoff. Proposed General Plan Policies and Actions that provide program-level mitigation for development impacts to storm drainage facilities in the City are identified below.

Flooding Hazards Policies and Actions	
Policy EC-5.7	Allow new urban development only when mitigation measures are incorporated into the project design to ensure that new urban runoff does not increase flood risks elsewhere.
Policy EC-5.11	Reduce the amount of impervious surfaces as a part of redevelopment and roadway improvements through the selection of materials, site planning, and street design where possible.
Action EC-5.16	Implement the Post-Construction Urban Runoff Management requirements of the City's Municipal NPDES Permit to reduce urban runoff from project sites.
Action EC-5.17	Implement the Hydromodification Management requirements of the City's Municipal NPDES Permit to manage runoff flow and volume from project sites.

Action EC-5.18	Maintain City storm drainage infrastructure in a manner that reduces flood hazards. As the storm drainage system is extended or modified, provide capacity to adequately convey the 10-year storm event.
Action EC-5.19	Develop and maintain a Storm Drainage Master plan and work with other agencies to develop broader Watershed Management Plans to model the City's hydrology.
Action EC-5.20	Monitor information from regional, state, and federal agencies on water level rises in San Francisco Bay on an on-going basis. Use this information to determine if additional adaptive management actions are needed and implement those actions to address flooding hazards from increasing sea levels for existing or new development and infrastructure.
Provision of Infrastructure Policies	
Policy IN-1.4	Give priority to the development of infrastructure within identified Growth Areas to support the amount, type and location of new development planned through the Land Use/Transportation Diagram and other General Plan goals and policies.
Policy IN-1.5	Require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.
Policy IN-1.6	Ensure that public facilities and infrastructure are designed and constructed to meet ultimate capacity needs to avoid the need for future upsizing. For facilities subject to incremental upsizing, initial design shall include adequate land area and any other elements not easily expanded in the future. Infrastructure and facility planning should discourage over-sizing of infrastructure which could contribute to growth beyond what was anticipated in this General Plan.
Policy IN-1.7	Implement financing strategies, including assessment of fees and establishment of financing mechanisms, to construct and maintain needed infrastructure that maintain established service levels and mitigate development impacts to these systems (e.g., pay capital costs associated with existing infrastructure that has inadequate capacity to serve new development and contribute toward operations and maintenance costs for upgraded infrastructure facilities).
Water Supply, Sanitary Sewer, and Storm Drainage Policies and Actions	
Policy IN-3.1	Achieve minimum level of services: • For sanitary sewers, achieve a minimum level of service "D" or better as described in the Sanitary Sewer Level of Service Policy and determined based on the guidelines provided in the Sewer Capacity Impact Analysis (SCIA) Guidelines. • For storm drainage, to minimize flooding on public streets and to minimize the potential for property damage from stormwater, implement a 10-year return storm design standard throughout the City, and in compliance with all local, State and Federal regulatory requirements.
Policy IN-3.3	Meet the water supply, sanitary sewer and storm drainage level of service objectives through an orderly process of ensuring that, before development occurs, there is adequate capacity. Coordinate with water and sewer providers to prioritize service needs for approved affordable housing projects.

Policy IN-3.7	Design new projects to minimize potential damage due to storm waters and flooding to the site and other properties.
Policy IN-3.9	Require developers to prepare drainage plans for proposed developments that define needed drainage improvements per City standards.
Policy IN-3.10	Incorporate appropriate stormwater treatment measures in development projects to achieve stormwater quality and quantity standards and objectives in compliance with the City's National Pollutant Discharge Elimination System (NPDES) permit.
Action IN-3.16	Develop a Storm Drainage Infrastructure Master Plan to • Identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding. • Ensure that public facilities and infrastructure are designed pursuant to approved State, regional and local regulatory requirements. • Ensure that adequate land area and any other elements are provided for facilities subject to incremental sizing (e.g., detention basins and pump stations). • Identify opportunities to meet water quality protection needs in a cost-effective manner.
Action IN-3.17	Develop and implement a Green Streets plan consistent with NPDES permit requirements.
Development Fees, Taxes, and Improvement Requirements Policies	
Policy IP-15.2	To finance the construction and improvement of facilities and infrastructure systems for which the demand for capacity cannot be attributed to a particular development, impose a series of taxes through which new growth collectively finances those facilities and systems. These taxes are over and above cost-recovery fees charged for processing and reviewing applications for development approvals and permits. Examples of development taxes include: 1. Construction Tax and the Conveyance Tax (the latter paid in connection with any transfer of real property, not just new development) provide revenue for parks, libraries, library book stock, fire stations, maintenance yards and communications equipment. 2. The Building and Structures Tax and Commercial/Residential/Mobilehome Park Tax provide revenue for the construction of San José's major street network. 3. Connection Fees provide revenue for the construction of storm sewers, sanitary sewers and expansions of sewage treatment capacity at the Water Pollution Control Plant. Fees and taxes may need to be adjusted from time to time to reflect changing costs and new requirements. Additionally, new fees or taxes may need to be imposed to finance other capital and facility needs generated by growth. Where possible, if a developer constructs facilities or infrastructure for which these taxes are imposed, the developer may be provided with corresponding credits against the applicable taxes or fees.

Existing Regulations and Adopted Plans and Policies

Existing regulations and local programs that would reduce or avoid possible impacts due to the potential for increased stormwater runoff include:

- NPDES Municipal Stormwater Permit
- Post-Construction Urban Runoff Management Policy 6-29
- Post-Construction Hydromodification Management Policy 8-14

Impact UTIL-4: Implementation of the *Envision San José 2040 General Plan* would allow development and/or redevelopment that may result in an increase in impervious surfaces which could increase runoff that would exceed the capacity of local storm drainage systems. Replacing existing stormwater pipelines and adding pipelines where they do not currently exist is not expected to result in significant environmental impacts due to the implementation of stormwater BMPs that are required for new development. The proposed General Plan policies, existing regulations, and local programs ensure that the *Envision San José 2040 General Plan* would not result in significant impacts from the provision of stormwater drainage facilities. **(Less Than Significant Impact)**

3.10.3.4 *Solid Waste*

Santa Clara County's Integrated Waste Management Plan (IWMP) was approved by the CIWMB in 1996 and has since been reviewed in 2004 and 2007. The jurisdictions in the Santa Clara County IWMP include Campbell, Cupertino, Gilroy, Morgan Hill, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San José, Santa Clara, Saratoga, Sunnyvale and the unincorporated areas of Santa Clara County. Each jurisdiction in the county has a diversion requirement of 50 percent for 2000 and each year thereafter.

According to the IWMP, the County has adequate disposal capacity beyond 2022. In 2008, the City of San José diverted approximately 60 percent of the waste generated within the City through a variety of waste diversion programs. Increased residential development allowed under the proposed General Plan would result in approximately 97,000 tons of garbage per year and 22,000 tons of recyclables per year.[147] Commercial, industrial and institutional uses would result in increased solid waste generation of approximately 474,500 tons per year.[148] The total increase in solid waste generation that may require landfilling from increased residential and non-residential development through 2035 is approximately 571,500 tons per year. Assuming implementation of the City's Zero Waste Strategic Plan, this estimate of solid waste generation represents an upper limit of potential landfilling needs based on current waste generation.

[147] The solid waste and recycling generation for the proposed project was based on a single-family household generation rate of 31.6 pounds per week and 20.5 pounds per week, respectively. The solid waste generation rate of 31.1 pounds per household per week for multi-family residences and the recycling generation rate of 6.8 pounds per household per week for multi-family residences were also used. Godley, Laurel. City of San José, Environmental Services Department. Email Communication. November 2, 2006.

[148] Based on rates of 8.93 lbs./emp./day for industrial uses, 1.24 lbs./emp./day for office uses, 10.53 lbs./emp./day for retail uses, and 3.55lbs./emp./day for institutional uses. CalRecycle. *Estimates of Solid Waste Generation*. December 30, 2009. Accessed November 9, 2010 <http://www.calrecycle.ca.gov/WasteChar/WasteGenRates/default.htm>

In October 2007, the City Council adopted a Zero Waste Resolution (No. 74077), which set a goal of 75 percent waste diversion by 2013 and a goal of zero waste by 2022 for the City. Through the Zero Waste planning process 27 facilities were identified that include five landfills, nine recycling and transfer stations, five composting facilities, and eight mixed materials construction and demolition (C&D) debris processing facilities. Landfills serving the City include Guadalupe Mines, Kirby Canyon, Newby Island, Zanker Road Materials Processing Facility, and Zanker Road. Closure dates for three of the landfills range from 2021 to 2025 with Newby Island Landfill currently seeking approvals to increase capacity in order to continue operating through 2025 and the Zanker Road landfills having no closure date due to the minimal amount of materials being landfilled each year at both these facilities. In 2007, the City of San José landfilled approximately 700,000 tons per year at facilities throughout Northern California, including 578,000 tons per year at facilities in San José. The total permitted landfilling capacity of the five operating landfills in the City is approximately 5.3 million tons per year.[149]

Proposed General Plan Policies and Actions That Reduce or Avoid Adverse Impacts to Solid Waste Facilities

The proposed *Envision San José 2040 General Plan* includes updated policies that would reduce impacts to solid waste facilities from increased waste generation resulting from the project. Proposed General Plan Policies and Actions that provide program-level mitigation for development impacts to solid waste facilities in the City are identified below.

Provision of Infrastructure Policies	
Policy IN-1.5	Require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.
Policy IN-1.6	Ensure that public facilities and infrastructure are designed and constructed to meet ultimate capacity needs to avoid the need for future upsizing. For facilities subject to incremental upsizing, initial design shall include adequate land area and any other elements not easily expanded in the future. Infrastructure and facility planning should discourage over-sizing of infrastructure which could contribute to growth beyond what was anticipated in this General Plan.
Policy IN-1.7	Implement financing strategies, including assessment of fees and establishment of financing mechanisms, to construct and maintain needed infrastructure that maintain established service levels and mitigate development impacts to these systems (e.g., pay capital costs associated with existing infrastructure that has inadequate capacity to serve new development and contribute toward operations and maintenance costs for upgraded infrastructure facilities).
Solid Waste Materials Recovery/Landfill Policies	
Policy IN-5.1	Monitor the continued availability of long-term collection, transfer, recycling and disposal capacity to ensure adequate solid waste capacity. Periodically assess infrastructure needs to support the City's waste diversion goals. Work with private MRF and Landfill operators to provide facility capacity to

[149] City of San José. *Assessment of Infrastructure for the Integrated Waste Management Zero Waste Strategic Plan Development.* November 3, 2008. Section 2-2.

	implement new City programs to expand recycling, composting and other waste processing.
Policy IN-5.3	Use solid waste reduction techniques, including source reduction, reuse, recycling, source separation, composting, energy recovery and transformation of solid wastes to extend the life span of existing landfills and to reduce the need for future landfill facilities and to achieve the City's Zero Waste goals.
Policy IN-5.4	Support the expansion of infrastructure to provide increased capacity for Materials Recovery Facilities (MRF)/transfer, composting, and Construction and Demolition materials processing (C&D) at privately operated facilities and on lands under City control to provide increased long-term flexibility and certainty.
Policy IN-5.5	Preserve industrial lands, consistent with General Plan Land Use and Fiscal Sustainability policies, to support the City's future waste management infrastructure needs.
Policy IN-5.9	Locate and operate solid waste disposal facilities in a manner which protects environmental resources and is compatible with existing and planned surrounding land uses.
Policy IN-5.11	Establish new solid waste landfills only on lands designated with the Candidate Solid Waste Landfill Site overlay ("CSW").
Policy IN-5.12	Design and control access routes to solid waste landfill sites in non-urban areas so as to avoid encouraging urban development on adjacent or nearby properties.
Policy IN-5.13	Designate no new candidate landfill sites until the need for additional landfill capacity has been established. Source reduction, recycling/composting alternatives, and waste conversion should be taken into account when evaluating the need for a landfill.
Policy IN-5.15	The preferred method for increasing the City's landfill capacity is to expand the capacity of existing landfill sites and monitor the continued availability of recycling, resource recovery and composting capacity to ensure adequate long term capacity.
General Plan Annual Review and Measurable Sustainability Policies	
Policy IP-3.8[150]	Consistent with the City's Green Vision, evaluate the City's achievement of the following goals for environmental sustainability as part of each General Plan annual review process: • Reduce per capita energy consumption by at least 50% compared to 2008 levels by 2022 and maintain or reduce net aggregate energy consumption levels equivalent to the 2022 (Green Vision) level through 2040. (Reduce Consumption and Increase Efficiency Goal MS-14) • Divert 100% of waste from landfills by 2022 and maintain 100% diversion through 2040. (Waste Diversion Goal MS-5) • Work with stakeholders to establish additional landfill gas-to-energy systems and waste heat recovery by 2012 and prepare an ordinance requiring such action by 2022 for Council consideration. (Environmental Leadership and Innovation Action MS-7.12)

[150] Policy IP-3.6 as shown is modified in this list to reflect only those items relevant to the discussion of solid waste.

	• Develop a schedule to discontinue the use of disposable, toxic or nonrenewable products as outlined in the United Nations Urban Environmental Accords. City use of at least one such item shall be discontinued each year throughout the planning period. In the near-term, staff will monitor the regulation of single-use carryout bags to ensure that their use in the City is reduced by at least 50%, or shall propose enhanced regulation or an alternate product. Staff will evaluate all such products for regulation or for use in energy recovery processes and shall recommend such regulations as are necessary to eliminate landfilling such products in the long-term (2022-2040). (Environmental Leadership and Innovation Action MS-7.13) • Prepare an ordinance for Council consideration by 2012 that would enact regional landfill bans during the near- and mid-terms for organic material such as food waste and yard trimmings that contribute to methane generation in landfills. (Environmental Stewardship Action MS-8.8).
Development Fees, Taxes, and Improvement Requirements Policies	
Policy IP-15.2	To finance the construction and improvement of facilities and infrastructure systems for which the demand for capacity cannot be attributed to a particular development, impose a series of taxes through which new growth collectively finances these facilities and systems. These taxes are over and above cost-recovery fees charged for processing and reviewing applications for development approvals and permits. Examples of development taxes include: 1. Construction Tax and the Conveyance Tax (the latter paid in connection with any transfer of real property, not just new development) provide revenue for parks, libraries, library book stock, fire stations, maintenance yards and communications equipment. 2. The Building and Structures Tax and Commercial/Residential/Mobilehome Park Tax provide revenue for the construction of San José's major street network. 3. Connection Fees provide revenue for the construction of storm sewers, sanitary sewers and expansions of sewage treatment capacity at the Water Pollution Control Plant. Fees and taxes may need to be adjusted from time to time to reflect changing costs and new requirements. Additionally, new fees or taxes may need to be imposed to finance other capital and facility needs generated by growth. Where possible, if a developer constructs facilities or infrastructure for which these taxes are imposed, the developer may be provided with corresponding credits against the applicable taxes or fees.
Environmental Leadership/Stewardship Policies	
Policy IP-17.1[151]	Use San José's adopted Green Vision as a tool to advance the General Plan Vision for Environmental Leadership. San José's Green Vision is a comprehensive fifteen-year plan to create jobs, preserve the environment, and improve quality of life for our community, demonstrating that the goals of economic growth, environmental stewardship and fiscal sustainability are inextricably linked. Adopted in 2007, San José's Green Vision, adopted in

[151] Policy IP-17.1as shown is modified in this list to reflect only those items relevant to the discussion of solid waste.

	2007, establishes the following Environmental Leadership goals for the City through 2022: 5. Divert 100 percent of the waste from our landfill and convert waste to energy; Although the City has one of the highest waste diversion rates of any large city in the nation, many waste reduction opportunities remain. If San José and other local cities achieve no further waste reduction efforts over the next 15 years, solid waste landfill space in the region could reach capacity.

Existing Regulations and Adopted Plans and Policies

Existing state regulations and local programs that would reduce or avoid possible impacts due to the potential for increased solid waste generation include:

- California Air Resources Board Scoping Plan – Mandatory Commercial Recycling Measure
- California Green Building Standards Code
- Urban Environmental Accords
- San José Green Vision
- Zero Waste Resolution
- Environmentally Preferable Procurement Policy
- Green Building Policy

Impact UTIL-5: Implementation of the *Envision San José 2040 General Plan* would not exceed the capacity of existing landfills serving the City of San José. Estimated increases in solid waste generation from development allowed by the project would be avoided through implementation of the City's Zero Waste Strategic Plan. The proposed General Plan policies, existing regulations, and local programs ensure that the *Envision San José 2040 General Plan* would not result in significant impacts from the provision of landfill capacity to accommodate the City's increased service population. **(Less Than Significant Impact)**

3.10.3.5 *Secondary Energy Impacts*

Development allowed under the proposed General Plan may require construction of utility system improvements to provide adequate natural gas and electricity. Both gas and electric utility facilities are operated as an integrated system and while there is an extensive network of existing gas and electric transmission and distribution facilities in San José, in some cases there may not be sufficient capacity for new, additional utility uses (i.e., utility loads).[152] Needed improvements could range from on-site to off-site installations of pipelines, power lines and/or electric substations. New distribution lines (such as gas pipelines or electric power lines) serving new or expanded development within the City's UGB may need to be installed within existing street rights-of-way and should generally be underground. In addition to adding new distribution lines, the range of electric system improvements needed to accommodate new development may include upgrading existing electric substation and transmission line equipment, expanding existing substations to their ultimate build-out capacity, and building new substations and interconnecting transmission lines. Comparable

[152] Alfred Poon. Land Rights Protection, Southern Area, Pacific Gas and Electric, written communication to Andrew Crabtree, City of San José, November 23, 2010.

upgrades or additions needed to accommodate additional load on the natural gas systems could include facilities such as regulator stations, odorizer stations, and valve lots.

It is anticipated that where required, electric substations would be upgraded or new substations built near proposed uses that would generate increased demand. Environmental effects of these improvements could include noise from transformer "hum" if near sensitive receptors and physical effects to trees or habitats where a substation or associated transmission or distribution lines were installed. Siting of natural gas transmission lines [i.e., pressurized lines of 60 pounds per inch (psi) of pressure or more] would need to be in conformance with federal and state regulations while new development approved by the City would need to be set back from these lines in conformance with City Council policy (refer to Section 3.8 Hazardous Materials and Hazards). To the extent future electrical and natural gas infrastructure can be installed on previously developed sites away from residential uses, substantial environmental impacts would be reduced. Options for separating infrastructure from the development it serves, including residential development, are less feasible than in the past, however, and will be more problematic in the future. Where infrastructure facilities are proposed on previously undeveloped land, their impacts would be similar to the identified impacts of increased urbanization within the City that is proposed by the General Plan. To the extent proposed facilities conform to the policies of the General Plan, such impacts would be minimized or avoided. The City has provided information to Pacific Gas and Electric on the proposed General Plan and will continue to coordinate with their Service Planning and Distribution Planning Departments on utility needs, including methods for minimizing land use impacts to residential and other sensitive receptors.

3.10.3.6 *Impacts of Rancho del Pueblo and iStar Residential Options*

As discussed in Section 2.2.8 in the Project Description, this PEIR also evaluates options for residential land use designations and anticipated future development on two properties; the Rancho del Pueblo Golf Course in the Alum Rock Planning Area and the iStar property in the Edenvale Planning Area (Residential Option Sites). Under these options one or both of these properties would be designated for residential uses instead of the industrial uses assumed on the iStar property and the park/open space on the existing Rancho del Pueblo Golf Course. Because these options also include modifications to other Growth Areas, adjusting the assumed dwelling units or jobs, the overall amount of development capacity assumed under the Preferred Scenario would not change citywide.

A comparison and summary of utilities and service system impacts for the residential options is shown in Table 3.10-3. Implementation of an updated General Plan that includes one or both of the residential options for the Rancho del Pueblo and iStar sites would have impacts similar to those from the proposed project.

Table 3.10-3
Utilities and Service System Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
UTIL-1	Water Supply	Residential development on both sites would reduce planned residential development elsewhere in San José. Water demand, therefore, would not	same (LTS)

Table 3.10-3
Utilities and Service System Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
		increase over the proposed project and is not anticipated to exceed supply through 2035.	
UTIL-2	Sanitary Sewer	Residential development on both sites would reduce planned residential development elsewhere in San José. Development on these sites would generate additional sewage to the local collection system, which may have existing deficiencies, but would not result in greater impacts to the system as a whole than the proposed General Plan. Implementation of General Plan policies would ensure that new development on these sites upgrades the sanitary sewer system, as needed, to accommodate project sewage flows.	same (LTS)
UTIL-3	Wastewater Treatment	Residential development on both sites would reduce planned residential development elsewhere in San José. The proposed General Plan would not result in the need for additional sewage treatment capacity and, therefore, the proposed relocation of a portion of the planned development to the Rancho del Pueblo and iStar sites would not result in any greater impact than the proposed General Plan.	same (LTS)
UTIL-4	Storm Drainage	Development of the Residential Option on the Rancho del Pueblo and iStar sites would be required to implement stormwater BMPs and conform to the City's HMP to reduce the rate and amount of stormwater runoff. Measures to reduce stormwater runoff from these sites may include stormwater detention due to the large amount of pervious surfaces on both sites. Residential development on these sites would be required to construct storm drainage improvements and/or make a fair share contribution to the construction of such improvements. Development of both the Rancho del Pueblo and iStar sites would not result in any new or greater impacts than the proposed General Plan.	same (LTS)

Table 3.10-3
Utilities and Service System Impacts of Residential Options Compared to Proposed Project

Impact Number(s)	Environmental Issue	Basis	Significance[1]
UTIL-5	Solid Waste	Development of the Residential Option on the Rancho del Pueblo and iStar sites would not increase the amount of development proposed by the General Plan. The development of residential uses on these sites would not result in any greater solid waste generation or cause greater impacts to existing landfill capacity than the proposed General Plan.	same (LTS)

[1] S= Significant; LTS = Less Than Significant
The determination of significance assumes implementation of proposed General Plan policies and actions and existing regulations and adopted plans and policies previously identified throughout Section 3.10.3 Utilities and Service System Impacts.
Bold = New Significant Impact

3.10.4 Mitigation and Avoidance Measures for Utilities and Service Systems Impacts

3.10.4.1 *Proposed General Plan*

No mitigation measures are required.

3.10.4.2 *Rancho del Pueblo and iStar Residential Options*

No mitigation measures are required.

3.10.5 Significance Conclusions

3.10.5.1 *Proposed General Plan*

Implementation of the proposed *Envision San José 2040 General Plan* in accordance with proposed policies and actions would result in less than significant impacts from construction of utilities and service systems, as needed, to serve increased demand and no mitigation measures are required. Such policies and actions reduce increased demand for utilities and service systems, limit development until services can be provided and avoid or mitigate for the construction of facilities for the provision of these services. **(Less Than Significant Impacts)**

3.10.5.2 *Rancho del Pueblo and iStar Residential Options*

Implementation of the proposed *Envision San José 2040 General Plan* including the Rancho del Pueblo and iStar Residential Options in accordance with proposed policies and actions and existing regulations would result in less than significant impacts from construction of utilities and service systems, as needed, to serve increased demand and no mitigation measures are required. Such policies and actions reduce increased demand for utilities and service systems, limit development until services can be provided and avoid or mitigate for the construction of facilities for the provision of these services. **(Less Than Significant Impacts)**