

CHAPTER SIX: HAZARDS AND SAFETY

INTRODUCTION

The hazards and safety chapter provides an overview of existing conditions specific to hazards in the Sunset Industrial Area (SIA). This includes considerations of geologic, seismic, flood, fire, and human hazards as well as air quality, climate change, and noise and vibration issues.

The purpose of the background assessment is to establish baseline conditions for the existing hazards within the SIA study area.

This chapter is organized into the following sections:

- Major Findings (Section 6.1)
- Geologic and Seismic Hazards (Section 6.2)
- Flood Hazards (Section 6.3)
- Fire Hazards (Section 6.4)
- Human Hazards (Section 6.5)
- Air Quality (Section 6.6)
- Climate Change (Section 6.7)
- Noise and Vibration (Section 6.8)
- Key Terms (Section 6.9)
- References (Section 6.10)

SECTION 6.1 MAJOR FINDINGS

- The SIA is not in an area of known faulting; there is a 10 percent chance for moderate ground shaking to occur on the site in a 50-year period.
- The SIA is in a wildland urban interface (WUI). Fires in such areas can result in major losses of property and structures.
- Past land uses may have resulted in undocumented contamination of soil and groundwater within the SIA.
- Potential safety concerns are associated with existing hazardous liquid and gas transmission lines, as well as the Union Pacific Railroad (UPRR) line and State Route (SR) 65.
- SR 65 has average daily traffic volumes in excess of 100,000 vehicles per day and is a potential source of mobile toxic air contaminants (TACs).
- Both the Sacramento Valley Air Basin (SVAB) and Placer County are in nonattainment for respirable particulate matter (PM₁₀).
- The predominant noise sources are the trains travelling on the UPRR tracks and vehicles traveling on SR 65. Combined, these sources generate noise levels that exceed 60 dBA CNEL, **which is the County's noise exposure standard for industrial land uses** at receptors within 3,625 feet of the UPRR tracks.

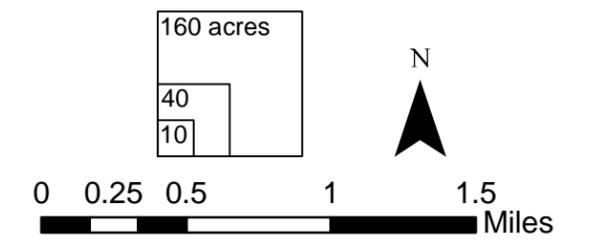
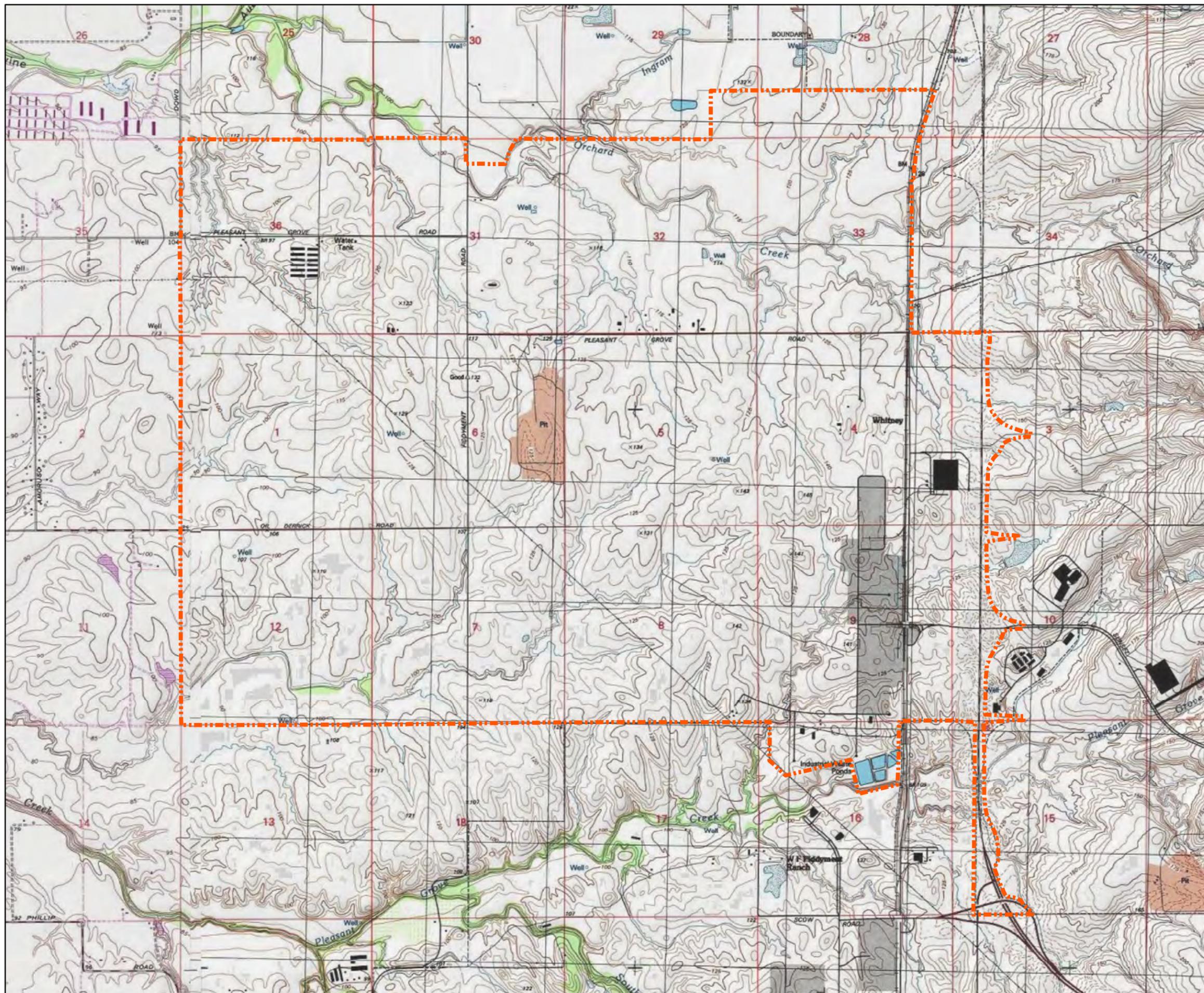
SECTION 6.2 GEOLOGIC AND SEISMIC HAZARDS

Existing Conditions

The SIA is mostly vacant land. Elevations generally range from 90 to 150 feet above mean sea level (msl), and the topography gently undulates with slopes of 2 to 9 percent. Area topography is shown on Figure 6-1. Several creeks and natural drainages traverse the area, including Orchard Creek and several unnamed tributaries to Pleasant Grove Creek. The SIA is in the North American River Groundwater Sub-Basin, which underlies western Placer County. Groundwater elevations generally range from 70 msl at the northeast corner to 10 msl at the southwest corner.

Sunset Area Plan | Figure 6-1
Area Topography

 Planning Area



Date: 04-20-2015
Source: ESRI, 2015 (Basemap)

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Geology

The SIA is adjacent to the transition zone between the Sacramento Valley and the foothills of the Sierra Nevada. Geologic formations mapped in the SIA include recent Holocene alluvium and basin deposits, older Pleistocene alluvium, and Pleistocene-Miocene volcanic deposits. The SIA is almost entirely underlain by the older Pleistocene alluvium of the Turlock Lake Formation, except for the northeast corner of the SIA. From the south side of Orchard Creek to the northeast corner of the area along a tributary to Pleasant Grove Creek in the southeast corner of site, Pleistocene alluvium of the Riverbank Formation are present. Minor areas of Holocene alluvium are present along Orchard Creek and Holocene basin deposits are present at the southwest corner of the SIA. A geologic map is shown on Figure 6-2.

The Turlock Lake Formation consists of semi-consolidated and interbedded, stiff to hard clays, dense to very dense silts and sands, and deeply weathered gravel. These constituents were deposited in layers by local streams as their courses meandered over time. The Riverbank Formation is similar to the Turlock Lake Formation. Varying degrees of cementation are a common occurrence within deposits of these formations. The Holocene alluvium consists of sand, silt and gravel deposited by present day streams. Holocene basin deposits are fine grained silts and clays (Helly and Harwood, 1985). Additionally, the eastern boundary of the SIA includes the western edge of volcanic Pliocene-Miocene deposits of the Mehrten Formation generally consisting of a tuff breccia (volcanogenic sedimentary rock).

Naturally-occurring Asbestos

Naturally-occurring asbestos includes fibrous minerals found in certain types of rock. Natural weathering and human disturbance can cause naturally-occurring asbestos to break down to microscopic fibers that are easily suspended in air. When airborne asbestos is inhaled, these thin **fibers irritate tissues and resist the body's natural defenses**. Asbestos exposure is possible where naturally-occurring asbestos minerals are present. According to the California Department of Conservation (DOC) Division of Mines and Geology (2000) naturally occurring asbestos is not known to occur in the SIA.

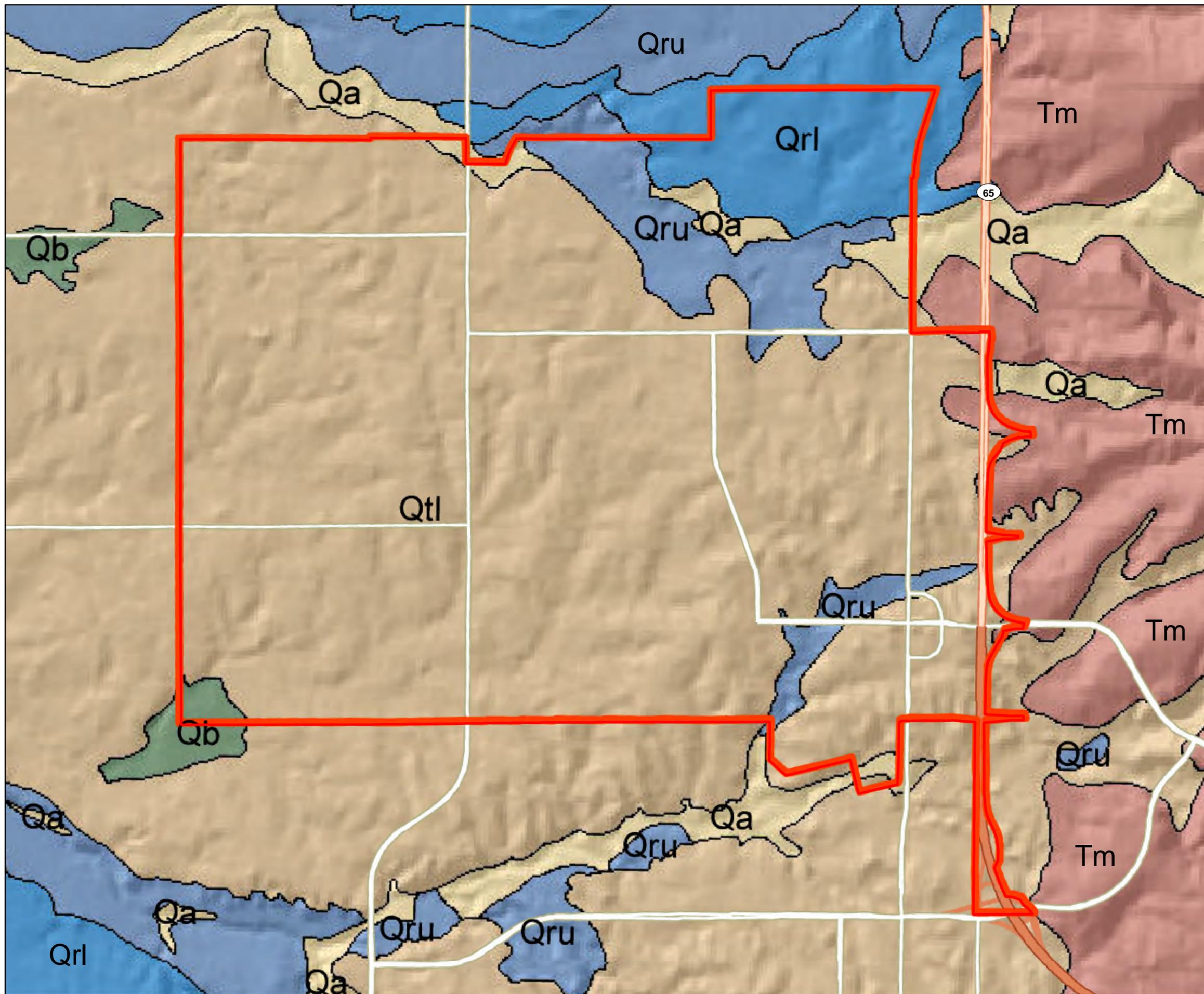
Faults and Seismicity

The Foothills Fault System is the nearest major zone of faulting to the SIA. This system is located to the east of the SIA along the western flank of the Sierra Nevada Mountains. The Spencerville, Deadman, and Maidu East faults within the Foothills Fault System are believed to have experienced an event during the Quaternary time (approximately the last 1.6 million years), and are considered potentially active. All other faults are considered inactive (see Figure 6-3). The SIA is within Seismic Zone 3 (a moderate risk zone) of the Uniform Building Code (UBC).

SIA PLAN UPDATE

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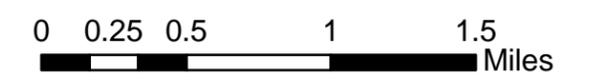
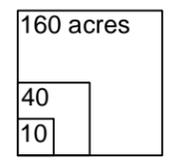
Sunset Area Plan | Figure 6-2
Geology



 Planning Area

Units (Helley and Harwood, 1985)

-  Qa Alluvium
-  Qb Basin Deposits, undivided
-  Qru Riverbank Formation, upper member
-  Qrl Riverbank Formation, lower member
-  Qtl Turlock Lake Formation
-  Tm Mehrten Formation



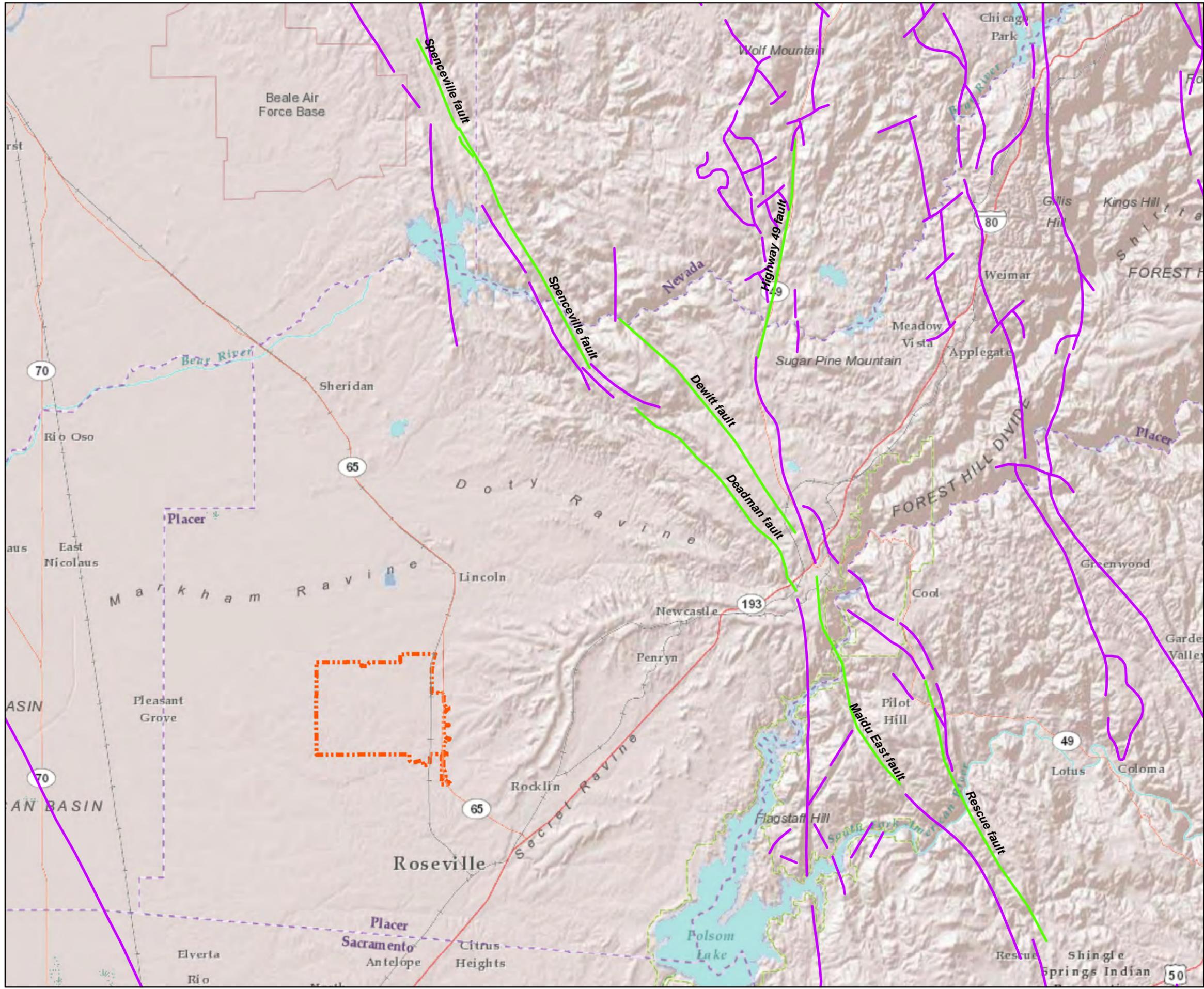
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Source: USGS Geologic Map of Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, CA 1985

Faults

- Pre-Quaternary Faults
- Quaternary Faults
- Planning Area



Active faults are those that have experienced displacement in historic time, while inactive faults have not. No evidence of Holocene activity (within the last 11,000 years) has been documented on any of the faults in the vicinity of the SIA. However, there is the potential for inactive faults to reactivate or experience displacement along a branch of the zone sometime in the future. Most of the faults that comprise the Foothills Fault System are considered by the California Division of Mines and Geology to be potentially active. The last seismic event recorded in the South Placer area measuring at least 4.0 on the Richter Scale occurred in 1908 on a north-south fault line between Folsom and Auburn and on an east-west line between Placerville and Roseville (Cramer et al 1978).

An earthquake may result in seismic hazards, including ground surface rupture, liquefaction, and ground shaking. The intensity of ground shaking is dependent upon several factors including distance from the epicenter, earthquake intensity, soil and rock types, geologic formation and condition, and soil moisture conditions. Secondary geologic hazards related to seismic events include settlement and slope instability failures (e.g., landslides). Earthquakes can result in disruption of utilities, and may also trigger fires, dam failures, or releases of hazardous material, compounding their disastrous effects.

Surface Rupture Potential

Surface rupture occurs when movement along both sides of a subsurface fault produces enough energy to cause a fracture on the surface. Seismically-induced ground rupture is considered most likely along faults that have a record of displacement sometime in the past 11,000 years (the Holocene Epoch). The Alquist-Priolo Act limits development on lands within a potential fault rupture zone. The SIA is not located within any special study area and is not subject to the Alquist-Priolo requirements. The potential for surface rupture is considered very low due to the distance between the SIA and major mapped fault zones (See Figure 6-3).

Ground Shaking

Ground shaking is a **general term referring to all aspects of motion of the earth's surface** resulting from an earthquake and is normally the major cause of damage during seismic events. The extent of ground shaking depends on the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions.

The Modified Mercalli Intensity (MMI) scale is a common measure of earthquake effects due to ground shaking intensity. The MMI values for intensity range from I (earthquake not felt) to IX (damage nearly total). Intensities IV to IX could cause moderate to significant structural damage. Anticipated earthquake intensity within a particular area is commonly estimated as **peak ground acceleration (PGA)**. Using the California Geologic Survey's Probabilistic Seismic Hazard Assessment Model, the PGA for the SIA for a 475-year event (a widely used benchmark for acceptable risk-based on the average level of ground shaking reached or exceeded with a mean recurrence interval of 475 years) is 0.10g to 0.15g, where "g" represents the force of

gravity. These PGA values translate into a MMI intensity value of VII. Therefore, there is a 10 percent chance of an earthquake of moderate shaking severity to occur in a 50-year period. A moderate shaking intensity creates little to no structural damage in well-designed and well-constructed buildings; however, concrete-lined drainage ditches might be damaged, as well as some types of masonry work. Drivers in cars would notice the shaking at this intensity, and the typical reaction of people inside buildings would be to run outside or seek a safe area.

Slope Instability

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered either by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Slope stability can depend on a number of complex variables, including the geology, structure, and amount of groundwater, as well as external processes such as climate, topography, slope geometry, and human activity. The factors that contribute to slope movements decrease the resistance in the slope materials or increase the stresses on the slope. Landslides can occur on slopes of 15 percent or less, but the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation, and transverse ridges. Slope instability at the SIA, as a result of seismic events, has a very low potential due to the lack of relief (slopes are generally less than 9 percent) across the area and the distance from active and potentially active faults.

Soil Characteristics

Overlying the geologic units described above is a layer of soil. Soil types are important in describing engineering constraints such as erosion and runoff potential, corrosion risks, and various behaviors that affect structures, such as expansion and settlement. Approximately 90 percent of the near-surface soils mapped within the SIA are Fiddymment-Kaseberg loams, Cometa-Fiddymment complex, and Alamo Fiddymment complex. The soil properties of the three primary soil units mapped by the Natural Resources Conservation Service within the SIA are summarized in Table 6-1.

TABLE 6-1
SOIL HAZARD POTENTIAL FOR THE PRIMARY SOIL UNITS IN THE SIA
 SIA Planning Area
 2015

Soil Name	Liquefaction Potential	Shrink-Swell Potential (Linear Extensibility) ¹	Erosion Potential by Water (Factor Kw) ²	Erosion Potential by Wind (Wind Erodibility Group) ³
Fiddymment-Kaseberg Loams	Low	Low (1.5%)	Moderate (.37)	Moderate (5)
Cometa-Fiddymment Complex	Low	Low (1.5%)	Moderately high (.49)	Moderate (3)
Alamo-Fiddymment Complex	Low	High (7.5%)	Moderately low (.24)	Moderate (4)

¹Shrink-swell classes are based on the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility of less than 3 indicates a low shrink-swell potential, 3 to 6 is associated with moderate potential, 6 to 9 is associated with high potential, and over 9 is very high potential for shrink-swell conditions. If the shrink-swell potential is rated moderate to very high, shrinking and swelling can damage buildings, roads, and other structures. The high degree of shrinkage associated with high and very high shrink-swell potentials can damage plant roots.

²Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water. Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

³A wind erodibility group consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Source: NRCS 2015

Liquefaction Potential

Soil liquefaction is caused by pressure waves moving through the ground due to earthquakes. Loose granular soils and non-plastic silts that are saturated by relatively shallow groundwater (generally less than 50 feet) are susceptible to liquefaction. Liquefaction causes soil to lose strength and “liquefy,” triggering structural distress or failure due to the dynamic settlement of the ground or a loss of strength in the soils underneath structures. Liquefaction in a subsurface layer can cause lateral spreading of the ground surface, which usually takes place along weak shear zones that have formed within the liquefiable soil layer.

Soils at the SIA consist of very stiff to hard fine soils and dense granular soils that have sufficient density, variable cementation, and are generally unsaturated within 50 feet of the ground surface. The potential for liquefaction at the SIA is very low.

Expansive Soil Potential

Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell). When these soils swell, the change in volume can exert significant pressures on loads that are placed on them, such as building and structure foundations or underground utilities, and can result in structural distress and/or damage. Often, grading, site preparations, and backfill operations associated with subsurface structures can eliminate the potential for expansion.

The potential for soils to demonstrate expansive properties is primarily dependent upon clay content. Testing of soils within the northeast quarter of the SIA indicate that most soils do not have a high shrink-swell potential. However, at or near surface Alamo clay soils of the Alamo-Fiddymont complex have a high shrink-swell potential. The Alamo-Fiddymont complex soils are mapped over about 25 percent of the SIA. As a result, the potential for expansive soils within the SIA is considered moderate.

Erosion Potential

Erosion is a natural process whereby soil and highly weathered rock materials are worn away and transported, most commonly by wind or water. Soil erosion can become problematic when human intervention causes rapid soil loss and the development of erosional features (such as incised channels, rills, and gullies) that undermine roads, buildings, or utilities. Vegetation clearing and earth moving reduces soil structure and cohesion, resulting in accelerated erosion. This typically occurs during construction activity involving grading and soil moving activities that loosen soils and makes them more susceptible to wind and water erosion. Natural rates of erosion vary depending on slope, soil type, and vegetative cover. Typically, soils with high amounts of silt are more easily eroded, while coarse-grained (sand and gravel) soils are less susceptible to erosion.

The predominant soils mapped across the SIA all have a moderate susceptibility to erosion. The erosion potential of the soils on or at the near surface is considered to be low due in part to the presence of higher clay content soils and generally low relief across the SIA.

Regulatory Setting

This following provides an overview of the Federal, State, and County laws, codes, goals, and policies relevant to the geologic and seismic hazards that could affect the SIA.

Federal

There are no Federal fire laws, regulations, policies, programs, or plans that are applicable to the SIA Plan.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act regulates development on or near active fault traces and prohibits the placement of structures intended for human occupancy from being built across these traces. The SIA is not located within the vicinity of an active fault trace.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. The SIA is not located within a seismic hazard zone wherein development would be regulated.

California Building Code (CBC)

The CBC or the California Code of Regulations (CCRs), Title 24, Part 2, is a portion of the California Building Standard Code. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable.

Published by the International Conference of Building Officials, the UBC is a widely adopted model building code in the United States. The CBC incorporates by reference the UBC with necessary California amendments, including earthquake conditions.

Local

Placer County General Plan

The Placer County General Plan contains several goals and policies pertaining to geologic hazards and seismicity. The policies contained within the General Plan that are relevant to the SIA include preparation of soils engineering, geologic, and seismic analysis prior to permitting development in areas prone to geological or seismic hazards; preparation of preliminary soils reports prior to approval in areas where critically expansive soils are known or suspected; and minimization of hazards in seismically active areas through proper building location and design. Specific policies included in **Section 8, “Health and Safety,”** to minimize the loss of life, injury, and property damage due to seismic and geological hazards are listed below.

- **Policy 8.A.1.** The County shall require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., ground shaking, landslides, liquefaction, critically expansive soils, avalanche).

- **Policy 8.A.2.** The County shall require submission of a preliminary soils report, prepared by a California registered civil engineer and based upon adequate test borings, for every major subdivision and for each individual lot where critically expansive soils have been identified or are expected to exist.
- **Policy 8.A.3.** The County shall prohibit the placement of habitable structures or individual sewage disposal systems on or in critically expansive soils unless suitable mitigation measures are incorporated to prevent the potential risks of these conditions.
- **Policy 8.A.4.** The County shall ensure that areas of slope instability are adequately investigated and that any development in these areas incorporates appropriate design provisions to prevent landsliding.
- **Policy 8.A.5.** In landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems; removal of vegetative cover; and steepening of slopes and undercutting the bases of slopes.
- **Policy 8.A.6.** The County shall require the preparation of drainage plans for development in hillside areas that direct runoff and drainage away from unstable slopes.
- **Policy 8.A.7.** In areas subject to severe ground shaking, the County shall require that new structures intended for human occupancy be designed and constructed to minimize risk to the safety of occupants.
- **Policy 8.A.8.** County shall continue to support scientific geologic investigations which refine, enlarge, and improve the body of knowledge on active fault zones, unstable areas, severe ground shaking, avalanche potential, and other hazardous conditions in Placer County.
- **Policy 8.A.9.** The County shall require that the location and/or design of any new buildings, facilities, or other development in areas subject to earthquake activity minimize exposure to danger from fault rupture or creep.
- **Policy 8.A.10.** The County shall require that new structures permitted in areas of high liquefaction potential be sited, designed, and constructed to minimize the dangers from damage due to earthquake-induced liquefaction.
- **Policy 8.A.11.** The County shall limit development in areas of steep or unstable slopes to minimize hazards caused by landslides or liquefaction.

County Standards and Review Process

Placer County has standards and specifications concerning grading, erosion control, floodplain, inspection, and permitting that would apply to development of the SIA. The Placer County Engineering and Surveying Division requires and reviews improvement plans, grading permits,

building permits, and drilling permits. Detailed erosion control and drainage measures are required for all Improvement Plans.

SECTION 6.3 FLOOD HAZARDS

Existing Conditions

Flooding

The SIA is crossed by a number of intermittent drainage-ways and one permanent stream. Flooding occurs in areas adjacent to local creeks during periods of heavy rainfall. Localized flooding causes streams to overflow their banks, flooding property and structures located adjacent to channels. The vast majority of annual precipitation, and therefore flooding potential, occurs between the months of November and April in the area. In addition to periods of heavy rainfall, the nearly level nature of the SIA and downstream impediments, which can cause the water to back up, can further contribute to flooding potential. Conversion of agricultural areas to developed, impervious land uses further increases the potential for flooding by reducing infiltration and increasing runoff during storm events.

Flooding problems within the SIA range from local nuisance ponding to major flooding. The Auburn Ravine and Pleasant Grove Creek watersheds have extensive records of flooding. The floods of 1986 and 1995 are the largest and most damaging on record, with calculated recurrence intervals of about 50 to 100 years.

As future land uses allow for significant conversion of agricultural areas to industrial and commercial development within the SIA, and as more impervious surfaces are constructed, the potential for storm flows to increase over time could also increase flooding potential within the plan area. The increase in land coverage by buildings and pavement increase flood flows and volumes, both within the plan area, and downstream of the plan area boundaries. New developments will be required to provide local on-site detention to mitigate downstream impacts.

Flood Insurance Rate Maps

The Federal Emergency Management Agency (FEMA) prepares flood maps that delineate estimated 100-year maximum flood levels within certain areas. Flood Insurance Rate Maps (FIRMs) identify Special Flood Hazard Areas, which are areas that will be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year. The 1 percent annual chance flood is also referred to as the base flood, or 100-year flood (FEMA 2015). The FIRMs identify the areas within the 100-year flood zone as Zone A (no base flood elevations determined) and Zone AE (base flood elevations determined). FEMA has also identified 500-year floodplains, which are areas with a 0.2 percent probability of flooding in any given year. The 100-year and 500-year flood zones are identified in Figure 6-4, and generally correspond to the surface waters in the northeast, southeast, and southwest portions of the SIA. It is important

to note that FEMA has only mapped floodplains on stream reaches that have been studied and mapped for insurance purposes. Floodplains exist on all streams, whether mapped, or not.

The SIA is not within one of the 10 urban communities in the Sacramento-San Joaquin Valley for which DWR has released informational maps depicting the 200-year flood event (i.e., with a 0.5 percent annual potential for occurrence). These maps provide information on the water surface elevation of flooding in the event of failure of State Plan of Flood Control facilities during a 200-year event. However, 200-year floodplains that may exist in the area, even if not mapped. These floodplains are a constraint to development.

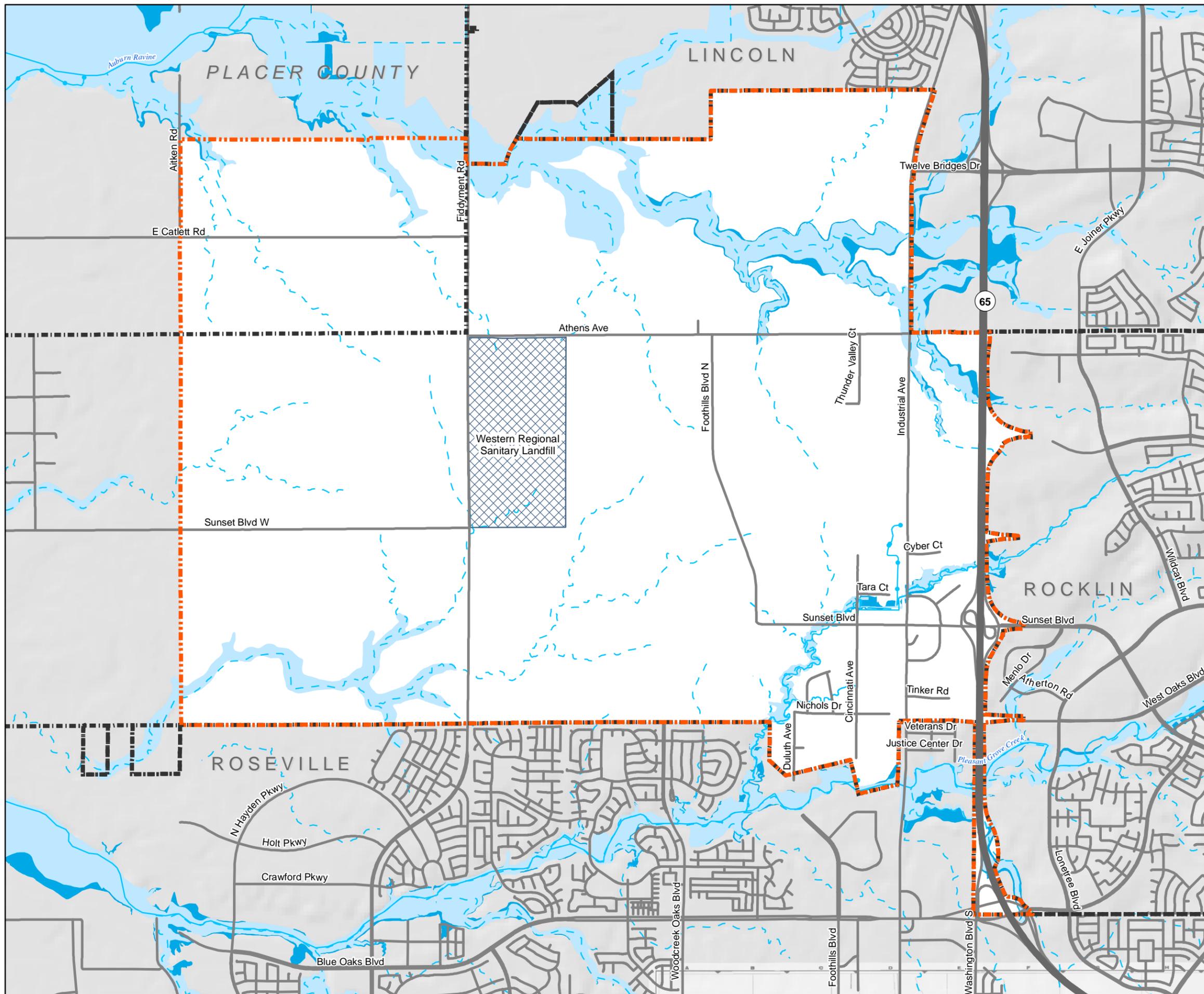
SIA PLAN UPDATE

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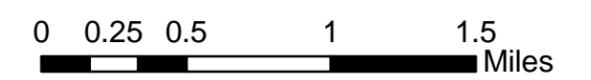
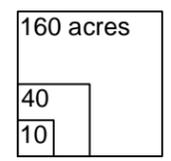
Sunset Area Plan | Figure 6-4

FEMA Flood Plains

-  Planning Area
-  City Limits
-  Western Regional Sanitary Landfill
- Surface Water Features**
 -  Perennial
 -  Canal
 -  Intermittent
-  100-year Flood Zone
-  500-year Flood Zone



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Date: 09-15-2015
Source: Placer County, 2015

Regulatory Setting

Federal

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) has nationwide responsibility for flood management. In California, flood management is performed through a combination of projects operated by USACE, U.S. Bureau of Reclamation, the State, local agencies, and private proponents, all under official USACE flood management plans.

Federal Emergency Management Agency

FEMA is responsible for maintaining minimum federal standards for floodplain management within the United States and territories of the United States. As discussed below, FEMA plays a major role in managing and regulating floodplains, which are defined as lowland and relatively flat areas adjoining inland and coastal waters that are subject to a 1 percent or greater chance of flooding in any given year (100-year floodplain).

National Flood Insurance Act of 1968

The National Flood Insurance Program (NFIP) offers flood insurance to homeowners, renters, and business owners in participating communities. These communities agree to adopt and enforce ordinances that meet or exceed requirements established by FEMA to reduce the risk of flooding. FEMA administers the NFIP and delineates areas subject to flood hazard on FIRMs for each participating community. The FIRMs show Special Flood Hazard Areas (areas subject to inundation by a flood that has a 1 percent chance or greater of being equaled or exceeded in any given year). The 100-year flood is the national minimum standard to which communities regulate their floodplains through the NFIP. The FIRM zones within the SIA are identified on the FIRM maps, which are defined by FEMA as follows:

- **Zone A:** Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no base flood elevations or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.
- **Zone AE:** Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base flood elevations are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.
- **Zone X:** Areas of moderate to low flood hazard that are outside of the 100-year floodplain.

Flood Insurance Reform Act of 2012 (Biggert-Waters Act)

In 2012, Congress passed this act which calls on FEMA to make a number of changes to the way the NFIP is run. The legislation requires the NFIP to raise flood insurance rates to reflect true risk, make the program more financially stable, and change how FIRM updates affect policyholders. On March 13, 2014, Congress amended the 2012 Biggert-Waters law with the “**Homeowner Flood Insurance Affordability Act,**” HR 3370. President Obama signed the bill into law on March 21, 2014. This amendment to the Flood Insurance Reform Act is designed to:

- Repeal the Federal Emergency Management Agency’s (FEMA) authority to raise flood insurance rates at the time of property sale,
- Allow buyers to assume the seller’s current rates so the rate stays/transfers with the property, not the owner,
- Restore grandfathering so properties built and maintained to code in one flood zone are not rated in a higher cost zone, simply because FEMA corrects a mis-rating on a later flood map,
- Cap premium increases at 18 percent annually for new properties or 25percent for the older ones, and
- Refund premiums paid by property owners in excess of rates under these amendments.

State

California Department of Water Resources (DWR)

As mandated by the California Water Code, DWR has responsibility for the supervision of dams and reservoirs, which is delegated to the Division of Safety of Dams. The functions of statewide flood forecasting, flood operations, and other key flood emergency response activities are the primary missions of the Division’s Hydrology and Flood Operations Office.

California Building Code (CBC)

The CBC contains requirements for constructing structures in flood hazard areas. Flood hazard areas are established as **areas of special flood hazard as identified by FEMA’s Flood Insurance Study** as adopted by the local authority having jurisdiction where the project is located, as amended or revised with the accompanying FIRMs. The CBC contains standards for the construction of new buildings, structures, and portions of buildings and structures, including substantial improvements and restoration of substantial damage to buildings and structures. These structures are to be designed and constructed to resist the effects of flood hazards and flood loads (CBC Section 1612A).

Central Valley Flood Protection Board

Certain locations in the county are subject to encroachment permits from the Central Valley Flood Protection Board. Approval by the Board is required for projects or uses that encroach into rivers, waterways, and floodways within and adjacent to federal and State authorized flood control projects and within designated floodways and regulated streams adopted by the Board.

The Board exercises jurisdiction over the levee section, the waterward area between project levees, a minimum 10-foot-wide strip adjacent to the landward levee toe, within 30 feet of the top of the banks of unleveed project channels, and within designated floodways adopted by the Board. Activities outside of these limits which could adversely affect the flood control project are also under Board jurisdiction.

2007 California Flood Legislation

In 2007 new legislation was passed (Senate Bills (SB) 5 and 17, and Assembly Bills (AB) 5, 70, 156, and 162) to improve flood protection, develop plans to better manage the flood protection system, and mandate that local planning efforts recognize the risk of flooding. Together these bills establish a comprehensive approach to floodplain planning and management at the state, regional, and local levels. A key component of this legislation is the requirement to establish an Urban Level of Flood Protection (ULOP) at the 200-year floodplain level.

Urban Level of Flood Protection (ULOP)

The Urban Level of Flood Protection is the level of flood protection that is necessary to withstand flooding that has a 1-in-200 chance of occurring in any given year using criteria consistent with, or developed by, the Department of Water Resources. This excludes areas of shallow flooding (inundation less than 3 feet deep) or flooding from local drainage (tributary areas of less than ten square miles) that meets the FEMA standard of flood protection (Government Code Section 65007 (I)(n)).

There are five location criteria that must all be met in order for the ULOP to apply. While the SIA meets one of the criterion (the city or county must be located within the Sacramento San Joaquin Valley), only certain areas of the SIA may meet the following, remaining four location criteria:

1. It is located within an urban area that is a developed area with 10,000 residents or more, or an urbanizing area that is a developed area or an area outside a developed area that is planned or anticipated to have 10,000 residents or more within the next ten years.
2. It is located within a flood hazard zone that is mapped as either a special hazard area or **an area of moderate hazard on FEMA's official FIRM** for the NFIP.
3. It is located within an area with a potential flood depth above three feet from sources of flooding other than localized conditions that may occur anywhere in a community, such

as localized rainfall, water from stormwater and drainage problems, and water from temporary water and wastewater distribution system failure.

4. It is located within a watershed with a contributing area of more than ten square miles.
5. In order to define these areas in the county, an Implementation Program within a 2015 General Plan Amendment has been developed to partially complete mapping of the areas subject to the ULOP and streamline development review.

Local Placer County Flood Control and Water Conservation District

The Placer County Flood Control and Water Conservation District was established in 1984 by the State Legislature as a Special District, separate from County government, to address flood control issues arising from growth. District boundaries are the same as Placer County boundaries. The primary purpose of the District is to protect lives and property from the effects of flooding by comprehensive, coordinated flood prevention planning. The District uses consistent standards to evaluate flood risk and implements flood control measures, such as requiring new development to construct detention basins and operation and management of a flood warning system. The District implements regional flood control projects, develops and maintains master plans for selected watersheds in the county, provides technical planning, support, and information during times of flood and drought, operates and maintains the county flood warning system; reviews proposed development projects for compliance with District standards, develops hydrologic and hydraulic models, and provides technical support for the Office of Emergency Services (OES) activities.

Placer County Local Hazard Mitigation Plan (LHMP)

Approved in April 2010, Placer County's LHMP was prepared in pursuant to the requirements of the Disaster Mitigation Act of 2000. Updates are required on a 5-year basis in order for the County to remain eligible for future federal disaster mitigation funding (Placer County is initiating its update to the 2010 LHMP). As a proactive measure towards funding the next update, Placer County Office of Emergency Services applied for the FEMA Pre-Disaster Mitigation Grant Program for Federal Fiscal Year 2013 on September 23, 2013 (Placer County 2015).

Placer County Countywide General Plan

The Placer County General Plan was updated in May 2013 and consists of two types of documents: the Countywide General Plan and a set of more detailed community plans covering specific areas of the unincorporated county. The Countywide General Plan provides an overall framework for development of the county and protection of its natural and cultural resources. Through a number of elements, it includes goals, policies, standards, implementation programs, **and quantified objectives that constitute Placer County's formal policies for land use,** development, and environmental quality. Community plans, adopted in the same manner as the

Countywide General Plan, provide a more detailed focus on specific geographic areas within the unincorporated areas. The goals and policies contained in the community plans supplement and elaborate upon, but do not supersede, the goals and policies of the Countywide General Plan.

The Public Facilities and Services and Health and Safety Elements of the Placer County General Plan contains the following goals and policies to address impacts resulting from flood hazards and risks due to development:

- **Goal 8.B:** To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from flood hazards.
 - **Policy 8.B.1.** The County shall promote flood control measures that maintain natural conditions within the 100-year floodplain of rivers and streams.
 - **Policy 8.B.2.** The County shall continue to participate in the Federal Flood Insurance Program.
 - **Policy 8.B.3.** The County shall require flood proofing of structures in areas subject to flooding.
 - **Policy 8.B.5.** The County shall coordinate with neighboring jurisdictions to mitigate the impacts of new development in Placer County that could increase or potentially affect runoff onto parcels downstream in a neighboring jurisdiction.
 - **Policy 8.B.6.** The County shall prohibit the construction of facilities essential for emergencies and large public assembly in the 100-year floodplain, unless the structure and access to the structure are free from flood inundation.
 - **Policy 8.B.7.** The County shall require flood control structures, facilities, and improvements to be designed to conserve resources, incorporate and preserve scenic values, and to incorporate opportunities for recreation, where appropriate.
 - **Policy 8.B.8.** The County shall require that flood management programs avoid alteration of waterways and adjacent areas, whenever possible.

Proposed New General Plan Policies

General Plan amendments that includes policy changes will be considered by the Placer County Board of Supervisors in late 2015. These new policies include:

- **Proposed Policy 8.B.9.** The County shall require evaluation of potential flood hazards prior to approval of a discretionary or ministerial permit that would result in the construction, or modification of structures, to determine whether the proposed project is consistent with the protection standards for the County Regulatory Floodplain. The County will not approve any discretionary project *or* any ministerial permit that would result in the construction, or modification of structures for any property within the County Regulatory Floodplain, unless the

required flood protection specific to that area has been demonstrated in accordance with County ordinances and guidelines.

- **Proposed Policy 8.B.10.** The County shall coordinate with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife, the Resource Conservation District, the Federal Emergency Management Agency, the State Department of Water Resources, the Central Valley Flood Protection Board (CVFPB), and the Placer County Flood Control and Water Conservation District, in defining existing and potential flood problem areas.
- **Proposed Policy 8.B.11.** If any project, including the modification of an existing project, falls within the jurisdiction regulated by the CVFPB (e.g., levees, regulated streams, and designated floodways), an encroachment permit must be obtained from the CVFPB by the project applicant.

Placer County Municipal Code (Chapter 15.52, Flood Damage Prevention Regulations)

The purpose of this article is to promote public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specific areas by specific provisions, including standards for developing lots in Zones A and C, standards for construction in special flood hazard areas, as well as standards for utilities and subdivisions.

SECTION 6.4 FIRE HAZARDS

Existing Conditions

The fire season generally occurs during the hotter, drier months and extends from early spring through late fall in Placer County. Fire conditions arise from a combination of high temperatures, low moisture content in the air and fuel, an accumulation of vegetation, and high winds. These conditions, if coupled with high winds and years of drought, can compound the potential for wildfire.

Fire behavior is the manner in which fire reacts to weather, topography, and fuels. The following three major factors influence **wildfires and predict a given area's potential to burn:**

- **Fuel.** Fuel is the material that feeds a fire and is generally classified by type and by volume. The type of prevalent fuel directly influences the behavior and intensity of a wildfire. Fuel sources are diverse and include vegetation such as dead tree leaves, twigs, and branches, to dead standing trees, live trees, brush, and cured grasses. Manmade structures such as homes and other associated combustibles are also fuel sources. Of the three factors that influence fire behavior, fuel is the only factor under human control. Fuels within and surrounding the SIA are dominated by grasses and agricultural crops.
- **Topography.** An area's terrain and slopes affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases because of the **tendency of a fire's heat to rise via convection.** The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes. The SIA is relatively flat; therefore topography would not substantially increase the rate of wildfire spread in the planning area.
- **Weather.** Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out fuels that feed wildfires, creating a situation in which fuel will ignite more readily and burn more intensely. Therefore, during periods of drought, the threat of wildfire increases.
- **Wind.** Wind is the most treacherous weather factor. The greater a wind, the faster a fire will spread and the more intense it will be. North winds in Placer County are especially conducive to hot, dry conditions, which can lead the National Weather Service to issue Red Flag Warnings indicating extreme fire danger. In addition to wind speed, sudden temperature changes can cause shifts in wind direction. Lightning also ignites wildfires (Placer County 2010: 4.99).

Wildland Fire Hazards

Placer County communities are becoming more susceptible to wildfire risk as a result of past fire suppression efforts coupled with increases in population. These trends have increased the number of people living in heavily vegetated areas where wildlands meet urban development, also referred to as the Wildland Urban Interface (WUI). Fires in WUI areas can result in major losses of property and structures. Within Placer County the area starting in the foothills just east of Auburn and extending east and north to the county line is most prone to wildfire due to its terrain and vegetation. **According to Placer County's 2012** Community Wildfire Protection Plan (CWPP), the SIA lies within a WUI boundary (Placer County 2012: 80). Regarding specific points of interest in the SIA, the CWPP found that Thunder Valley Casino is at low risk for wildfire because it is surrounded on all sides by non-flammable surfaces (Placer County 2012: 99). Sunset Industrial Park, located in the southeast portion of the planning area, is susceptible to wildfire, and also presents the risk, during a wildfire, of spontaneous combustion of hazardous and flammable materials present at the facilities (Placer County 2012: 98).

While the SIA is not located in a Very High Fire Hazard Severity Zone (VHFHSZ), **Placer County's 2010 LHMP describes the fire threat** level of the planning area as moderate. **Fire threat levels were mapped using CAL FIRE's fire hazard severity zones and wildfire data from its Fire and Resource Assessment Program.** Although the western portions of the county pose a limited and more moderate wildfire threat, the SIA is still at risk to smaller grassfires, especially during the dry, hot summers. Additionally, while the area is currently at moderate risk for wildland fires, the Cal-Adapt model, which presents potential effects under various climate-change scenarios, shows that the SIA itself is projected to see a potential decrease in the number of acres burned by wildfire in 2085 as compared to 2020 projections.

History of Wildland Fires

Based on CAL FIRE's historical database, 149 significant wildfires of over 100 acres have occurred in Placer County between 1908 and 2007, most of which were in eastern Placer County. Within the SIA Plan Area, the last fires recorded that were greater than 100 acres occurred in the 1990s. In 2002, the Sierra Fire, which occurred approximately eight miles from the SIA in the communities of Loomis and Granite Bay, burned approximately 595 acres of grass, brush, and oak. The fire destroyed six structures and threatened two schools. Approximately 100 homes were evacuated and more than 1,000 homes in both communities were threatened. FEMA provided federal funds to assist in fighting this wildfire. This fire started out small and quickly grew and got out of hand, becoming quite significant.

Regulatory Setting

Federal

There are no Federal fire laws, regulations, policies, programs, or plans that are applicable to the SIA Plan Update.

State

California Department of Forestry and Fire Protection (CAL FIRE)

CAL FIRE implements statewide laws aimed at reducing wildfire hazards in State Responsibility Areas (SRAs). SRAs are lands for which the State has primary financial responsibility for preventing and suppressing fires, as determined by the State Board of Forestry pursuant to Public Resource Code (PRC) Sections 4125 and 4102. The state provides protection to private, undeveloped land as well. Fire safe regulations address road standards for fire equipment access, standards for signage, minimum water supply requirements for emergency fire use, and fuel breaks and greenbelts, among others. Fire protection outside SRAs is the responsibility of federal or local jurisdictions. These areas are referred to respectively by CAL FIRE as federal responsibility areas (FRAs) and local responsibility areas (LRAs). The SIA is located within an LRA.

CAL FIRE maps the fire hazard severity of wildland areas that contain substantial forest fire risks and hazards in SRA areas. Meanwhile, the Board of Forestry is responsible for identifying VHFHSZs in both SRAs and LRAs.

Uniform Fire Code (UFC)

The UFC contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the UFC include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and premises. The UFC contains specialized technical regulations related to fire and life safety.

California Fire Code (Title 24, Part 9, California Code of Regulations)

The California Fire Code is Part 9 of the CCR, Title 24, also referred to as the California Building Standards Code. The California Fire Code incorporates the UFC with necessary California amendments. The Code prescribes regulations consistent with nationally recognized good practices for the safeguarding to a reasonable degree of life and property from the hazards of fire, explosion, and dangerous conditions arising from the storage, handling and use of

hazardous materials and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or premises and provisions to assist emergency response personnel.

Government Code Section 66474.02

Before approving a tentative map (or a parcel map where a tentative map is not required) for an area located in an SRA or a VHFHSZ zone, the legislative body of the County must find that the design and location of each lot in the subdivision, and the subdivision as a whole, are consistent with applicable regulations adopted by CAL FIRE pursuant to PRC Sections 4290 and 4291, ensure that structural fire protection and suppression services will be developed, and find that points of ingress and egress meet the road standards for fire equipment access adopted pursuant to PRC Section 4290 and any applicable local ordinance.

2010 Strategic Fire Plan for California

The 2010 Strategic California Fire Plan is the **State's road map** for reducing the risk of wildfire. By emphasizing fire prevention, the Fire Plan seeks to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health.

Local

Placer County Fire Department

Placer County contracts with CAL FIRE for fire protection services in the unincorporated areas of the County, which includes the SIA Plan Area. Placer County Fire provides year-round, all-hazard fire and emergency services to over 475 square miles of unincorporated County area. Fire service is provided by both full-time and volunteer firefighters (Placer County, 2015).

Placer County Countywide General Plan

Both the Public Facilities and Services Element and Health and Safety Element of the Placer County General Plan contain the following goals and policies to address impacts resulting from increased wildland and structural fire hazards and risks due to development:

- **Goal 4.I.** To protect residents of and visitors to Placer County from injury and loss of life and to protect property and watershed resources from fires.
 - **Policy 4.I.1.** The County shall encourage local fire protection agencies in Placer County to maintain the following minimum fire protection standards (expressed as Insurance Service Organization (ISO) ratings):
 - ISO 4 in urban areas
 - ISO 6 in suburban areas
 - ISO 8 in rural areas

- **Policy 4.I.2.** The County shall encourage local fire protection agencies in the county to maintain the following standards (expressed as average response times to emergency calls):
 - 4 minutes in urban areas
 - 6 minutes in suburban areas
 - 10 minutes in rural areas
- **Policy 4.I.3.** The County shall require new development to develop or fund fire protection facilities, personnel, and operations and maintenance that, at a minimum, maintains the above service level standards.
- **Policy 4.I.5.** The County shall work with local fire protection agencies and implement ordinances to control fire losses and fire protection costs through continued use of automatic fire detection, control, and suppression systems.
- **Policy 4.I.6.** The County shall continue to promote standardization of operations among fire protection agencies and improvement of fire service levels.
- **Policy 4.I.7.** The County shall maintain and strengthen automatic aid agreements to maximize efficient use of available resources.
- **Policy 4.I.8.** The County shall work with local fire protection agencies to maintain a pre-fire planning program with selected high-risk occupancies reviewed at least annually.
- **Policy 4.I.9.** The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and Other County and local ordinances.
- **Goal 8.C.** To minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires.
 - **Policy 8.C.2.** The County shall require that discretionary permits for new development in fire hazard areas be conditioned to include requirements for fire-resistant vegetation, cleared fire breaks, or a long-term comprehensive fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.
 - **Policy 8.C.3.** The County shall require that new development meet State, County, and local fire district standards for fire protection.
 - **Policy 8.C.4.** The County shall refer development proposals in the Unincorporated County to the appropriate local fire agencies for review for compliance with fire safety standards. If dual responsibility exists, then both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall be applied.

- **Policy 8.C.5.** The County shall ensure that existing and new buildings of public assembly incorporate adequate fire protection measures to reduce the potential loss of life and property in accordance with state and local codes and ordinances.
- **Policy 8.C.7.** The County shall work with local fire protection agencies, the California Department of Forestry and Fire Protection, and the U.S. Forest Service to promote the maintenance of existing fuel breaks and emergency access routes for effective fire suppression.
- **Policy 8.C.11.** The County shall continue to work cooperatively with the California Department of Forestry and Fire Protection and local fire protection agencies in managing wildland fire hazards.

Placer County Community Wildfire Protection Plan 2012 (CWPP)

The CWPP provides recommendations to reduce the threat of wildfire-related damage to people, property, and ecological elements within the county. This document estimates the hazards and risks associated with wildland fire in proximity to WUI within each applicable Fire Safe Council areas. According to the CWPP, the SIA lies within the Greater Lincoln Fire Safe Council. This information, in conjunction with identification of the values at risk, defines areas of special interest and allows for prioritization of mitigation efforts. From the analysis of the data presented, solutions and mitigation recommendations are offered to aid homeowners, land managers, and other interested parties in developing short-term and long-term planning efforts.

Placer County Local Hazard Mitigation Plan (LHMP)

Placer County's LHMP outlines the county's vulnerabilities to wildfires, history of past fires, and the likelihood of future occurrences. It also identifies a number of wildfire mitigation actions to help manage and prevent wildfires, which can cause losses to human life, property, and natural resources. The LHMP also describes other plans and programs that the County is implementing to help mitigate impacts to air quality. Placer County has developed a Strategic Plan for Wildfire Protection and Biomass Utilization. The goal of the program is to promote projects that will diminish the threat of catastrophic wildfires, improve public health and safety, reduce pollution, and enhance the environment.

Placer County Municipal Code

Chapter 15.04 (Fire Code Adopted)

Placer County has adopted the 2013 California Fire Code. Municipal Code Title 15 regulates site and building development in accordance with applicable building codes.

Chapter 9.32 (Fire Prevention)

Chapter 9.32 of Title 9 of the Municipal Code (Public Peace, Safety, and Welfare) outlines permitting requirements for various flammable materials, the process for vegetation abatement on unimproved parcels, and fire break requirements for specific buildings in the county.

SECTION 6.5 HUMAN HAZARDS

Existing Conditions

Historic Land Uses

A review of aerial photography reveals that the SIA was used for crops or grazing from 1947 through 1961. Beginning in 1961 the area began to undergo development with industrial uses. According to aerial photographs from 1966, industrial development in the southeast portion of the SIA began between 1961 and 1966. In 1966 the Formica Corp facility and the Sunset Septage Receiving facility were present (see #5 and #11 on Figure 6-5), as well as a rural residence near the northern boundary of the planning area and one commercial building north of Athens Avenue between Fiddymont Road and North Foothills Boulevard.

By 1984 several additional industrial facilities were present in the SIA. These facilities include the Western Regional Sanitary Landfill (WRSL) (#3) at the southeast corner of Fiddymont Road and Athens Avenue, and the concrete supply and wood recycling facilities north of Athens Avenue (#1). Several additional industrial facilities were established near Sunset Boulevard and Cincinnati Avenue, as well as by the large warehouse facility that houses the Ace Hardware Distribution Center (3301 Industrial Avenue, Rocklin). Formica Corp (#5) and the Sunset Septage Receiving Facility (#11) appear to have expanded operations in 1984.

By 1993 additional development occurred in the southeast portion of the SIA along Cincinnati Avenue. This development included construction of the Roseville Power Plant No. 2 (2155 Nichols Drive, Rocklin) in the southeastern area of the SIA. In addition, the Rio Bravo Biomass plant (#4) is present south of Athens Avenue in 1993. Additional commercial and industrial development is observed in aerial photographs from 1998, 2005, and 2009 in the southeast portion of SIA.

Current Land Uses

During a site reconnaissance in March 20, 2015, several facilities that use fuel and hazardous materials and generate wastes were noted. These facilities are governed by material use, waste generation, and risk management policies/procedures. Some sites within the SIA boundary are further regulated as chemical release sites.

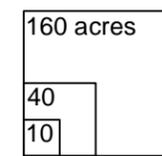
Sunset Area Plan | Figure 6-5 Regulated Hazardous Materials Sites

- Current Site
- Former Site
- ⊗ Active Investigation or Remediation
- Gas Transmission Pipelines
- Hazardous Liquid Pipelines
- Planning Area
- City Limits

Regulated Hazardous Materials Sites

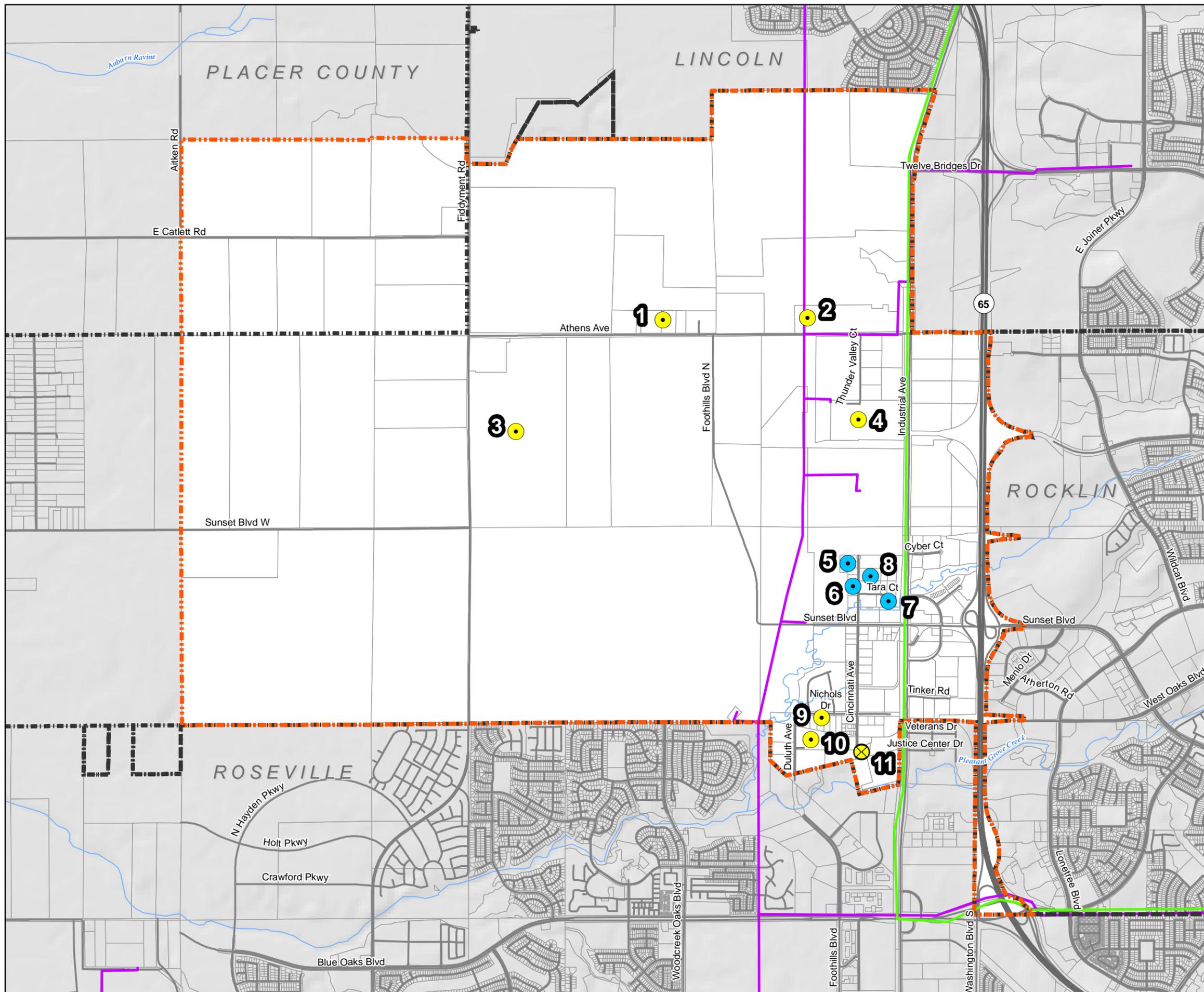
- 1: Athens Industrial Area
- 2: Thunder Valley Casino WWTP
- 3: Western Regional Sanitary Landfill
- 4: Rio Bravo Rocklin Biomass
- 5: Formica Corp
- 6: Sierra Chemical
- 7: Teichert and Sons Inc.
- 8: CMOR Manufacturing
- 9: Enterprise Rocklin Terminal/Rocklin Liquid Propane Gas Terminal
- 10: Mallard Creek Shavings
- 11: Sunset Septage Receiving Facility

Note: Sites of past or current concern based on database review. Includes sites with regulatory oversight where no release has occurred and sites that have been remediated.



Date: 07-29-2015

Source: Ascent Environmental, 2015 and Pipeline and Hazardous Materials Safety Administration, 2015



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Hazardous Materials Use

Hazardous materials are routinely used, stored, and transported in the SIA by businesses (including industrial and commercial/retail businesses) and public and private institutions (such as landfills, materials recovery facilities [MRFs], and power plants). Hazardous materials, such as cleaning products, paints, solvents, motor oil, and gasoline, which are used in small quantities by households and small businesses **every day, are termed “household hazardous materials.”** The Western Placer Waste Management Authority (WPWMA) operates a program to accept, consolidate, and properly dispose of spent household hazardous materials, referred to as household hazardous waste.

Businesses in the SIA that use and store hazardous materials in quantities subject to Federal and State regulation require community notification and are required to prepare and submit a **Hazardous Materials Management Plan (or “Business Plan”) and/or Risk Management Plans (RMPs)**, as appropriate, to Placer County Environmental Health (PCEH) acting as the Certified Unified Program Agency (CUPA). The PCEH CUPA maintains a database of all businesses in the county using hazardous materials in excess of the threshold quantities (55 gallons for a liquid, 200 cubic feet for a compressed gas, and 500 pounds for a solid).

Historic and Current Use of Hazardous Materials in the SIA

Business and Industrial Areas

Retail, manufacturing, and light industrial facilities near SR 65 are areas of note because the manufacturing operations use relatively high concentrations of hazardous materials. As described above, each business is required to file a detailed plan with the PCEH CUPA regarding materials on-site and safety measures taken to protect the public.

Industrial neighborhoods often represent areas where businesses have used hazardous materials over long periods of time. Industrial development of the SIA began in the 1960s. These areas may include sites of known contamination and small-quantity generators of hazardous wastes that the CUPA regulates. In addition to the concentrated use of hazardous materials and the generation of hazardous wastes, it is assumed that hazardous material transport and storage activity is more intense in industrial areas than in other areas.

The Thunder Valley Casino and Rio Bravo Rocklin biomass – electric plant anchor the northeast portion of the SIA. These sites use hazardous materials, generate hazardous waste, and have regulated air and water discharges. A small industrial/commercial development north of Athens Avenue and west of Thunder Valley Casino contains the CEMEX Lincoln cement plant, and active commercial businesses including an exploration company (PC Exploration Inc.), several wood recycling operations, and A&A concrete supply. These facilities use hazardous materials, generate hazardous waste, and have regulated air discharges.

The commercial and industrial development area along Cincinnati Avenue and Sunset Boulevard in the southeast portion of the SIA includes multiple sites regulated by PCEH including the former Formica Corporation facility, SCPSCPSCP Distributors, Progress Vanguard, Hunt & Sons Cardlock, Enterprise Products Operations, Mallard Creek Manufacturing, the City of Roseville Power Plant Number 2, several auto repair and machining operations. These facilities use hazardous materials, generate hazardous waste, and have regulated air discharges.

Businesses that use a hazardous substance on the Federal and/or State regulated substances list(s) in a process above the threshold quantity must comply with the California Accidental Release Prevention Program (CalARP) and complete an RMP. An RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. The purpose of an RMP is to decrease the risk of an off-site release of a regulated substance that might harm the surrounding environment and community. RMPs typically include the following components: safety information, hazard review, operating procedures, training, maintenance, compliance audits, and incident investigation. The RMP must consider the proximity of the business to sensitive populations such as schools, residential areas, general acute care hospitals, long-term health care facilities, and child daycare facilities, as well as external events such as seismic activity. Two facilities (Rio Bravo Rocklin and Enterprise Products Operations) in the SIA are subject to CalARP and have established RMPs. The RMPs for these facilities were not available for review during preparation of this document.

Agricultural Properties

Agricultural enterprises have historically stored, handled, and applied pesticides and herbicides within the SIA. Agricultural chemicals used prior to the 1970s often included highly persistent compounds such as DDT. Inorganic compounds containing heavy metals such as arsenic, lead, and mercury were commonly used prior to the 1950s. Chemicals commonly used in the past have the potential to leave residual inorganic or organic components in shallow soils that could persist for many decades. If present in elevated concentrations, these residues could pose a potential health risk to future construction workers, and other persons who may come in direct contact with surface soils.

Chemicals used today are generally less-persistent, organic compounds. **Because of today's** stricter regulatory standards and product testing by the U.S. Environmental Protection Agency (EPA) prior to commercial use, routine application of these materials does not generally result in accumulation to levels sufficient to cause concern. Areas that are typically of concern include (1) pesticide-handling areas that lack concrete pads, berms, or cribs to contain spills or leaks during handling and storage, and (2) rinse water from washout facilities for pesticide-application equipment that has not been properly collected and treated before discharge. Equipment-repair and petroleum-storage areas might also be of concern.

Western Regional Sanitary Landfill (WRSL)

The WRSL is a large, active landfill that has the capacity to accept waste through 2058. The landfill is owned and operated by WPWMA. WPWMA also owns and operates a permitted composting facility and an MRF on the property. It accepts solid waste, generates hazardous waste (including methane gas), and has regulated air discharges. The WPWMA also owns property to the west and east which is not currently permitted for solid waste operations.

Title 27 regulations also set forth the performance standards and the minimum substantive requirements for landfill gas monitoring and control as it relates to active solid waste disposal sites and to proper closure, post closure maintenance, and ultimate reuse of solid waste disposal sites to assure that public health and safety and the environment are protected from pollution due to the disposal of solid waste. Post-closure maintenance guidelines include requirements for an emergency response plan and site security. Construction on the site must maintain the integrity of the final cover, drainage and erosion control systems, and gas monitoring and control systems. All post-closure land uses within 1,000 feet of a landfill site must be approved by the local enforcement agency.

Transportation Corridors

Major transportation corridors are used on a daily basis to transport goods throughout the region, state, and the country. Hazardous substances are often associated with both the freight transported within these corridors, as well as within the soil surrounding these corridors. The potential for existing contamination within major transportation corridors of the SIA, and the associated risk of accidental upset while transporting hazardous materials through the SIA, are described below.

Potential for Existing Contamination

Leaded gasoline was used as a vehicle fuel in the United States from the 1920s until the late 1980s. Although lead is no longer used in gasoline formulations, lead emissions from automobiles are a recognized source of contamination in soils along roadways (i.e., aerially-deposited lead). Surface and near-surface soils along heavily used roadways have the potential to contain elevated concentrations of lead. Studies by the California Department of Transportation (Caltrans) suggest that hazardous waste levels of lead, if present, are generally found in soils within 30 feet of the edge of the pavement (DTSC 2009).

Contaminants common in railway corridors include wood preservatives (e.g., creosote and arsenic) and heavy metals in ballast rock. Ballast rock and soils associated with railroad tracks may also contain naturally-occurring asbestos. In addition, soils in and adjacent to these corridors might contain herbicide residues as a result of historical and ongoing weed-abatement practices.

Accidental Release of Hazardous Materials

Hazardous materials, hazardous wastes, and petroleum products are a subset of the tremendous volume of goods routinely shipped along the transportation corridors adjacent to, and within, the SIA. Three agencies maintain searchable databases that track hazardous material releases in reportable quantities. The U.S. EPA maintains the Hazardous Materials Incident Report System that contains data on hazardous material spill incidents reported to the U.S. Department of Transportation (DOT). Cal OES maintains the California Hazardous Materials Incident Report System that contains information on reported hazardous material accidental releases or spills. Finally, the State Water Resources Control **Board's Site** Cleanup Program maintains information on reported hazardous material accidental releases or spills. Smaller hazardous materials spills and accidental releases that are cleaned up immediately are not considered sites of potential environmental concern.

Hazardous materials are transported via freight, including oil and gas. In 2013 Union Pacific Railroad (UPRR) shipped approximately 163,000 car loads of crude oil. UPRR tracks within California transported approximately **1 percent (800 to 1,000 car loads) of UPRR's total crude oil business** (UPRR 2014). Growth in crude-by-rail shipments will depend on continued terminal development, pipeline capacity, crude oil prices, arbitrage opportunities, and market conditions. The potential for additional regulations and prospective changes to tank car specifications could also have an impact on our crude-by-rail volumes.

UPRR has decreased derailments 23 percent in the last 10 years through employment of the latest technology (e.g., lasers and ultrasound) to identify rail imperfections, forecasting potential failures before they happen by tracking acoustic wheel vibrations, performing real-time analysis of rail cars, and conducting rigorous safety training programs on a regular basis (UPRR 2014).

Track characteristics, such as curves and at-grade road crossings, affect the potential for incidents. The railroad tracks that traverse the SIA are generally straight. North of the SIA, the tracks curve as they pass through the city of Lincoln. Based on the number of catastrophic oil by rail incidents in recent years, Placer County has developed an Oil By Rail Incident Response Guide that better prepares first responders should this type of event take place within the SIA or anywhere else in the county.

The Pipeline and Hazardous Materials Safety Administration's 2012 Emergency Response

Guidebook establishes a 0.5-mile initial evacuation zone for train derailments involving flammable liquids where there is a fire. Where there is a large spill only, the initial evacuation zone is limited to 1,000 feet downwind of the spill (U.S. DOT 2012).

Transmission Pipelines

A gas transmission line runs north to south through the eastern third of the SIA. A petroleum pipeline operated by Kinder Morgan is located east of the railroad tracks and follows the alignment of the tracks and Industrial Avenue.

The American Petroleum Institute recommends setbacks of 50 feet from petroleum and hazardous liquids lines for new homes, businesses, and places of public assembly. It also recommends 25 feet for garden sheds, septic tanks, and water wells, as well as 10 feet for mailboxes and yard lights.

The Transportation Research Board encourages the employment of zoning regulations to minimize casualties in the event of a catastrophic rupture. Possible land use techniques include establishing setbacks, regulating or prohibiting certain types of structures (e.g., schools, hospitals, and apartment buildings), and uses near transmission pipelines, and encouraging, through site and community planning, other types of activities and facilities (e.g., mini-storage businesses, linear parks, recreational paths) within or in the vicinity of pipeline rights-of-way.

Lead, Asbestos, and Other Hazardous Materials

Hazardous materials are commonly found in building materials. Prior to 1978 lead compounds were used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. In addition, other common items present in buildings, such as electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats can contain hazardous materials that may pose a health risk if not handled and disposed of properly. These include polychlorinated biphenyls (PCBs), which were used in hundreds of industrial and commercial applications because of their non-flammability, chemical stability, high boiling point, as well as electrical insulating properties. Older equipment that might contain PCBs include electrical equipment and thermal insulation material (e.g., fiberglass, felt, foam, or cork). Older, pole-mounted electrical transformers can also contain PCBs.

Sites with Known Contamination and/or Regulatory Agency Oversight

The SIA contains sites that were historically contaminated but have been remediated, sites that are known, or believed to be, contaminated that are currently being characterized or cleaned-up, as well as sites which are regulated because they use or store hazardous materials and wastes.

Environmental Data Resources provided a Data Map Environmental Atlas of the study area dated March 2015 that aggregates environmental databases into one report. The study area included all land within and around one mile of the SIA boundary. If the listing involved a **release of chemicals, the regulatory status of the release, and the listed sites' potential to affect** future development within the SIA, then the information for each listed site was reviewed to determine its specific location. If a listed site was considered noteworthy, a search of additional records provided by the Regional Water Quality Control Board (RWQCB) and DTSC was conducted. The locations of the sites shown on Figure 6-5 were confirmed or corrected during a windshield survey of the SIA.

The SIA contains the following sites of past or current regulatory concern, which are mapped (shown by name and number) on Figure 6-5.

1. Athens Industrial Area. 2260 to 2700 Athens Avenue, Lincoln, CA

Several parcels on the north side of Athens Avenue and west of the Athens Avenue/North Foothills Boulevard intersection are used for industrial purposes. Regulated sites in this area include Livingston Concrete Services, A&A Cement Supply, Green Solutions, and CEMEX. Air emissions, solid waste operations, and discharge to surface waters generated by these facilities are regulated. The area also includes sites on Placer County's Master List of facilities, which is maintained by Placer County Health and Human Services, and includes both clean-up sites and those sites where above or below ground storage tanks are present without known materials release. There is potential for the operation of these facilities to present a health or safety hazard due to the release of hazardous materials.

2. Thunder Valley Casino WWTP. 1200 Athens Avenue Lincoln, CA

Thunder Valley Casino's wastewater treatment plant (WWTP) for domestic sewage discharges to Orchard Creek in accordance with its NPDES permit issued by the RWQCB. Operation of the plant requires the delivery, storage, and use of hazardous materials, particularly sodium hypochlorite, sodium hydroxide, and sodium bisulfate. All chemicals associated with the WWTP are stored in sealed 55-gallon drums with secondary containment. Less than **30 days' supply of** chemicals is maintained on the site, and empty containers are stored in designated areas prior to recycling. Hazardous materials use associated with the WWTP is included in the hazardous materials business plan for the Thunder Valley Casino (United Auburn Indian Community 2008). There is potential for the operation of this facility to present a health or safety hazard due to the release of hazardous materials.

3. Western Regional Sanitary Landfill. 3195 and 3155 Athens Avenue Lincoln, CA

The WPWMA owns and operates a 231-acre, active, Class II and Class III solid waste landfill, which has capacity to accept solid waste through 2058. The Solid Waste Facility Permit is reviewed every five years and is scheduled to next be reviewed in December 2017 by PCEH as the Local Enforcement Agency (LEA). The WPWMA also owns and operates a compost facility and an MRF. The compost facility and MRF operations are permitted by the LEA under a separate Solid Waste Facility Permit than the landfill. Methane gas generated by decomposing waste is collected from the WRSL for use by a privately-owned power plant. Air emissions, solid waste disposal, and discharge to surface waters are regulated.

The Fourth Quarter 2014 Groundwater Monitoring Report for the facility indicates that concentrations of some volatile organic compounds (VOCs) were detected in monitoring wells. The concentrations are relatively low, but greater than the maximum concentration level for drinking water. Concentrations of inorganic compounds were consistent with background concentrations. The presence of an operating landfill is a potential threat to groundwater. This facility appears to be in compliance with agency requirements for operation.

The County has established restrictions on land use in proximity to landfills through General Plan Policy 4.G.11. Residential land use is not permitted within one mile of an active landfill.

Buffers of 1,000 and 500 feet are required for commercial and recreational land uses, respectively. There is no setback requirement for industrial use (see Table 1-5 in the Placer County General Plan).

4. Rio Bravo Rocklin Biomass. 3100 Thunder Valley Court Rocklin, CA

The 24.4 megawatt biomass facility is a power plant that burns organic waste (95 percent urban wood waste and 5 percent agricultural waste) (IHI 2015). Air emissions, solid waste disposal, and discharge to surface waters generated by these facilities are regulated. There is a California Hazardous Materials Incident Reporting System listing for the site that relates to a 2006 release of 200 to 300 gallons of hydraulic oil. Much of the release was contained within the secondary containment; the remaining oil was cleaned up by soil removal. The facility has four violations associated with waste generation. Because the facility uses industrial chemicals, generates waste material, and has associated air emissions, there is potential for this facility to pose a health and safety hazard.

5. Formica Corp. 3500 Cincinnati Avenue, CA

The Formica Corp facility produced high-pressure laminate products utilizing phenolic or melamine resins. Plant operations ceased on May 15, 2007. Environmental decontamination activities inside the former manufacturing facility have been completed (DTSC 2015). Soil was tested for contaminants of concern, including formaldehyde, petroleum, phenol, and volatile organics. Low levels of aldehydes were detected in soil samples in the area of a thermal discharge basin used as a temporary storage location for non-contact cooling water. Central Valley RWQCB issued a No Further Action Letter in 2009 (CVRWQCB 2009). DTSC issued a No Further Action letter on September 28, 2011 (DTSC 2015).

There is no evidence of a current health or safety hazard associated with historical use of the Formica Corp property. While this facility has had historical releases, the regulatory agencies require no further action. It is currently being redeveloped as the Placer Gold Industrial Park and is not considered a constraint to the SIA.

6. Former Sierra Chemical. 3640 Cincinnati Avenue Rocklin, CA

Sierra Chemical was an industrial gas manufacturer. The facility operated pursuant to discharge requirements for stormwater and as a resource management plan for production of chlorine gas.

7. Former Teichert and Sons Inc. 1145 Tara Court Rocklin, CA

The Teichert and Sons facility has disposed of tetrachloroethene, trichloroethylene, and benzene wastes. No violations were noted, and the facility is closed. The site is currently developed as a construction office and yard. There is no evidence of a current health or safety hazard associated with historical use of this property.

8. CMOR Manufacturing. 3625 Cincinnati Avenue Rocklin, CA

CMOR Manufacturing used hazardous materials and utilized three underground storage tanks in operations. The facility is closed. The storage tanks have been removed, and there is no documentation of hazardous materials release. This site is not currently considered an environmental concern in the SIA.

9. Enterprise Rocklin Terminal/Rocklin Liquid Propane Gas Terminal. 1545 Nichols Drive Rocklin, CA

This propane terminal generates small quantities of hazardous wastes. No records of releases or permit violations were found. The facility stores 500 million pounds of propane. The considerable volume of stored propane and associated risk of upset are considerations for planning future development in the vicinity of this facility.

10. Mallard Creek Shavings. 4095 Duluth Avenue Rocklin, CA

The Mallard Creek Shavings facility manufactures wood pellet for home heating and wood shavings for animal bedding and landscape uses. The site is an active green waste composting facility that operates under the Notification Tier of CalRecycle's regulatory structure (initial filing and records are provided to the PCEH LEA, but no permit is required). Operations are pursuant to NPDES permit. There is no evidence of a current health or safety hazard associated with this property.

11. Sunset Septage Receiving Facility. South End of Cincinnati Ave Rocklin, CA

The Sunset Septage Receiving Facility consists of three former unlined septage ponds that operated between 1981 and 1997, and two former unlined industrial wastewater ponds that operated from the mid-1960s to 1986. The facility received primarily domestic sewage. In accordance with Cease and Desist Order No. 94-326, the County ceased discharge to the septage ponds in July 1997 and removed the remaining sludge from the bottom of the surface impoundments in October 1997. Following a soil investigation, Placer County submitted a Corrective Action and Closure Plan, which concluded that the former receiving facility had contaminated groundwater and subsurface soils.

Waste Discharge Requirement Order No. 5-01-016 requires monitoring of pH, specific conductance, and concentrations of chloride, nitrate, sulfate, and total dissolved solids. Groundwater in the area flows west at an approximate gradient of 0.007 feet per foot. Trend analyses of constituent concentrations indicate that, despite exceedance of concentration limits and Water Quality Objectives during the Second Semi-Annual 2014 monitoring period, groundwater constituent concentrations have generally decreased or remained static in down-gradient monitoring wells since 2001, and only sulfate levels show a long-term increasing trend (Geo-Logic Associates 2015). Groundwater in the area of the Sunset Septage Receiving Facility has been contaminated by past operation of unlined wastewater ponds. This may be a consideration for future use of the site and immediate vicinity.

Regulatory Setting

Federal

Code of Federal Regulations (CFR)

Specific requirements for implementation of these statutes are codified in Title 40 of the CFR. The U.S. EPA has authorized the DTSC to enforce hazardous waste laws and regulations in California. Under the Resource Conservation and Recovery Act (RCRA), DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow State and federal requirements. Title 29, Part 1910 of the CFR describes the Hazard Communication Standard, which requires that workers be informed of the hazards associated with the materials they handle. The U.S. DOT has developed regulations in Titles 10 and 49 of the CFR pertaining to the transport of hazardous substances and hazardous wastes by all modes of transportation. The Hazardous Materials Transportation Act provides the U.S. DOT with a broad mandate to regulate the transport of hazardous materials. The U.S. DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacturing or testing of hazardous materials packaging or containers.

Resource Conservation and Recovery Act (RCRA)

The RCRA was designed to protect human health and the environment, reduce or eliminate the generation of hazardous waste, and conserve energy and natural resources. U.S. EPA has authorized DTSC to enforce hazardous waste laws and regulations in California. Under RCRA, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow State and Federal requirements.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act regulates former and newly discovered uncontrolled waste disposal and spill sites. This act established the National Priorities List of **contaminated sites and the “Superfund” cleanup program.**

Pipeline and Hazardous Materials Safety Administration (PHMSA)

The PHMSA is the Federal regulator for the movement of hazardous materials by rail, with regulations covering product classification, operating rules, and tank car standards. The PHMSA's Office of Hazardous Materials Safety ensures safety in the design, construction, operation and maintenance, and spill response planning of America's 2.6 million miles of natural gas and hazardous liquid transportation pipelines.

Federal Railroad Administration Office of Railroad Safety

The Federal Railroad Administration's Office of Railroad Safety promotes and regulates safety throughout the nation's railroad industry. The regional offices enforce compliance with regulations related to hazardous materials, motive power equipment, operating practices, signal and train control, and tracks. California is in Region 7, which is headquartered in Sacramento (FRA 2015).

State

The primary State of California agencies with jurisdiction over hazardous materials management are the DTSC and the RWQCB. Within the California Environmental Protection Agency (Cal EPA), DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Cal EPA is also responsible for implementing the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. Other State agencies involved in hazardous materials management are Cal ARP OES (Clap implementation), the Department of Fish and Wildlife, the California Air Resources Board (ARB), Caltrans, State Office of Environmental Health Hazard Assessment (Proposition 65 implementation), and Department of Resources Recycling and Recovery (Cal Recycle).

California Code of Regulations (CCR)

State regulations applicable to hazardous materials are contained in Title 19 and Title 22 of the CCR pertain to hazardous materials and their management. Title 8 contains Construction Safety Orders pertaining to hazardous materials, including, but not limited to, lead. Along with DTSC, the RWQCB is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations are contained in Title 27 of the CCR. CalARP (CCR Title 19, Division 2, Chapter 4.5) covers certain businesses that store or handle more than a specified volume of regulated substances at their facilities

Hazardous Waste Control Law

California law provides the general framework for regulation of hazardous wastes by the Hazardous Waste Control Law (HWCL) passed in 1972. The HWCL provides for state regulation **of existing hazardous waste facilities, which include “any structure, other appurtenances, and improvements on the land, used for treatment, transfer, storage, resource recovery, disposal, or recycling of hazardous wastes,” and requires permits for, and inspections of, facilities involved** in generation and/or treatment, storage, and disposal of hazardous wastes. DTSC is the State's lead agency in implementing the HWCL.

Hazardous Waste and Substances Sites List

The Hazardous Waste and Substances Sites List, also known as the Cortese List, is a planning document used by the State of California and its various local agencies to comply with the

California Environmental Quality Act (CEQA) requirements to provide information about the location of hazardous materials release sites.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

In January 1996, Cal EPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The six program elements of the Unified Program are as follows: hazardous waste generators and hazardous waste on-site treatment, underground storage tanks, above-ground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency, the CUPA. The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction. PCEH is the CUPA for all areas of Placer County except for the city of Roseville, which is administered by the Roseville Fire Department.

Solid Waste Facility Permitting

Solid waste handling, processing, and disposal activities (including operation of landfills, transfer processing stations, MRFs, compost facilities, and waste to energy facilities) are regulated by CalRecycle. There are five tiers of regulation for solid waste handling activities: 1) excluded solid waste handling, 2) enforcement agency notification, 3) registration permit, 4) standardized permit, and 5) full permit. The tier in which an activity is slotted depends on the type of activity, as well as the type and amount of solid waste being handled.

Hazardous Materials Transportation

Transporters of hazardous materials and waste are responsible for complying with all applicable packaging, labeling, and shipping regulations. Cal OES also provides emergency response services involving hazardous materials incidents.

California Education Code

The California Education Code (Section 17210 et seq.) outlines the requirements of siting school facilities near or on known or suspected hazardous materials sites, or near facilities that emit hazardous air emissions, handle hazardous or acutely hazardous materials, substances, or waste. The code requires that, prior to commencing the acquisition of property for a new school site, an environmental site investigation be completed to determine any health and safety risks associated with a site. All proposed school sites that will receive state funding for acquisition and/or construction must go through a comprehensive investigation and cleanup process under DTSC oversight. DTSC is required to be involved in the environmental review process to ensure that selected properties are free of contamination, or if the property is contaminated, that it is cleaned up to a level that is protective of students and faculty who will occupy the new school.

All proposed school sites must be suitable for residential land use, which is DTSC's most protective standard for children.

Local Community Rail Security Act

The Local Community Rail Security Act of 2006 (Public Utilities Code Sections 7665-7667) requires all rail operators to provide security risk assessments to the CPUC, the Director of Homeland Security, and the Catastrophic Event Memorandum Account that describe the following:

- Location and function of each rail facility
- Types of cargo stored at or typically moved through the facility
- Hazardous cargo stored at or moved through the facility
- Frequency of hazardous movements or storage
- A description of sabotage-terrorism countermeasures
- Employee training programs
- Emergency response procedures
- Emergency response communication protocols

Local

The PCEH and City of Roseville Fire Department are responsible for promoting a safe and healthy environment in the county and for enforcing hazardous waste laws and regulations at a local level. As the local CUPA, the PCEH and City of Roseville Fire Department monitor the proper use, storage and clean-up of hazardous materials, monitoring wells, removal of leaky underground storage tanks, and permits for the collection, transport, use or disposal of refuse. Hazardous waste laws and regulations are enforced locally by the PCEH. The **PCEH's Hazardous Materials Business Plan**, which is administered throughout Placer County and its incorporated cities, is an element of the County's CUPA program. Businesses are required to complete a Hazardous Materials Business Plan for safe storage and use of chemicals above reportable quantities (55 gallons for liquids, 500 pounds for solids and 200 cubic feet for compressed gases).

The PCEH is also the LEA-designated to implement delegated CalRecycle programs. The LEAs have the primary responsibility for ensuring the correct operation and closure of solid waste facilities in the state. They also have responsibilities for guaranteeing the proper storage and transportation of solid wastes.

Placer County General Plan

The Placer County General Plan includes the following goals and policies related to human health and safety:

- **Goal 8.G:** To minimize the risk of loss of life, injury, serious illness, damage to property, and economic and social dislocations resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous materials wastes.
 - **Policy 8.G.1.** The County shall ensure that the use and disposal of hazardous materials in the County complies with local, state, and federal safety standards.
 - **Policy 8.G.2.** The County shall discourage the development of residences or schools near known hazardous waste disposal or handling facilities.
 - **Policy 8.G.3.** The County shall review all proposed development projects that manufacture, use, or transport hazardous materials for compliance with the County's Hazardous Waste Management Plan (CHWMP).
 - **Policy 8.G.5.** The County shall strictly regulate the storage of hazardous materials and wastes.
 - **Policy 8.G.6.** The County shall require secondary containment and periodic examination for all storage of toxic materials.
 - **Policy 8.G.7.** The County shall ensure that industrial facilities are constructed and operated in accordance with current safety and environmental protection standards.
 - **Policy 8.G.8.** The County shall require that new industries that store and process hazardous materials provide a buffer zone between the installation and the property boundaries sufficient to protect public safety. The adequacy of the buffer zone shall be determined by the County.
 - **Policy 8.G.9.** The County shall require that applications for discretionary development projects that will generate hazardous wastes or utilize hazardous materials include detailed information on hazardous waste reduction, recycling, and storage.
 - **Policy 8.G.10.** The County shall require that any business that handles a hazardous material prepare a plan for emergency response to a release or threatened release of a hazardous material.
 - **Policy 8.G.11.** The County shall encourage the State Department of Health Services and the California Highway Patrol to review permits for radioactive materials on a regular basis and to promulgate and enforce public safety standards for the use of these materials, including the placarding of transport vehicles.

- **Policy 8.G.12.** The County shall identify sites that are inappropriate for hazardous material storage, maintenance, use, and disposal facilities due to potential impacts on adjacent land uses and the surrounding natural environment.
- **Policy 8.G.13.** The County shall work with local fire protection and other agencies to ensure an adequate Countywide response capability to hazardous materials emergencies.

The following policies are specifically related to land use in proximity to landfills:

- **Goal 4.G:** To ensure the safe and efficient disposal or recycling of solid waste generated in Placer County.
 - **Policy 4.G.6.** The County shall ensure that landfills and transfer stations are buffered from incompatible development.
 - **Policy 4.G.11.** When considering land use changes in the vicinity of a landfill operation, the County shall consider the landfill as the dominant land use in the area. In order to protect these facilities from incompatible encroachment, new residential land uses shall be separated from the property lines of active and future landfill sites by a buffer of one mile. Such buffers do not apply to closed landfills or solid waste transfer stations. Other uses will be required to provide buffers as described in Table 1-5. The intent of this policy is to prohibit the creation of new parcels for residential use within one mile of the landfill, not to prohibit construction of a residence on an existing legal building site within this area.

SECTION 6.6 AIR QUALITY

Existing Conditions

Regional Climate

The SIA is located within the Sacramento Valley Air Basin (SVAB). The SVAB is a valley bounded by the North Coast Ranges on the west and the Northern Sierra Nevada on the east. It also includes portions of Solano County, and all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba counties.

The mountains surrounding the Sacramento Valley create a barrier to airflow, which can trap air pollutants in the valley. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air and pollutants near the ground.

The warmer months in the SVAB (May through October) are characterized by stagnant morning air or light winds with the delta breeze arriving in the afternoon out of the southwest. Usually, the evening breeze transports airborne pollutants to the north and out of the Sacramento Valley. During about half of the day from July to September, however, a phenomenon called the **“Schultz Eddy” prevents this from occurring. Instead of allowing the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern to circle back south.** This phenomenon exacerbates pollution levels in the area and increases the likelihood of violating federal or state standards. The Schultz Eddy normally dissipates around noon when the delta breeze begins.

Local Climate

Local climatology of the SIA is best represented by average ambient temperatures in neighboring cities of Lincoln, Roseville, and Rocklin, which all experience similar temperatures. Maximum temperatures occur during July and reach, on average, 97 degrees Fahrenheit. Minimum temperatures can be as low as 33 degrees Fahrenheit in January. There are, on average, 255 sunny days and 54 days with measurable precipitation. The area also gets, on average, 22.3 inches of rain a year. Average annual wind speed is approximately 200 miles per hour.

Stationary and Mobile Sources

In the SVAB, air pollutant emissions are generated through both stationary and mobile sources. Point sources are a subcategory of stationary sources, and refer to an emission source from a fixed location. Point sources tend to be associated with manufacturing and industrial uses and usually require a permit to operate within a local air district. Common examples of point sources are factories, power plants, dry cleaners, and refineries.

Another subcategory of stationary sources is area sources, which refer to many small sources of air pollution within a wide geographical area. Individually, these emissions are below thresholds of concern, but collectively can be significant and contribute to regional air pollution. Area sources are widely distributed and do not require permits to operate from any air district. Examples of area sources include residential and commercial water heaters, residential wood burners, painting operations, portable generators, lawn mowers, and consumer products such as barbecue lighter fluid and hairspray.

Mobile sources refer to air pollutant emissions generated from tailpipe and evaporative emissions and from motor vehicles. They can be categorized as either on-road or off-road. On-road sources include vehicles that are legally operated on highways and roadways such as cars, sport utility vehicles, and buses. Off-road sources include planes, trains, construction vehicles, boats, and gas-powered lawn tools. Based on 2012 estimated annual average emissions published by Air Resources Board (ARB), mobile sources account for the majority of the air pollutant emissions within the SVAB.

Ambient Air Quality Standards

The Clean Air Act (CAA), which was enacted in 1970 and amended by Congress in 1990, required the U.S. EPA to establish primary and secondary National Ambient Air Quality Standards (NAAQS) for the following criteria air pollutants (CAPs): ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), Particulate Matter less than 10 microns in size (PM₁₀), fine particulate matter (PM_{2.5}), and lead. Primary standards protect the health, and the secondary standards protect the public welfare. The California Clean Air Act (CCAA), which was adopted in 1988, requires the ARB to establish California Ambient Air Quality Standards (CAAQS). In addition to establishing CAAQS for ozone, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and lead, the ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter. In most cases, the CAAQS are more stringent than the NAAQS.

The NAAQS and CAAQS have been set at levels at which concentrations could be generally harmful to human health and welfare. CAPs are most relevant to air quality planning and regulation because they are the most meaningful indicators of air pollution effects on human health. These pollutants are described in further detail below.

- **Ozone** is a photochemical oxidant (a substance whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of