Safety Element

(City Council Adoption – October 25, 2005)
(2014 March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan Amendment - City Council Adoption– August 30, 2016)

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Introduction

The Safety Element outlines the City's goals for reducing the potential risks for death, injuries, property damage and economic and social dislocation resulting from hazards or catastrophic events. These may be fires, floods, earthquakes, landslides, or acts of terrorism. The Safety Element also addresses issues related to man-made hazards such as hazardous waste users and handlers and the level of emergency services accessible by residents of the City. The Safety Element includes an overview of existing risk potential and plans for mitigating or reducing damage resulting from any single damaging event or series of events.

The City of Perris is divided into ten (10) Planning Areas (Exhibit S-1) for purposes of analysis throughout the General Plan. Boundaries of some planning areas were drawn to reflect natural or manmade physical divisions: the I-215 Freeway and the San Jacinto River are examples of manmade and natural boundaries, respectively. Other planning areas encompass communities defined by similarities in land uses or development patterns: properties in Planning Area 6 are in Downtown Perris and include the bulk of the oldest structures and infrastructure in the City. Yet other planning areas are comprised of properties whose future development will be shaped by common constraints or opportunities: for example, large, undeveloped parcels encumbered by portions of the Multi-Species Habitat Conservation Plan corridor are joined as Planning Area 10.

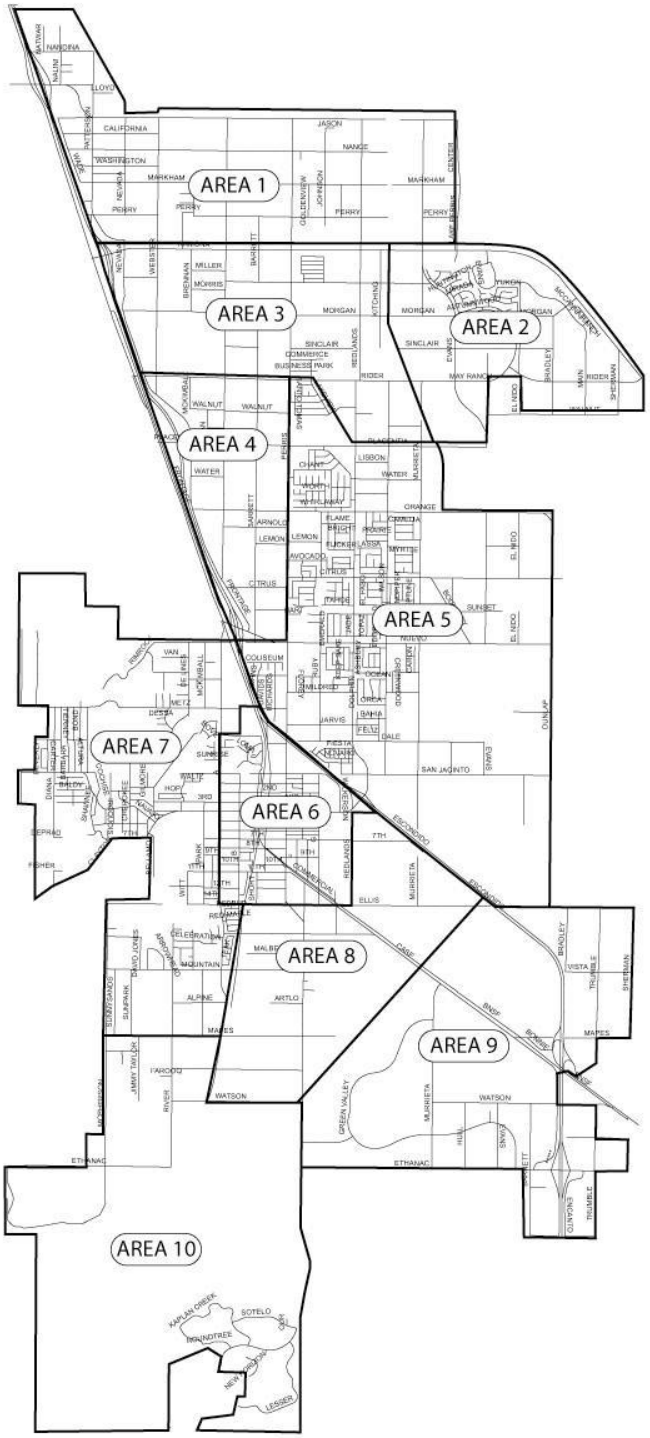
The Safety Element is divided into three sections:

- **Existing Conditions** provides a year 2003 inventory of the locations and types of hazards and potential hazards within the City and Sphere of Influence;

- **Issues** are the foundation of the City's action plan for creating a safer environment, the Strategy for Action, and include specific concerns, opportunities, and constraints relative to natural and man-made hazards to development;

- The **Strategy for Action** section sets forth the steps to be taken by the City of Perris to create a safer environment and reduce the potential damage that may occur during a man-made or natural disaster. Strategic planning, emergency operations, future decisions on capital improvement plans, annual municipal budgets, and municipal department work programs are the primary means available to the City in achieving the safety goals set forth in the Safety Element.

Exhibit S-1: Planning Areas



Not to Scale

Existing Conditions

Seismic Hazards

Seismic hazards can be grouped into several categories. The categories of hazards that could be expected to occur in the City of Perris are:

- Ground surface rupture and Ground Shaking
- Liquefaction
- Settlement
- Slope-related instability

Ground Surface Rupture and Ground Shaking

A break or fracture between blocks of rock is called a fault. Sudden, differential movement on a fault causes an earthquake. Earthquakes are classified according to their moment (measure of the amount of energy released), their magnitude (measure of maximum ground motion) and their intensity (a qualitative assessment of the effects at a given location). An earthquake has a single moment and usually one magnitude, but can produce several intensities, since effects generally decrease with distance. An earthquake with a moment magnitude 6.0 earthquake releases 32 times the energy of a moment magnitude 5.0, and a moment magnitude 7.0 earthquake releases about 1,000 (32 x 32) more energy than a magnitude 5.0 earthquake.

Earthquake intensities are most commonly measured in accordance with the Modified Mercalli Intensity scale, which defines 12 levels of damage. The strength of seismic ground shaking at a certain location depends primarily on the magnitude of the earthquake, the distance from the source, the paths the seismic waves travel through the earth, the response characteristics of the rock or soils underlying the site, and topography, particularly if a site lies in a valley or atop a hill. The level of damage depends on the size, shape, age and engineering characteristics of the impacted buildings and structures.

Ground surface rupture can occur during an earthquake, but total damage caused by earthquakes is typically greater due to ground shaking than surface rupture. The Alquist-Priolo Earthquake Fault Zoning Act of 1972 requires that areas susceptible to potential ground surface rupture be mapped. In order to build within a designated fault zone, the subject property must be analyzed by a licensed geologist to determine a safe building setback distance from the potential surface rupture. Western Riverside County has been mapped for Alquist-Priolo zones, and no zones exist within the City of Perris. In addition, the County of Riverside has applied additional special studies zone criteria for additional fault systems, and the City of Perris does not contain any County designated fault zones.

Design earthquakes (the earthquake that a community is designed to withstand) anticipate the effects of ground rupture along a specified fault. The largest earthquake considered possible for a particular fault is defined as the *maximum credible earthquake* (MCE), and is often considered as the "worst-case scenario" in planning and engineering decisions. For example, MCEs are applied in the design of critical facilities such as dams, fire stations and emergency operation centers. A *maximum probable earthquake* (MPE) is the largest event considered most likely to occur in a specific period of time. Both MCE and MPE are applied by geologists, seismologist, engineers and urban planners when evaluating seismic hazards for

structural design or land planning purposes. For example, buildings must be designed to withstand a given duration of strong ground shaking or a particular length of seismic wave. When these factors are estimated in accordance with the MCE, a margin of safety is built into the minimum structural requirements of the California Building Code.

Probabilistic seismic hazard assessment is based on the potential ground motions from earthquakes on several faults and the relative likelihood of each. This type of assessment is employed by the United States Geological Survey (USGS) in producing nationwide seismic hazard maps that are modified and adopted into the California Building Code (CBC). Based on studies by scientists in the National Seismic Hazard Mapping Program, it has been determined that ground motion values for Riverside County are among the highest in southern California because of its proximity to major fault systems with high earthquake recurrence rates. The level of potential ground motion in Perris is 30%-40% as strong as the pull of gravity. While this level is considered Very High on the scale of probable motion, it is lower than most of the other cities in the County because many of the areas within the County fall in the Extremely High category. Ground motion of this degree can result in substantial damage (see VIII and IX in Table S-1).

Table S-1: Abridged Modified Mercalli Intensity Scale and Relation to other Parameters and Richter Scale Equivalent

Intensity Value and Description	Average peak velocity (cm/sec)	Average peak acceleration (gravity= 9.8m/s^2)	Richter-scale Magnitude Equivalent
I. Not felt except by a very few under especially favorable circumstances	-	-	3
II. Felt only by a few persons at rest, especially on upper floors of high-rise buildings. Delicately suspended objects may swing.	-	-	
III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing automobiles may rock slightly. Vibration like passing of truck. Duration estimated.	-	-	
IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensation like a heavy truck striking a building. Standing automobiles rocked noticeably.	1-2	1.5%g-2%g	4
V. Felt by nearly everyone, many awakened. Some dishes, windows, and so on broken; cracked plaster in a few places; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.	2-5	3%g-4%g	
VI. Felt by all, many frightened and run outdoors. Some heavy furniture moved, a few instances of fallen plaster and damaged chimneys. Damage slight.	5-8	6%g-7%g	5

Intensity Value and Description		Average peak velocity (cm/sec)	Average peak acceleration (gravity= 9.8m/s^2)	Richter-scale Magnitude Equivalent
VII.	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving cars.	8-12	10%g-15%g	
VIII.	Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving cars disturbed.	20-30	25%g-30g	6
IX.	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	45-55	50%g-55%g	

Intensity Value and Description		Average peak velocity (cm/sec)	Average peak acceleration (gravity= 9.8m/s^2)	Richter-scale Magnitude Equivalent
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed, slopped over banks.	More than 60	More than 60%g	7
XI.	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	-	-	
XII.	Damage total. Waves seen on ground surface. Lines of sight and level distorted. Objects thrown into air.	-	-	8

Perris Valley lies between the San Jacinto Fault and the Elsinore Fault, within the Perris Block, a 20 by 50-mile mass of crystalline rocks generated in the Cretaceous time period. The Perris Block is bounded by the San Jacinto Fault to the east, the Elsinore Fault to the west and the Cucamonga Fault to the north. This block has historically experienced vertical land movements of several thousand feet due to shifts in the Elsinore and San Jacinto faults.

Active faults of most concern to the planning area are the San Andreas, San Jacinto, Cucamonga, and Elsinore Faults (Exhibit S-2). None of these faults are located in the City of Perris or its Sphere of Influence; therefore, ground surface rupture is not identified as a seismic hazard. The chief threat associated with these faults is the intensity of ground shaking that could be generated within the planning area. Estimated probabilities of major earthquakes along these four faults and the potential intensities of those events are discussed below.

The San Andreas Fault is considered the "Master Fault" in southern California because of its relatively frequent and large earthquakes. It bisects Riverside County. The Coachella Valley segment extends from San Gorgonio Pass south to the Salton Sea, and is closest to the Perris planning area. The last recorded surface-rupturing earthquake along this segment occurred in approximately 1680. Studies of this segment show that on average, an earthquake occurs every 220 years along this fault. This segment has an estimated 22% chance of rupturing before the year 2024, with a potential magnitude of 7.1.

The San Jacinto Fault consists of a series of closely spaced faults that form the western margin of the San Jacinto Mountains. This fault zone extends from the County of San Bernardino south to the City of Brawley and extends past the U.S. border with Mexico. It has historically been very active, recording at least 10 damaging earthquakes between 1890-1986. Historically, the San Jacinto fault segments have been active with a recurrence interval of 150 years to 300 years. The maximum credible magnitude for the San Jacinto Fault is 6.9. Over the next 20 years, it is estimated that the San Jacinto fault has a 43 percent probability of rupturing.

The Elsinore Fault Zone parallels the San Jacinto Fault and is part of the same plate system as the San Andreas and the San Jacinto Fault. Segments of this fault zone found in Riverside County are the Whittier, Glen Ivy, Temecula, and Chino Segments. The Whittier-Elsinore segments have shown apparent vertical land displacements. Maximum credible earthquakes of 6.7 to 6.8 may potentially occur along any of these segments. A 5 percent to 16 percent probability exists for activity along this fault and its segments to occur over the next 20 years. The Elsinore Fault does not intersect the City of Perris or its Sphere of Influence.

The Cucamonga Fault is the eastward extension of the Sierra Madre fault, one of the most hazardous of southern California's faults. This fault zone reaches from the southern San Gabriel Mountains to the southern margin of the San Bernardino Mountains. A maximum potential magnitude of an earthquake on the Cucamonga Fault is 7.0.

The Master Environmental Assessment, completed in 1989 for the City of Perris General Plan program identifies a suspected fault that is thought to exist one-half mile east of Interstate 215. Evidence of this suspected fault is based on groundwater anomalies noted in a United States Geologic Survey (USGS) report compiled in 1973. Based on that data, the fault was identified by Philip Moyle of the USGS in 1974 as potentially active, but no

evidence of activity or historic activity along this suspected fault has been recorded, and there have been no site-specific geologic investigations to determine whether a fault exists in that area. The Draft Updated County of Riverside General Plan Safety Element (completed in 2000), which includes an extensive evaluation of seismic hazards based on current data sources, does not identify this "suspected fault."

Liquefaction

Liquefaction occurs when shallow, fine to medium-grained sediments saturated with water are subjected to strong seismic ground shaking. Liquefaction usually occurs when the underlying water table is 50 feet or less below the surface. Under this condition, the soil loses its ability to support uneven loads such as structures and natural or artificial slopes and acts as a liquid. Excess water pressure is vented upward through fissures and cracks, and a water slurry bubbles onto the ground surface. Liquefaction related effects include: a decrease in the ability of soil to support buildings, bridges or other structures; a "wave-type" of ground movement; lateral spreading, or ground movement similar to lava flowing from a volcano; and increased pressure on retaining walls resulting in the walls tilting or sliding.

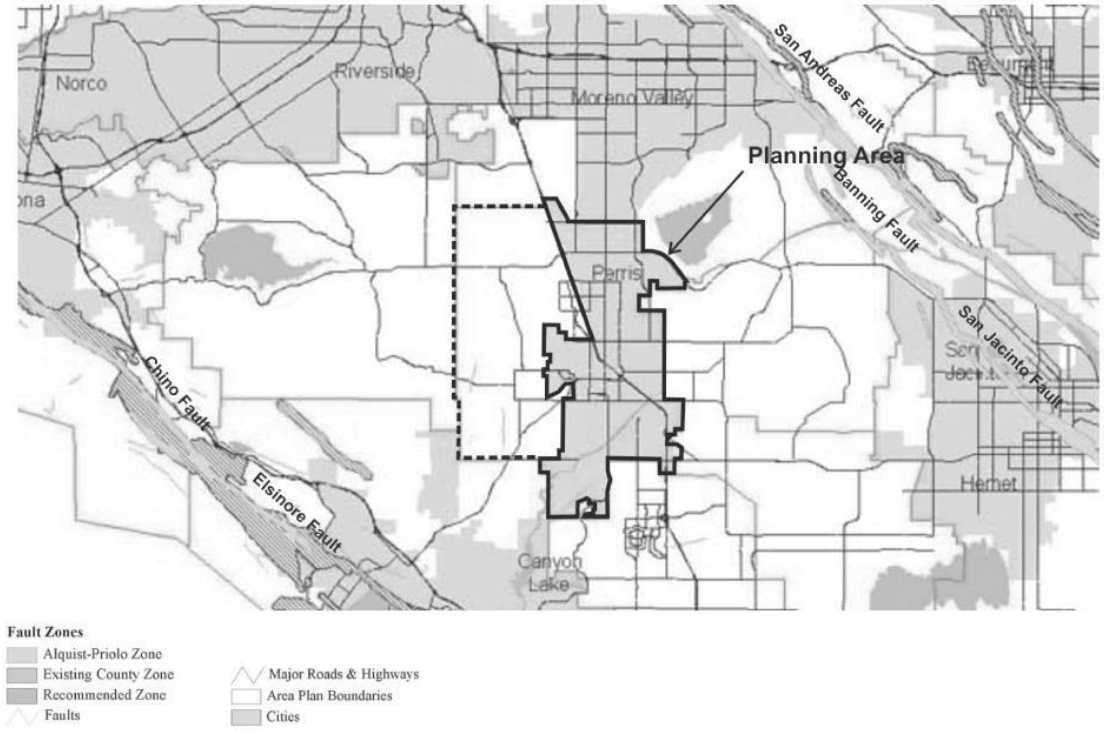
Site specific geotechnical studies are the only practical and reliable way of determining the specific liquefaction potential of a site; however, a determination of general risk potential can be provided based on soil type and depth of groundwater. Areas containing alluvium soil deposits are often susceptible to seismically induced liquefaction. As noted earlier, the Perris Valley is comprised of extensive alluvial deposits resulting from erosion of sediments from the San Jacinto Mountain Range. Although depths to ground water generally exceed 100 feet, the central and northeastern parts of the planning area are comprised of materials considered susceptible to moderate to very high liquefaction potential, as shown in Exhibit S-3, Liquefaction Hazards.

Settlement

Settlement is defined as areas that are prone to different rates of surface settling and densification (differential compaction), with or without seismic shaking, and are underlain by sediments that differ laterally in composition or degree of existing compaction. Differential settlement can damage structures, pipelines and other subsurface entities. Development in areas subjected to seismically induced settlement should include specific subsurface geotechnical investigations that address the potential for seismically induced settlement on a site-specific basis. This hazard can be mitigated with proper site preparation that involves the densification of the subsurface soils, and with proper foundation design that can accommodate a limited degree of differential settlement due to seismic shaking. Areas prone to differential compaction are difficult to identify; however, it is known that alluvial soils are more susceptible to settlement than other soil types.

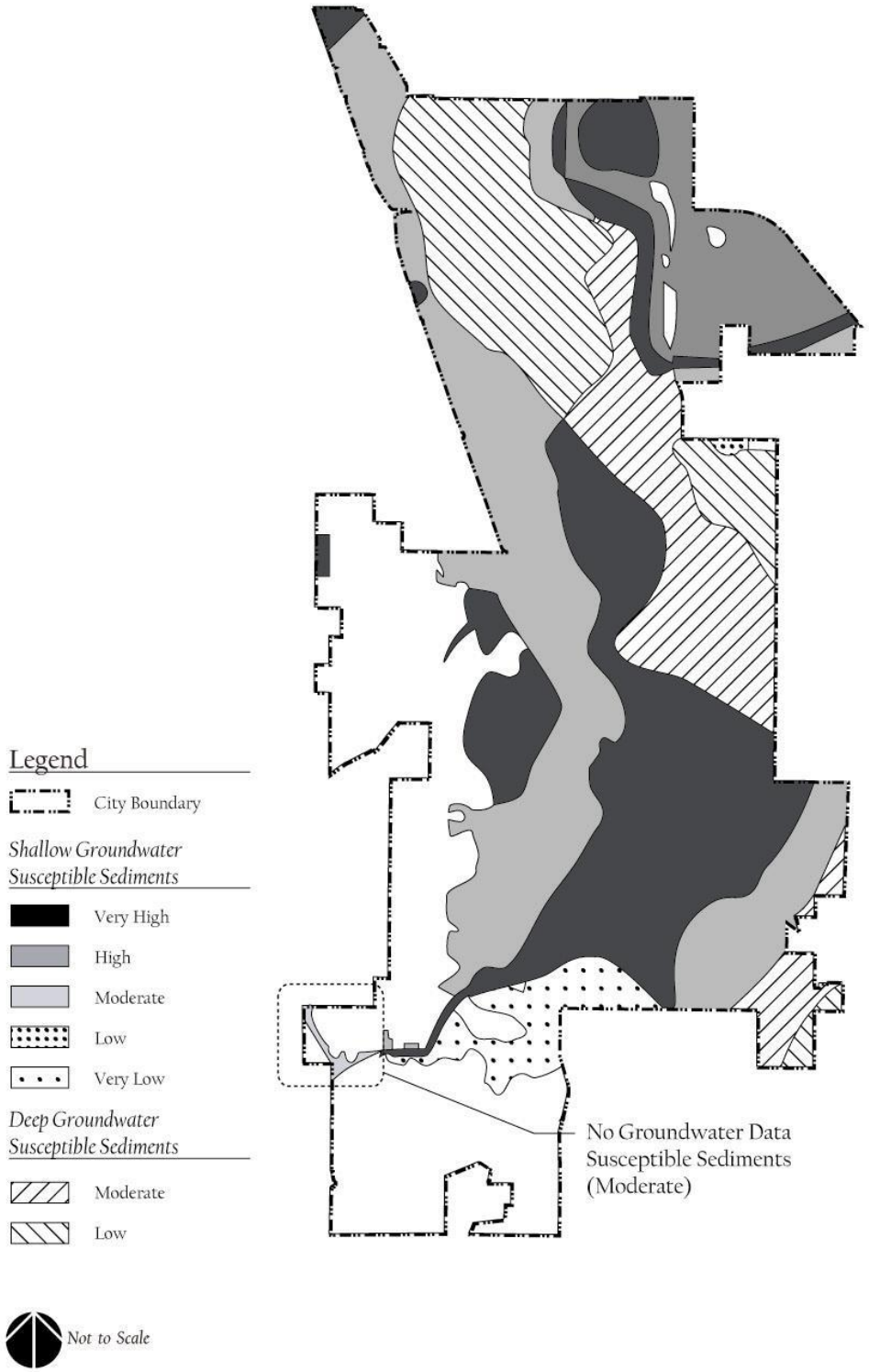
Settlement and fissuring have been well documented in Riverside County. Most of the early documented cases affected only agricultural land or open space. As urban areas have expanded, so too have the impacts of settlement on structures for human occupancy. Instances of settlement have been recorded in the San Jacinto Valley, but not within the Perris Valley.

Exhibit S-2: Earthquake Fault Zones



Not to Scale

Exhibit S-3: Liquefaction Hazards



Slope Related Instability

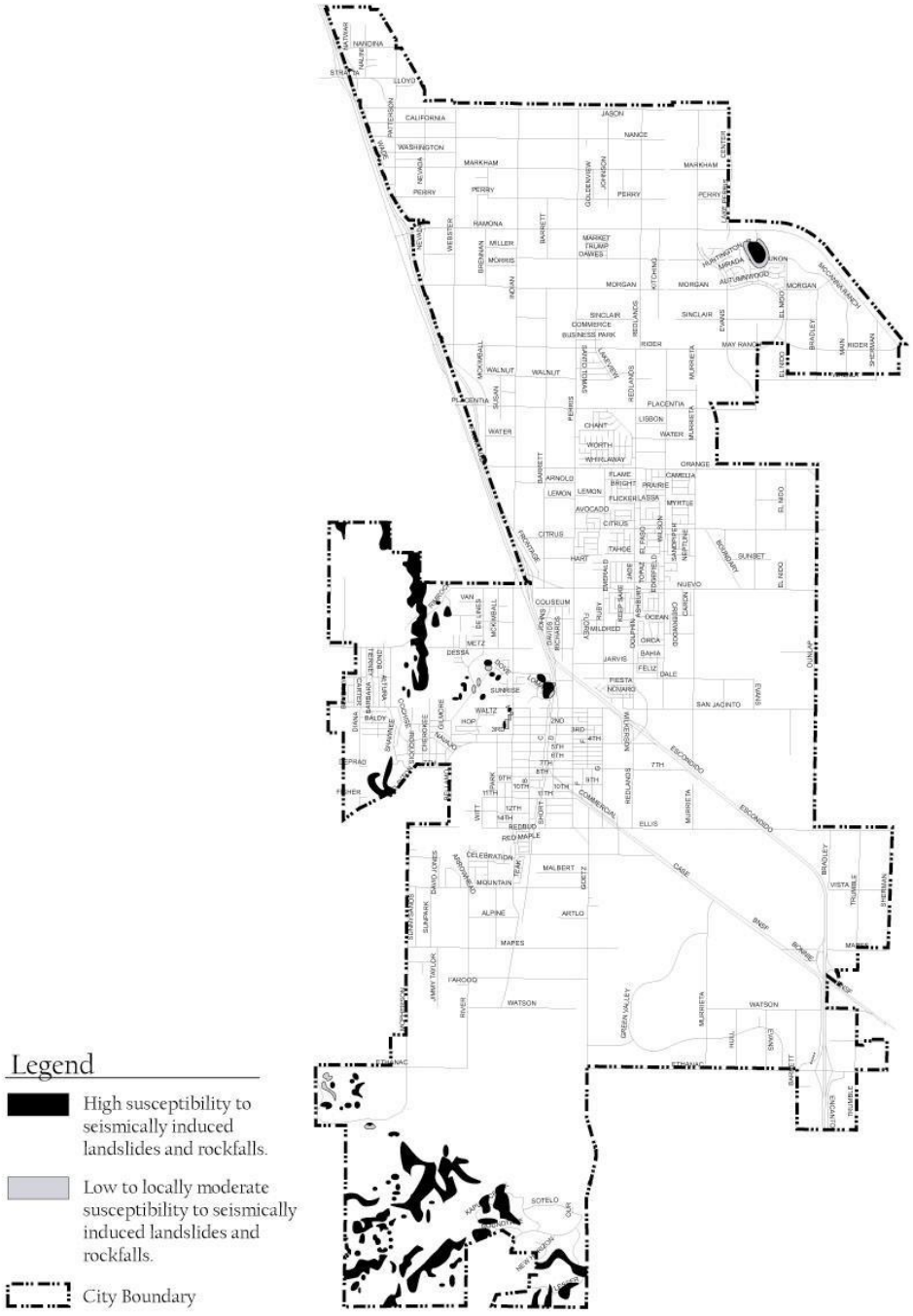
The most significant factors that contribute to slope failure include slope height and steepness, shear strength and orientation of weak layers in the underlying geologic units, and pore water pressures. Man-made slope modifications, as well as the down-cutting forces associated with stream erosion, can also cause a slope to become unstable and fail. Steep slopes, i.e. 30% or higher gradient, occur in the western and southern portions of Perris. As shown in Exhibit S-4, these areas could be susceptible to seismically induced landslides and rock falls.

A combination of geologic conditions leads to landslide vulnerability. These include: high seismic potential; rapid uplift and erosion resulting in steep slopes and deeply incised canyons; highly fractured and folded rock; and rock with inherently weak components such as silt or clay layers. Landslides are often triggered by seismic activity; however, slope failure does not need to be triggered by an earthquake. Strong ground motions can worsen existing unstable slope conditions, particularly if coupled with saturated ground conditions.

Debris flows can cause extensive damage to structures in their path. They are comprised of a mixture of rock and/or mantlerock with water or air. Whether debris will flow downhill depends on numerous factors, including soil depth and composition, the kind of vegetation, subtle variations in slope shape, existence of road cuts or drainage pipes, incongruities in underlying bedrock, and even the presence of animal burrows. Fine-grained sedimentary rocks are the most susceptible to debris flow. Typically, debris flows occur when a long saturation period is followed by intense bursts of rain, concentrated in just a few hours or days. Water, often traveling beneath the surface from miles away, fills the pores in the surface material but not in bedrock or clay, which are less permeable. This creates a saturated zone in the surface material. An increase in pore pressure in turn decreases the friction that holds material to a slope. At some point, gravity causes the mass to break loose and slide along the less permeable surface below. Damaging debris flows also can and often do occur on slopes that recently endured fire damage because there are few roots holding down the soil, and the surface is covered with ash and other debris.

Destructive debris flows typically occur within western Riverside County each decade, with the most recent debris flow events taking place in 1969 and 1978. There is debris flow potential within the Perris Valley, particularly within canyon bottoms, stream channels and areas near the outlets of canyons or channels.

Exhibit S-4: Slope Instability



Subsidence and Expansive and Collapsible Soils

Subsidence involves a sudden sinking or gradual settling and compaction of soil and other surface material with little or no horizontal motion. Ground subsidence and associated fissuring have occurred in a variety of places in Riverside County, due to falling and rising ground water tables. Alluvial valley regions, such as the Perris Valley, are particularly susceptible to subsidence. Additionally, fissures have occurred along active faults that border the San Jacinto Valley and the Elsinore Trough.

Collapsible soils undergo a rearrangement of their grains, and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. Collapsible soils occur predominately at the base of mountain ranges where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Soils prone to collapse are commonly associated with man-made fill, wind-lain sands and silts, and alluvial fan and mudflow sediments deposited during flash floods. This includes cut/fill transition lots built on hillsides where a portion of the house is built over an area cut into the hillside, while the rest of the structure is built over artificial fill. During an earthquake, even slight settlement of fill materials can lead to a differentially settled structure and significant repair costs. Differential settlement of structures also typically occurs when heavily irrigated landscape areas are near a building foundation. Examples of common problems associated with collapsible soils include: tilting floors, cracking or separation in structures, sagging floors, and non-functional windows and doors.

Expansive soils have a significant amount of clay particles that can give up water (shrink) or take on water (swell). The change in volume exerts stress on buildings and other loads placed on these soils. The occurrence of these soils is often associated with geologic units having marginal stability. Expansive soils can be widely dispersed, found in hillside areas as well as low-lying areas in alluvial basins. Soils testing to identify expansive characteristics and appropriate mitigation measures are now routinely required by grading and building codes. Special engineering designs have been developed to effectively alleviate problems caused by expansive soils. These include the use of reinforced steel foundations, drainage control devices, and over-excavation and backfilling with non-expansive soil.

Flood Hazards

Flood Potential

The U.S. Congress established the National Flood Insurance Program (NFIP) with the passage of the National Flood Insurance Act of 1968 to allow property owners in participating communities to purchase federal insurance protection against flood losses. A community may participate in the NFIP by agreeing to adopt and enforce a floodplain management ordinance to reduce future flood risk due to new construction in floodplains. This insurance serves as an alternative to disaster assistance to reduce the growing costs of repairing properties damaged by floods.

The NFIP identifies Special Flood Hazard Areas (SFHAs), or areas within the floodplain of a community subject to a 1-percent or greater chance of flooding in any given year, known as the 100-year flood. Buildings in SFHAs of participating communities are required by law to have flood insurance.

NFIP delineates the nation's floodplains in a map referred to as a Flood Insurance Rate Map (FIRM). FIRMs are intended to assist communities in managing floodplain development and to assist insurance agents and property owners in identifying those areas where the purchase of flood insurance is advisable. The City of Perris is located in FIRM Flood Zones AE, A, X, and X500 as identified in Exhibits S-5 through S-14, Flood Inundation Areas. Most of the flood zones are concentrated in the lower, flatter lands within the City of Perris.

Zone AE signifies areas of the 100-year floodplain for which base flood elevations and flood hazards have been determined. Mandatory flood insurance purchase requirements apply for any development within this zone.

Zone A signifies areas of the 100-year floodplain for which base flood elevations and flood hazards have not been determined. Mandatory flood insurance purchase requirements apply for any development within this zone.

Zone X signifies areas subject to flooding in the event of a 500-year flood, areas of a 100-year sheet flow flooding with average depths of less than one foot, areas of a 100-year stream flood with contributing drainage areas less than one square mile, and areas protected from a 100-year flood by levees. Flood insurance purchase requirements do not apply to developments in this zone.

Zone X500 corresponds to the areas outside of the 500-year flood plain. Flood insurance purchase requirements do not apply in this zone for any development.

The 250-foot wide, earthen Perris Valley Storm Channel (PVSC) is the backbone of the City's storm drainage system insofar as it is the primary collector of storm water in the northern part of Perris, and is also the primary collector for the City of Moreno Valley. The storm channel was built by Riverside County Flood Control and Water Conservation District (RCFCWCD) in the mid 1950s to alleviate drainage problems associated with the expanding March Air Force Base and the frequency of overland flow in the Perris Valley during periods of high runoff. RCFCWCD owns and maintains the channel.

Exhibit S-5: Planning Area 1 Flood Zones

Source: FEMA Flood Insurance Rate Map, July 1992

Not to Scale

Legend

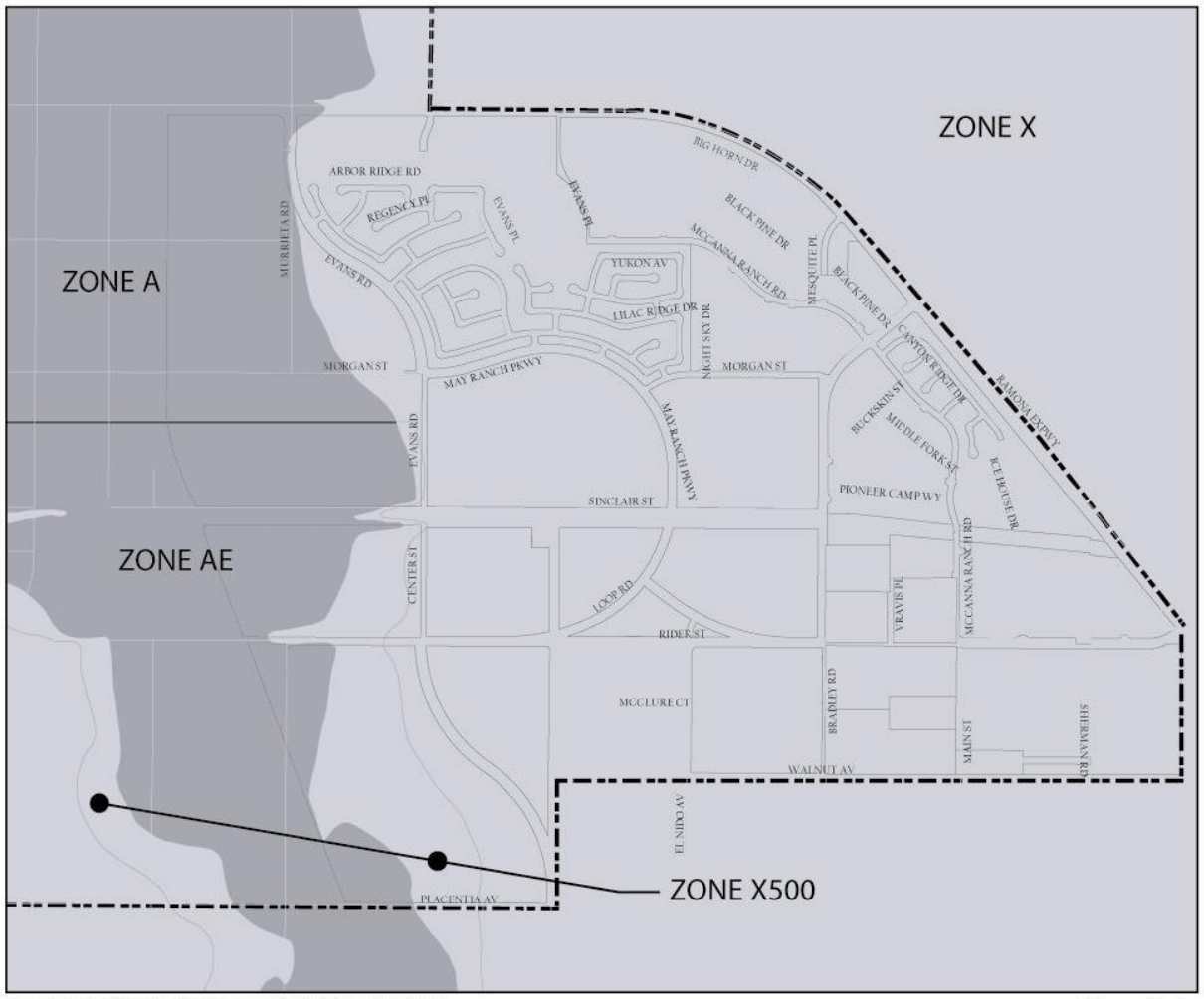
- Special Flood Hazard Areas Inudated by 100- Year Flood
- 500-Year flood area
- Other Areas
- City Boundary
- Planning Area

Zones

Zone A:	No base flood elevation determined.
Zone AE:	Base flood elevation determined
Zone X:	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less that 1 square mile; and areas protected by levees from 100-year flood area.
Zone X500:	Areas Determined to be outside 500-year flood plan

Key Map

Exhibit S-6: Planning Area 2 Flood Zones



Source: FEMA Flood Insurance Rate Map, July 1992

Not to Scale

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Zone X500:	Areas Determined to be outside 500-year flood plan

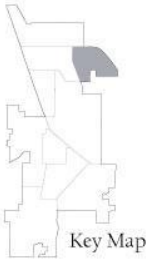
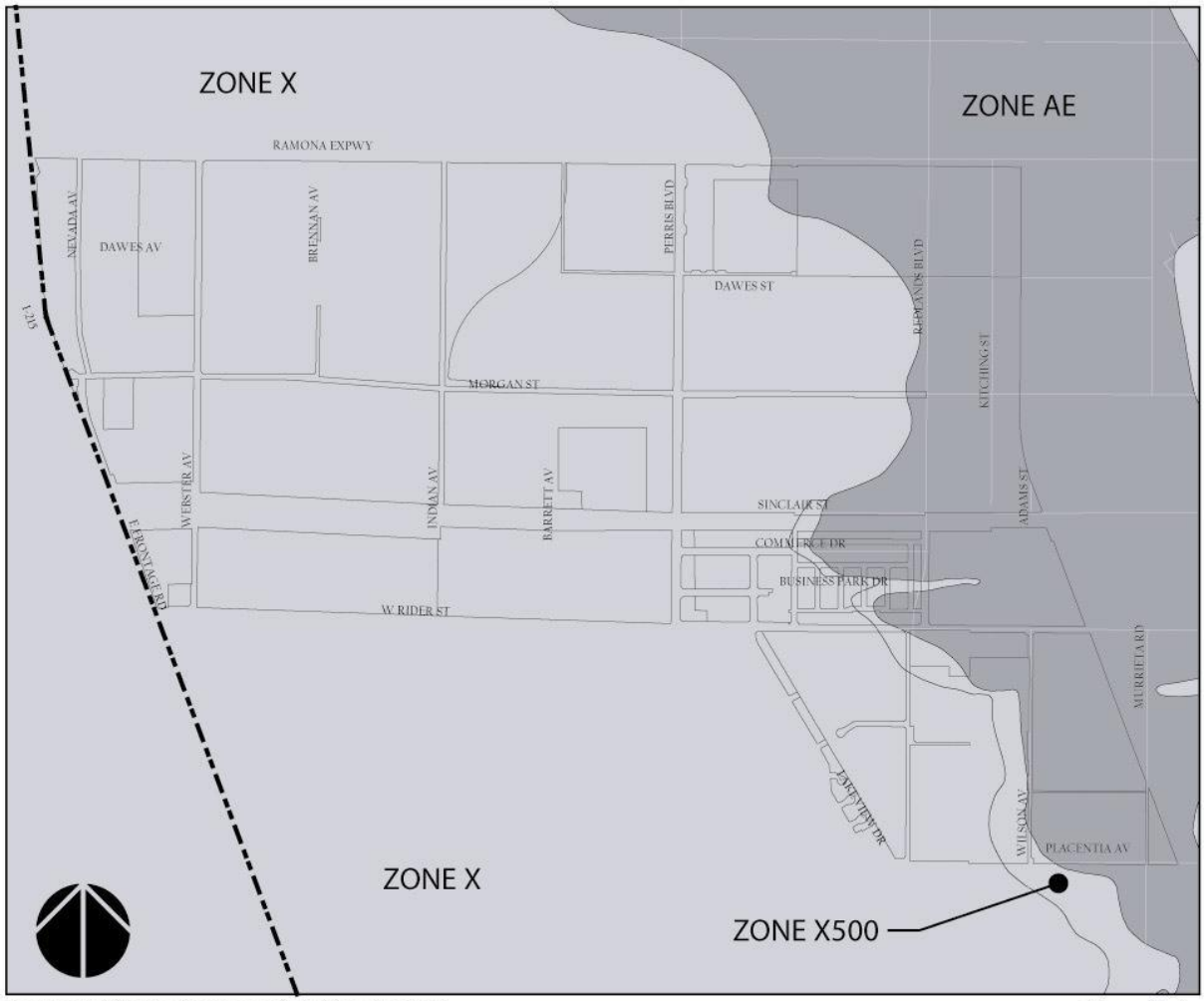


Exhibit S-7: Planning Area 3 Flood Zones



Source: FEMA Flood Insurance Rate Map, July 1992

Not to Scale

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- Other Areas
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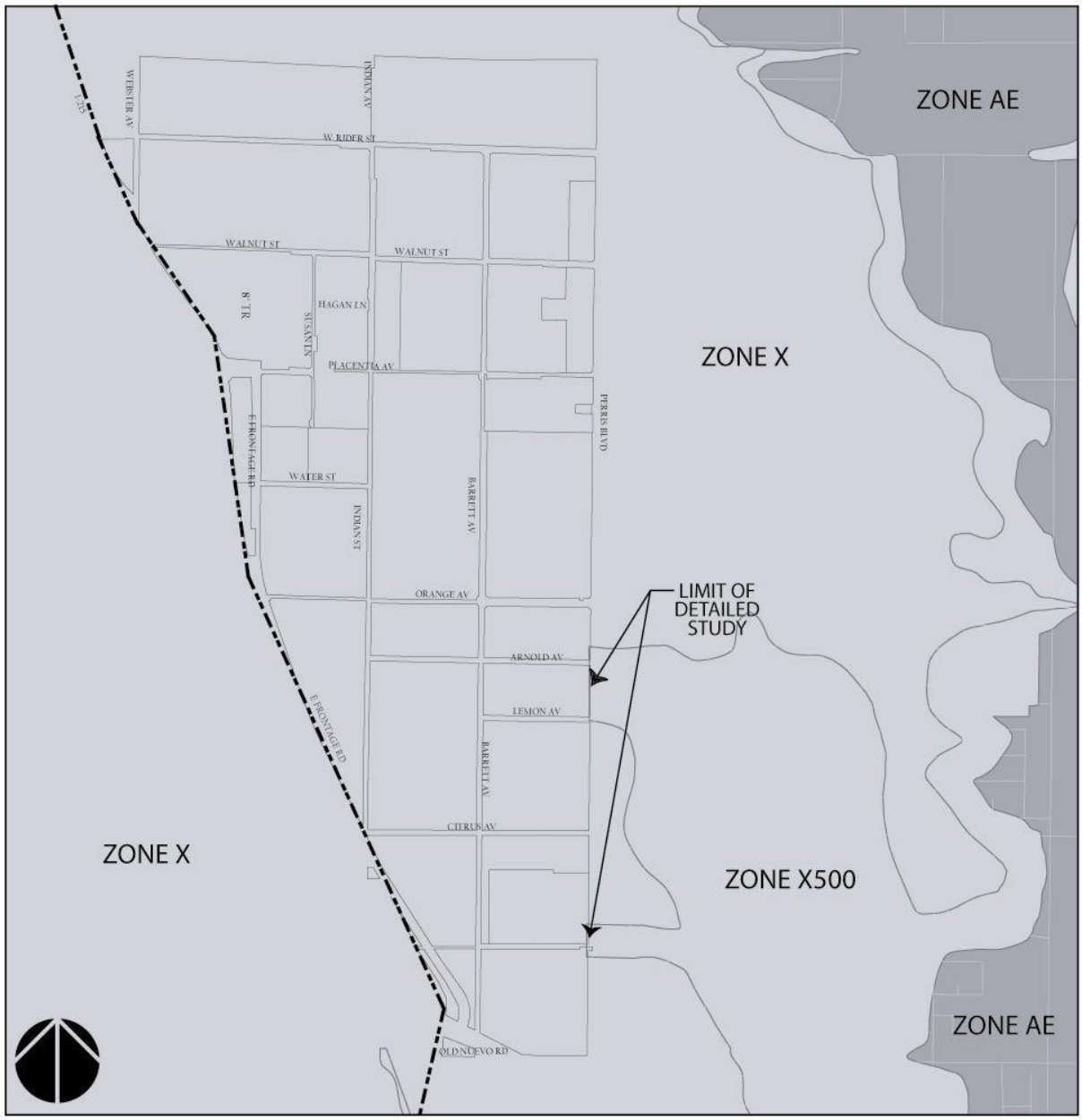
Key Map

Exhibit S-8: Planning Area 4 Flood Zones



Source: FEMA Flood Insurance Rate Map, July 1992

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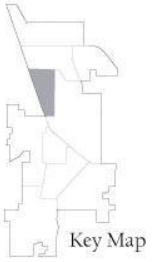
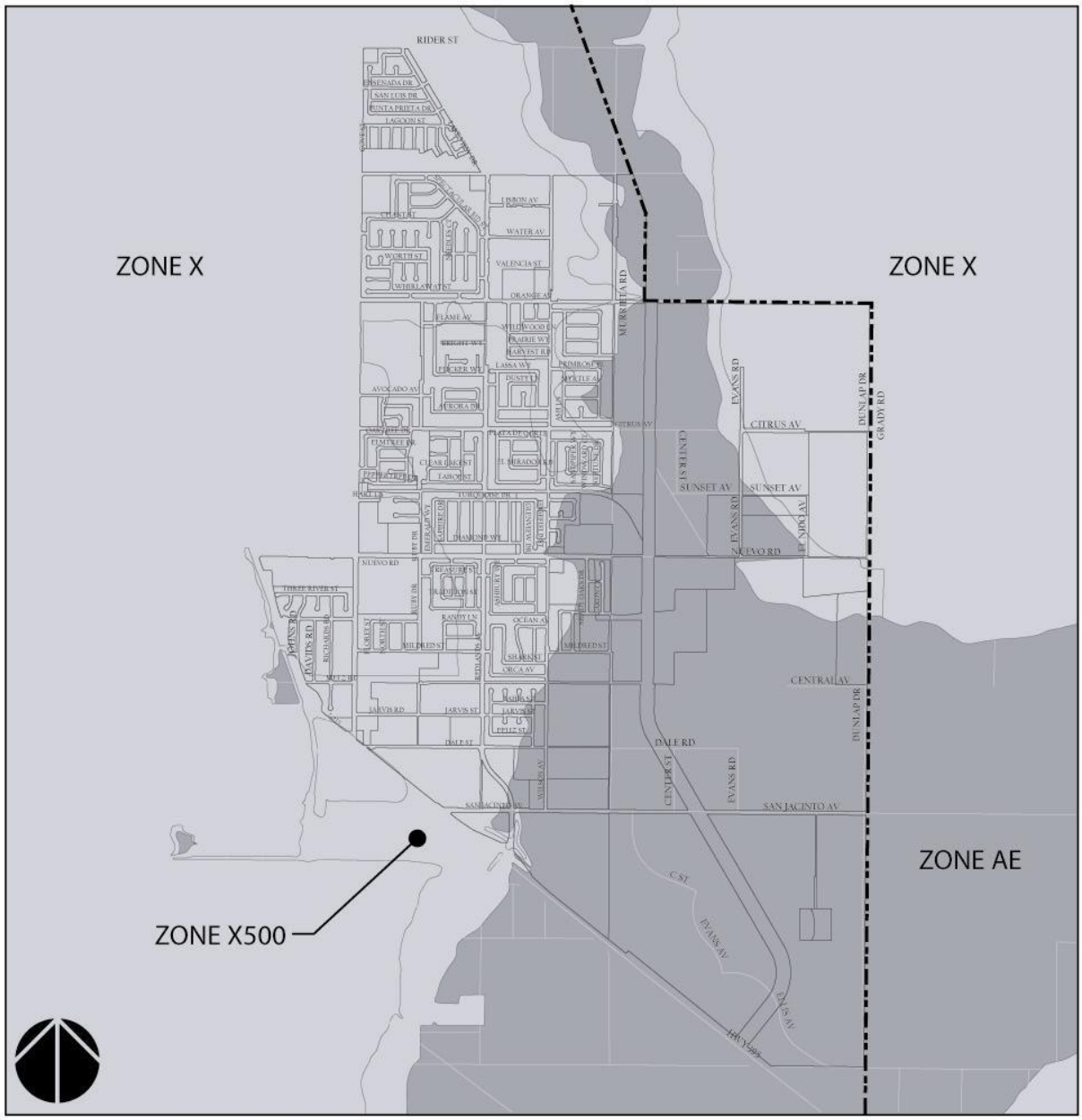


Exhibit S-9: Planning Area 5 Flood Zones



Source: FEMA Flood Insurance Rate Map, July 1992

Not to Scale

Legend

- Special Flood Hazard Areas Inudated by 100- Year Flood
- 500-Year flood area
- Other Areas
- City Boundary
- Planning Area

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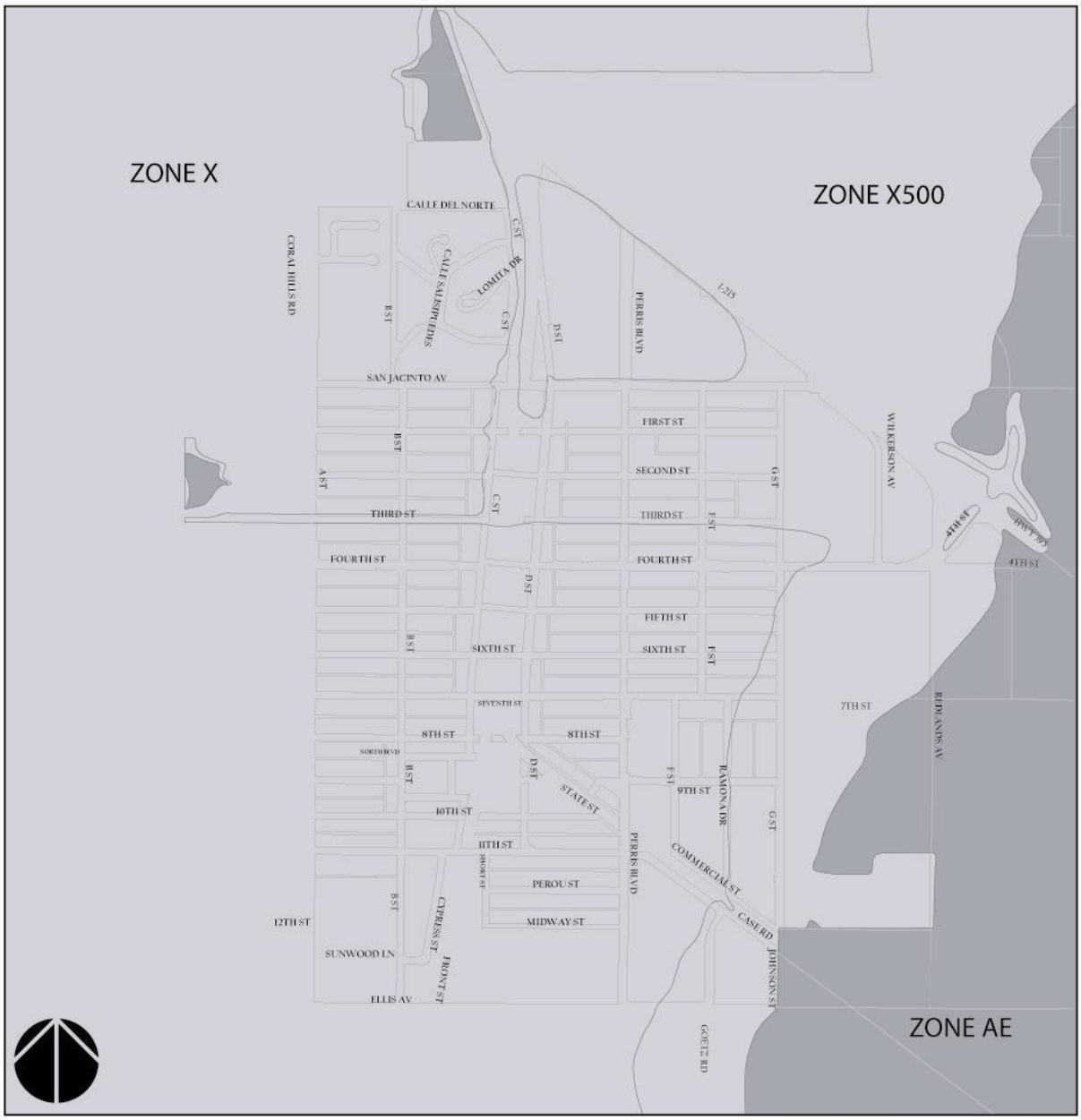
Key Map

Exhibit S-10: Planning Area 6 Flood Zones



Source: FEMA Flood Insurance Rate Map, July 1992

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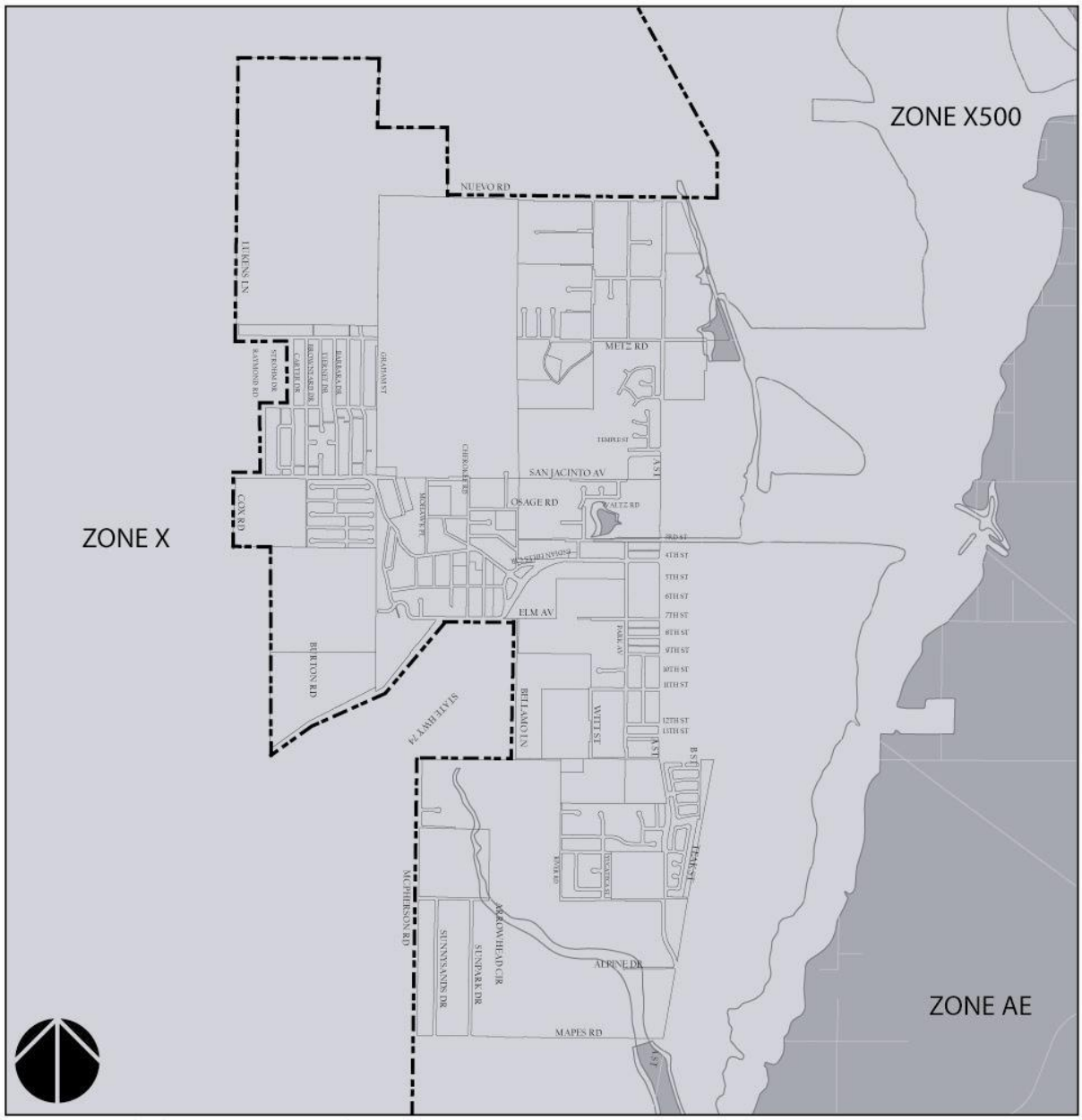
Exhibit S-11: Planning Area 7 Flood Zones



Source: FEMA Flood Insurance Rate Map, July 1992

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Zone A:	No base flood elevation determined.
Zone AE:	Base flood elevation determined
Zone X:	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less that 1 square mile; and areas protected by levees from 100-year flood area.
Zone X500:	Areas Determined to be outside 500-year flood plan

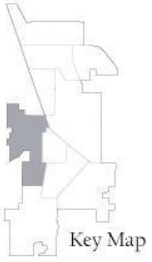


Exhibit S-12: Planning Area 8 Flood Zones

Source: FEMA Flood Insurance Rate Map, July 1992

Not to Scale

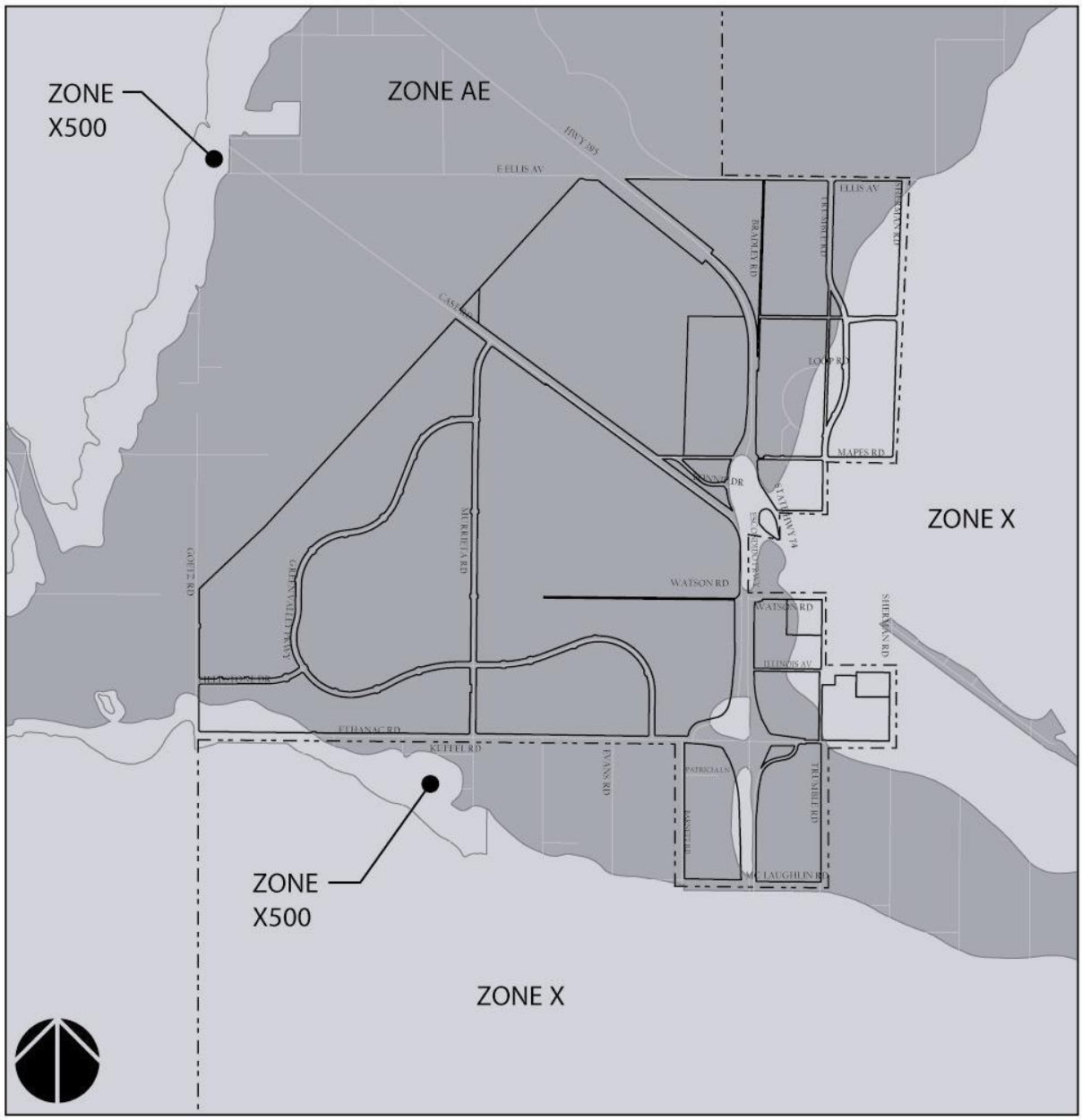
Legend

- Special Flood Hazard Areas Inudated by 100- Year Flood
- 500-Year flood area
- Other Areas
- City Boundary
- Planning Area

Zones

Zone A:	No base flood elevation determined.
Zone AE:	Base flood elevation determined
Zone X:	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less that 1 square mile; and areas protected by levees from 100-year flood area.
Zone X500:	Areas Determined to be outside 500-year flood plan

Exhibit S-13: Planning Area 9 Flood Zones



Source: FEMA Flood Insurance Rate Map, July 1992

Not to Scale

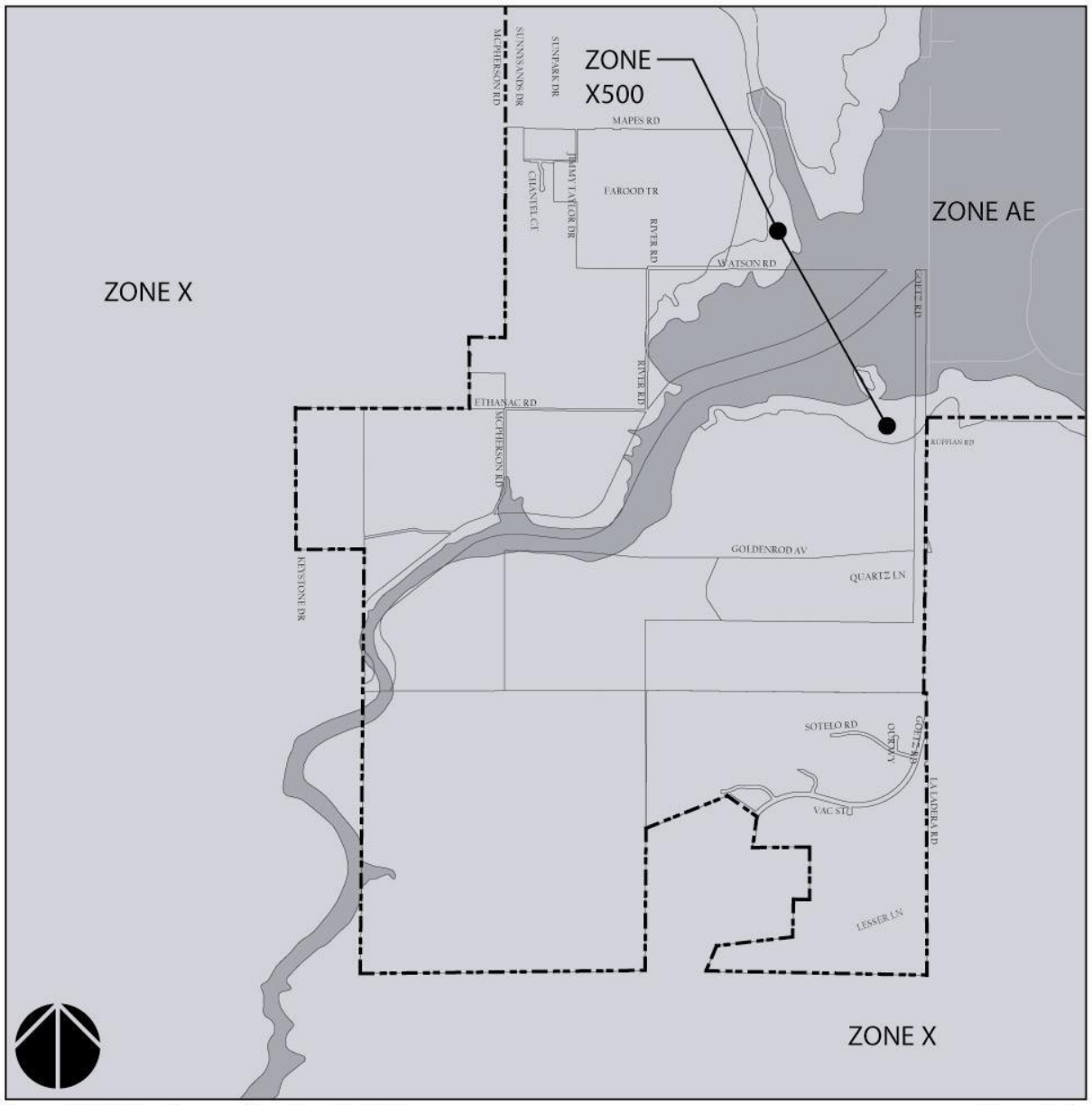
Legend

- Special Flood Hazard Areas Inudated by 100- Year Flood
- 500-Year flood area
- Other Areas
- City Boundary
- Planning Area

Zones

Zone A:	No base flood elevation determined.
Zone AE:	Base flood elevation determined
Zone X:	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less that 1 square mile; and areas protected by levees from 100-year flood area.
Zone X500:	Areas Determined to be outside 500-year flood plan

Exhibit S-14: Planning Area 10 Flood Zones



Source: FEMA Flood Insurance Rate Map, July 1992

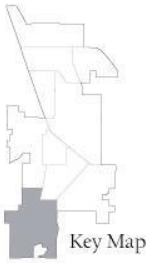
Not to Scale

Legend

- Special Flood Hazard Areas Inudated by 100- Year Flood
- 500-Year flood area
- Other Areas
- City Boundary
- Planning Area

Zones

Zone A:	No base flood elevation determined.
Zone AE:	Base flood elevation determined
Zone X:	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less that 1 square mile; and areas protected by levees from 100-year flood area.
Zone X500:	Areas Determined to be outside 500-year flood plan



The channel travels from Heacock Street in the City of Moreno Valley through Perris Valley to the San Jacinto River. All existing City storm drains flow laterally into the PVSC from the east and west. The 100-year flow rate for the Perris Valley Storm Channel increases from 12,800 cubic feet per second (cfs) at Mariposa Avenue in the City of Moreno Valley to 18,900 cfs near I-215 in Perris. At build-out of the General Plan, the resultant increase in impervious surface will contribute to a greater volume and higher velocities of storm flow in the Perris Valley Storm Channel.

The 24-mile long San Jacinto River enters southern Perris from the east, at approximately the intersection of I-215 and Ellis Avenue, and runs approximately six miles, to the extreme southwesterly boundary of the City. Upstream of the City of Perris, the San Jacinto River meanders along its natural drainage course but is improved as an approximately 500-foot wide earthen channel within the City limits. Its flood plain is over one-and-a half miles wide as it passes through the City of Perris. The San Jacinto River collects storm water from the PVSC and conveys it to Railroad Canyon Reservoir, which, in turn, discharges to Lake Ellsinore.

Dam Inundation

Perris is susceptible to flood inundation associated with dam failure, commonly referred to as dam inundation. Pursuant to Government Code Section 8589.4, which is commonly referred to as the Potential Flooding - Dam Inundation Act (the "PFDI Act"), inundation maps must be prepared, delivered and approved by the State Office of Emergency Service (OES). Dam inundation maps depict a best estimate of water flow in the event of dam failure. Projected water flow is based on a scenario in which a full reservoir completely empties and does not account for run-off from other sources.

Perris is within the potential dam inundation plain of four reservoirs: Pigeon Pass Reservoir to the north in the City of Moreno Valley, Lake Perris Reservoir to the immediate northeast, Little Lake Reservoir to the east in Hemet and Diamond Valley Lake to the southeast.[1] Failure of these dams would cause major flooding in those areas identified on Exhibit S-15.

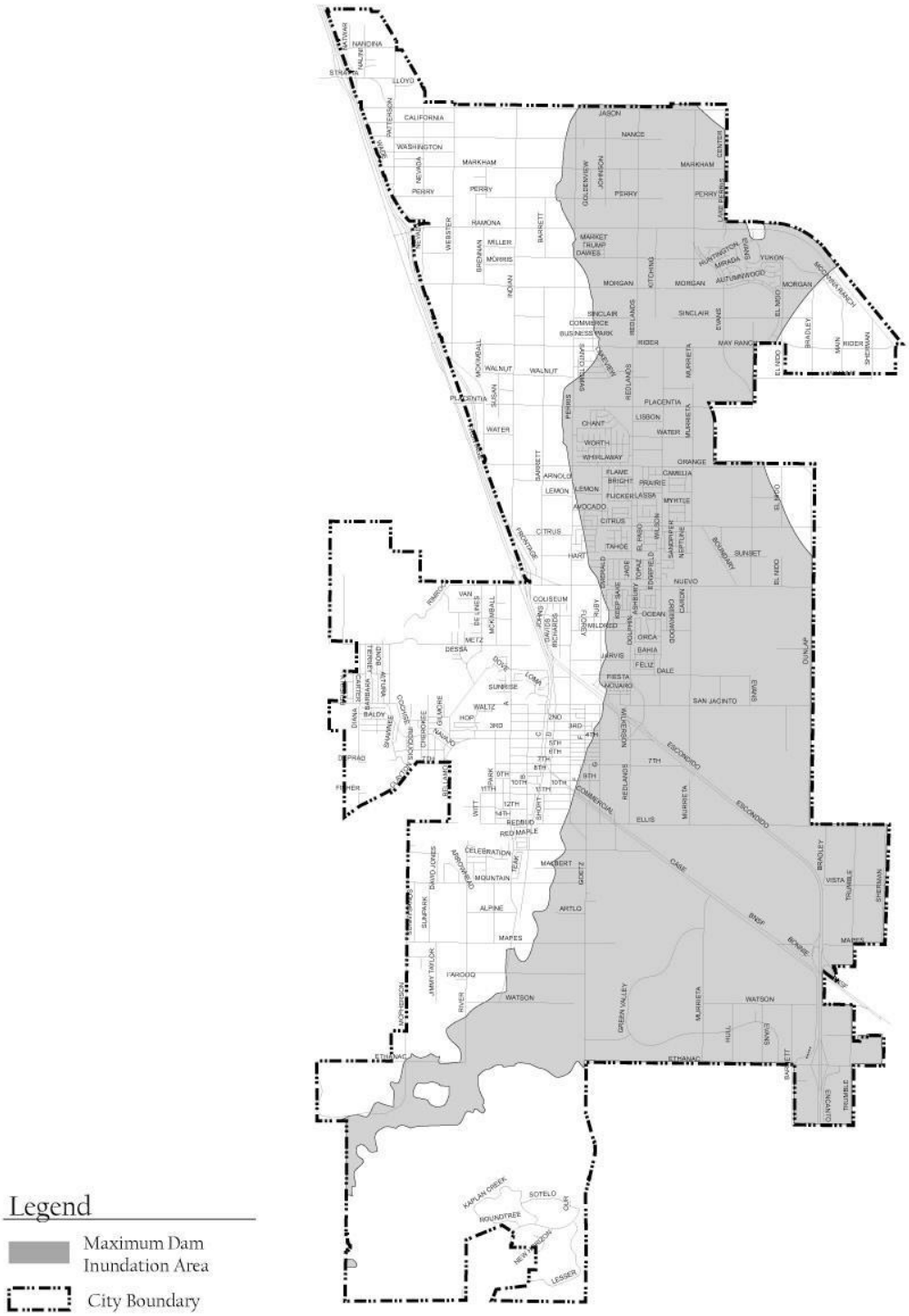
In July 2005, the State of California Department of Water Resources (DWR) identified potential seismic safety problems with Perris Dam that could result in significant damage and uncontrolled water releases in the event of a major earthquake. Engineers in the DWR, with support from expert consultants, have identified potential seismic safety risks in a section of the foundation of Perris Dam. DWR is required by state law to hire independent consultants consisting of geotechinical and geology experts every five years to evaluate the safety of all jurisdictional State Water Project dams, including Perris Dam. In one of these independent evaluations, it was recommended that DWR reanalyze the seismic stability of Perris Dam. As a result, an extensive review of existing data, new geotechnical explorations, and engineering analyses have been conducted by DWR. This work has led to the current finding contained in the draft "Perris Dam Foundation Study" report.

Although the dam itself was found to be well constructed, the report identified potential deficiencies in the foundation that need to be addressed. The report also recommends that the water level of the lake be lowered 27 feet below spillway

[1] Based on Dam Inundation Risk Maps prepared for the Riverside Operational Area, Multi-Jurisdictional Local Hazard Mitigation Plan.

crest elevation as an interim safety measure until long term plans are developed. There is no imminent threat to life or property. However, in the interest of ensuring the maximum public safety for those using and living downstream of the lake, the state has determined that it is necessary to lower the water level while additional analysis is performed.

Exhibit S-15: Dam Inundation Map



Fire Hazards

Fire Protection

The California Department of Forestry and Fire Protection (CDF), under contract with the County of Riverside and operating as the Riverside County Fire Department, provide fire prevention and suppression to the City of Perris. Station No. 1 located at 210 W. San Jacinto Avenue serves the City of Perris and is also the Riverside County Fire Department Headquarters. Other Riverside County Fire Department stations respond to emergency service calls in Perris on an as-needed basis and are included in Table S-2 representing fire-fighting facilities serving the City.

Table S-2: Fire Facilities

Station	Location	Equipment	Perris Response
No. 1	210 W. San Jacinto Ave. Perris	2 Type I Engines 1 Rescue Squad	Exclusively
No. 3	29490 Lakeview Avenue Nuevo	1 Type I Engine	As-Needed
No. 5	28971 Goetz Road Quail Valley	1 Type I Engine 1 Rescue Squad	As-Needed
No. 6	22250 Eucalyptus Avenue Moreno Valley	2 Type I Engines	As-Needed
No. 7	27860 Bradley Road Sun City	2 Type I Engines 1 Rescue Squad	As-Needed
No. 9	21565 Steel Peak Drive Goodmeadow	2 Types I Engines	As-Needed
No. 59	19450 Clark Street Mead Valley	1 Type I Engine 1 Type II Engine	As-Needed
No. 65	15111 Indian Avenue Moreno Valley	1 Type I Engine 1 Rescue Squad	As-Needed
No. 91	16110 Lassalle Street Moreno Valley	1 Type II Engine	As-Needed

Type I engines are typical engines for municipalities. Type II engines are 102' ladder engines, equipped for some aerial firefighting. Type III equipment is typically used for fighting brush fires.

During declared fire season between mid-April and the end of August, two additional Engine Companies including an additional eight to nine personnel, trained and equipped to fight brush fires, are deployed at Station No. 1. The additional staffing and fire equipment during fire season are provided and funded by the California Department of Forestry.

An additional fire station is being constructed on the southwest corner of Placentia and Redlands and is currently under construction. It is expected to be completed in fall of 2005. (Up to then, the City of Perris through a cost sharing agreement with the County of Riverside and the City of Moreno Valley has provided fire services in northern Perris through Station 91 in the City of Moreno Valley.) The new station in Perris will serve northern Perris and is to be funded by a fire facilities impact fee levied on new development and an assessment on existing development that will be served by the new facility.

Because existing development in Perris in 2003 is widely dispersed and the vacant areas in between existing developments do not have improved roads and infrastructure, the majority of fire and rescue responses within the City of Perris, however, arrive within 4-6 minutes, although calls for emergency services north of Orange Avenue average 8 minutes. The City Fire Department has a response time goal of reaching an emergency wihtin 5 minutes, 90% of the time. Response time is identified as the time a piece of aparatus is physically enroute, until it arrives at the incident, not inclusive to the reporting time involved (911). All responses to calls for emergency services are made within 10 minutes. Station No. 1 responded to 4,200 calls for service in 2002.

It is anticipated that additional services could become needed within the City as development continues at the current pace. However, a study of projected public safety needs is required to adequately plan for future service needs in the City.

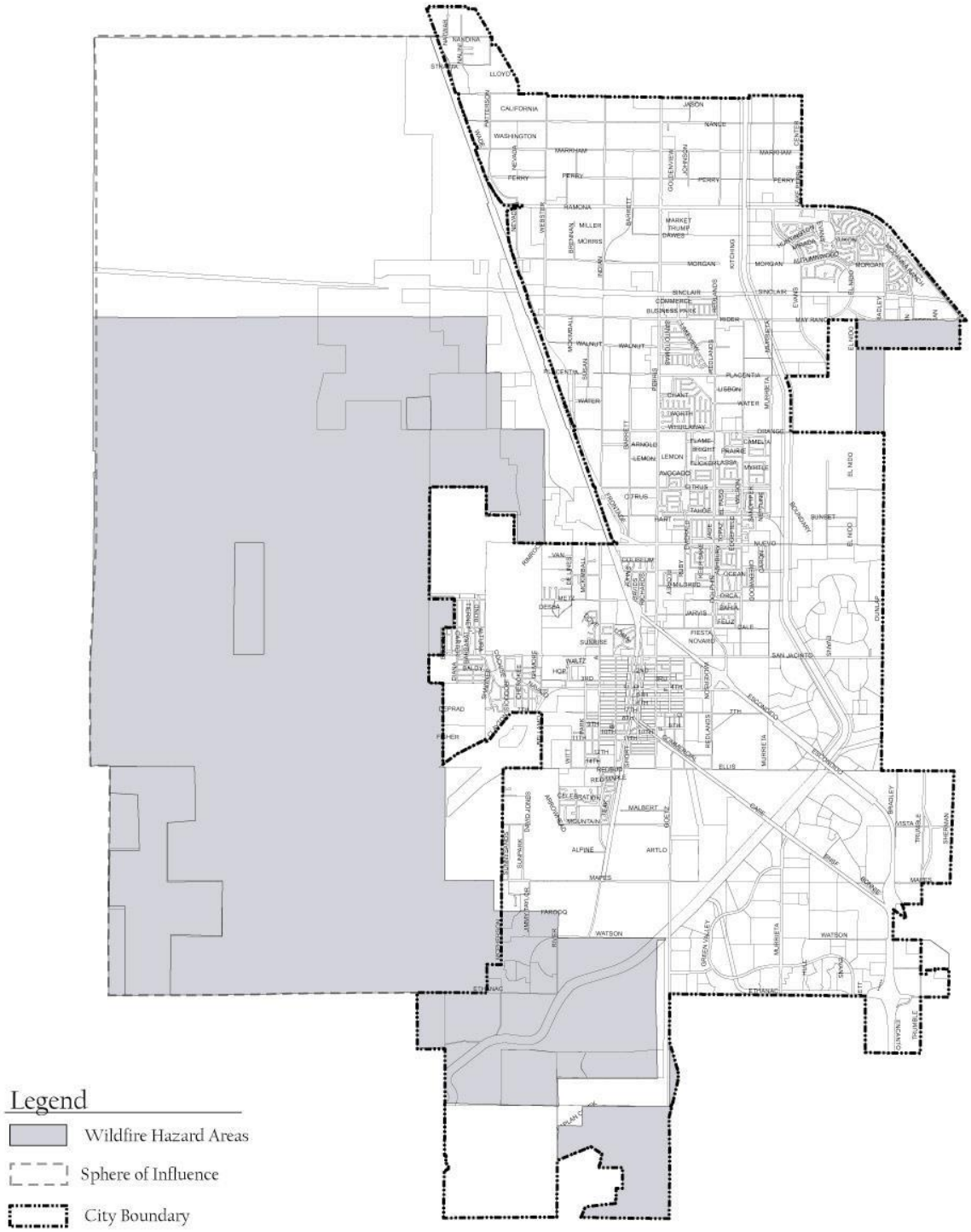
Risk of Wildland Fire

The California Fire Alliance was organized to educate communities about the risks from wildfires and assist in preparing plans for mitigating losses from wildfires. The alliance is comprised of government agencies including the California Department of Forestry and Fire Protection, the United States Forestry Service, the U.S. Bureau of Land Management, and the Governor's Office of Emergency Services. As part of its mission, the California Fire Alliance has identified "Communities at Risk" from wildfires and has assigned a numerical estimate of the level of risk for each community. The City of Perris is designated a Community at Risk and assigned the number "3", representing the highest level of risk. The rating is based on factors including the amount and types vegetative fuel sources available, the terrain, and ease of access by firefighting equipment. The CDF has indicated that Perris has an adequate water flow supply in the event of a wildland fire.

Land managers at the State level will use the list created by the California Fire Alliance to identify areas that would benefit from hazard reduction activity. This will ensure that funding is focused on areas where wildfire risks are the highest, and pose the greatest threat to developed areas. The list includes only those communities in the vicinity of lands managed by the Federal Government.

Exhibit S-16 shows areas within Perris and its Sphere of Influence that are considered prone to wild land fires. To address these risks, the City has implemented weed abatement and brush clearance regulations to help reduce the threat of the spread of wildland fires. These regulations include a 30 ft. brush clearance radius for all structures within the City, with a 150 ft. brush clearance requirement for structures on hillsides.

Exhibit S-16: Wildfire Constraint Areas



Other Hazards

Hazardous Materials

Businesses and institutions that use, store, or handle hazardous materials or generate hazardous wastes are subject to regulations and enforcement activities mandated by the State of California to protect the population and the environment from exposure to hazardous substances. For purposes of regulation, a distinction is made between hazardous materials and hazardous waste. Hazardous materials are substances that are used in a manufacturing process or are the intended, valued product of a manufacturing process. Hazardous wastes are the incidental, useless by-product of a manufacturing process. Improper handling, storage, or disposal of hazardous materials or hazardous wastes represents a threat to humans, wildlife, and the environment because of their toxicity and/or their volatility and accompanying risk of fire or explosion

The Department of Environmental Health of the Riverside County Community Health Agency is responsible for regulating the operations of businesses and institutions that handle hazardous materials or generate hazardous wastes in the City of Perris. As part of the State-mandated Certified Unified Program administered by the California Environmental Protection Agency, the County Department of Environmental Health coordinates regulatory and enforcement for the following programs related to hazardous materials and wastes:

- Household Hazardous Waste Provides for periodic collection of hazardous household wastes at locations throughout the County.
- Hazardous Waste Minimization In conjunction with the Riverside County Fire Department, responds to hazardous materials and hazardous waste incidents including spills and illegal dumping.
- Underground Storage Tanks (UST) Monitors remediation of sites contaminated by leaking petroleum tanks and regulates installation and operation of underground storage tanks containing hazardous substances.
- Hazardous Waste Generator Permits Regulates facilities that generate a hazardous waste.
- Hazardous Materials Handlers Program Regulates facilities that handle and store specified types and quantities of hazardous materials.

Hazardous materials include pesticides, chlorine, gasoline, paint, and cleaning solvents. Retail sales of these materials typically require inventory quantities sufficient to require registration with and monitoring by the County Department of Environmental Health. Moreover, these common hazardous materials are often maintained in close proximity to concentrations of population. Examples include gasoline storage at automobile service stations and swimming pool chemicals at hardware stores and home centers.

Hazardous wastes, more often than hazardous materials, are perceived as a risk in areas of concentrated heavy industry. Examples include waste acids and solvents after use in metals finishing and coating operations. In other cases, hazardous wastes are generated in non-industrial areas and include used motor oil accumulated at automobile service stations.

Table S-3: Hazardous Waste Generators in Perris

Name of Business	Location
215 Auto Service	20 Wilkerson Avenue
A&R Automotive	121 East 1st Avenue
AOC L.L.C.	19991 Seaton Avenue
Amigos Auto Repair	3553 N. Perris Blvd.
Commander Boats, Inc.	2282 Goetz Road
Cla-Val Co.	24100 Water Road
Dick Evans Transportation Inc.	23836 State Hwy 74
Frank Earnest Sales	110 South G Street
Garcia's Garage	425 West Rider Street
J Wilkinson, Inc.	350 West Mapes Road
Rite-Aid	1688 North Perris Boulevard
Precise Grade Inc.	PO Box 1835
Perris Municipal Airport	2091 Goetz Road
Perris Auto Speedway	18700 Lake Perris Drive
Perris Medical Imaging	126 Avocado Avenue
Orange Empire Railroad Museum	2201 South A Street
Modtech Inc.	2830 Barrett Avenue
National RV	3411 North Perris Boulevard
WAL-MART	2560 North Perris Boulevard
Tires-N-More	28000 State Highway 74
Swedish Speed	871 Park Ave
Soil Retention Products	1765 Watson Road
Turbocare, Inc.	184 Malbert Road
Woodwork Creations	134 Malbert Road

Table S-4: Hazardous Materials Handlers in Perris

Name of Business	Location
Cla-Val Co.	24100 Water Road
CDF Station #59	19450 Clark Street
Bruno Farms	233 West Markham Street
A & M Feed and Grain	24941 State Highway 74
Arco Station # 365	280 Old Nuevo Road
Circle K	1070 Indian Circle
Apec Racing	18700 Lake Perris Drive
Dan's Feed and Seed	240 East 4th Street
Exxon Mobile	1675 North Perris Boulevard
Ferrellgas Inc.	801 South D Street
Fredlow, Inc.	1278 West Nance Street
JR Pipeline	1530 Nandina Avenue
Meadowbrook Market	27215 State Highway 74
One Stop Batteries	425 West Rider Street
Shell Oil	4783 Wade Avenue
Union 76	33 West Nuevo Road
Perris Gas & Mart	216 South Perris Boulevard
Perris Valley Cleaners	23711 Rider Street
Winston Tire Co. #175	2055 North Perris Boulevard

Aircraft Hazards

The City of Perris has two airports within or near its City limits: 1) March Air Reserve Base/Inland Port Airport (March ARB/IPA), and 2) Perris Valley Airport.

March ARB/IPA

In the 1990s, the Federal Government ceased or reduced military operations at several military bases throughout the United States. The bases were "realigned" for civilian use and/or military reserve uses. Subsequent to the base realignment process in 1996, March Air Force Base (AFB) became March Air Reserve Base (ARB), and portions of the former Air Force base were reserved for use as a commercial airport. The March Joint Powers Authority (JPA) was created to oversee conversion and operation of the commercial airport, March GlobalPort. The JPA includes members of the Riverside County Board of Supervisors and City Council Members from adjacent cities.

In 1998, the Department of the Air Force completed an Air Installation Compatible Use Zone (AICUZ) study. The objective of the AICUZ is to achieve compatible uses of public and private lands in the vicinity of military airfields. The study completed three important tasks:

- Identification of Accident Potential Zones (APZ) and the Clear Zone
- Identification of Noise Impact Zones
- Identification of compatible uses within the above-mentioned zones

In addition to the AICUZ, Airport Influence Area boundaries around March ARB/IPA were adopted by the County of Riverside Airport Land Use Commission (ALUC) in May, 1986 and became part of the County's Airport Land Use Plan (ALUP). In 2005, the Department of the Air Force updated their Air Installation Compatible Use Zone (AICUZ) study. In 2014, the County of Riverside adopted a new Airport Land Use Compatibility Plan (ALUCP), which includes the 2014 March ARB/IPA ALUCP. The March ARB/IPA influence areas and safety zones are shown in Exhibit S-18. Noise contours have also been updated from the previous 2005 AICUZ study as shown in Exhibit S-17. The land use compatibility table guidelines are shown on Table S-5.

In 2016, the City of Perris adopted an Airport Overlay Zone (Zoning Code Chapter 19.51) to comply with the 2014 March ARB/IPA ALUCP.

Perris Valley Airport

Perris is also home to the Perris Valley Airport, a small, private airport that is a premiere location for skydiving and ballooning enthusiasts. The Perris Airport ~~has only an~~ Influence Area 1 is shown in Exhibit S-19.

Exhibit S-17: March ARB/IPA Noise Contours

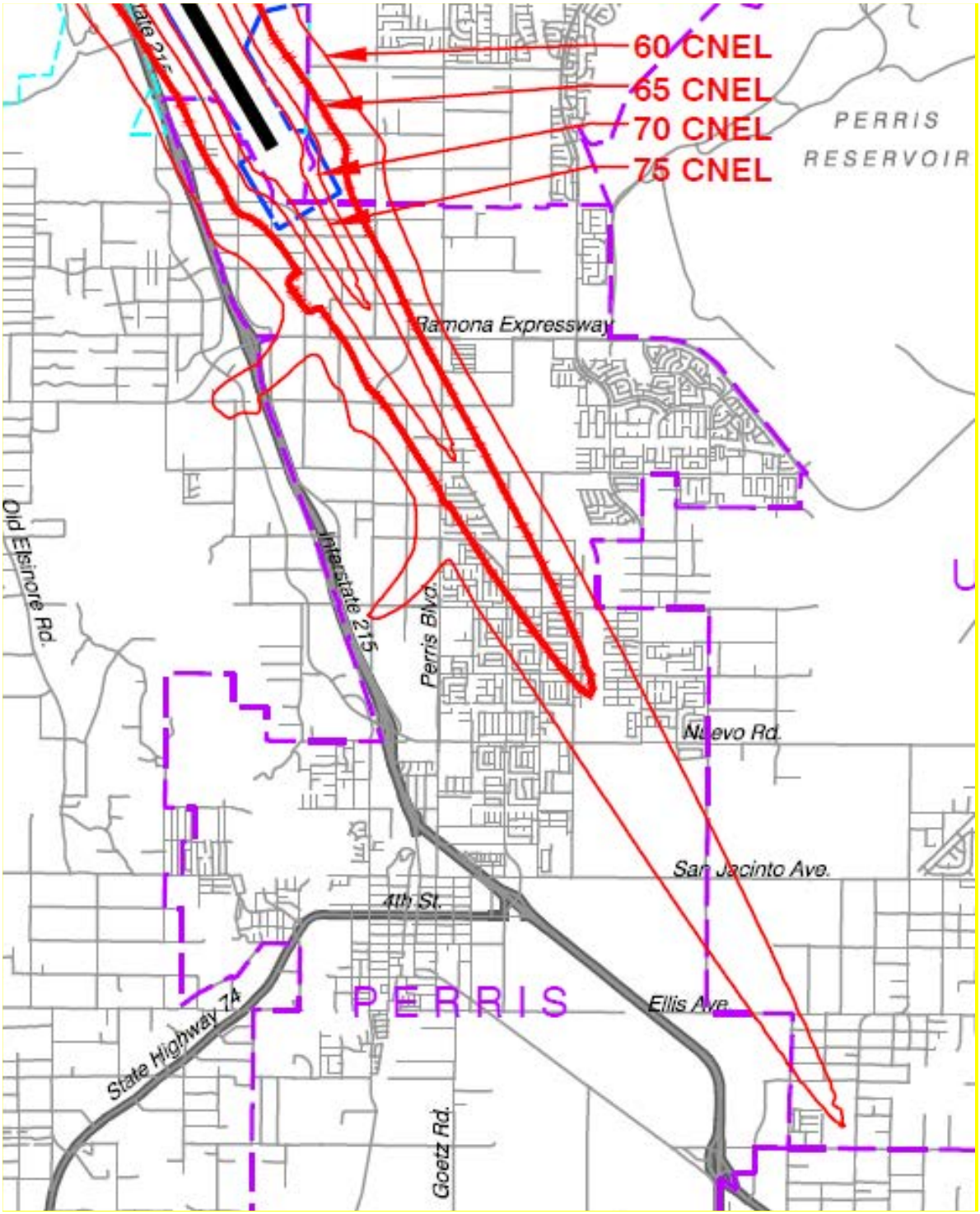


Exhibit S-18: March ARB/IPA Airport Influence Areas and Safety Zones

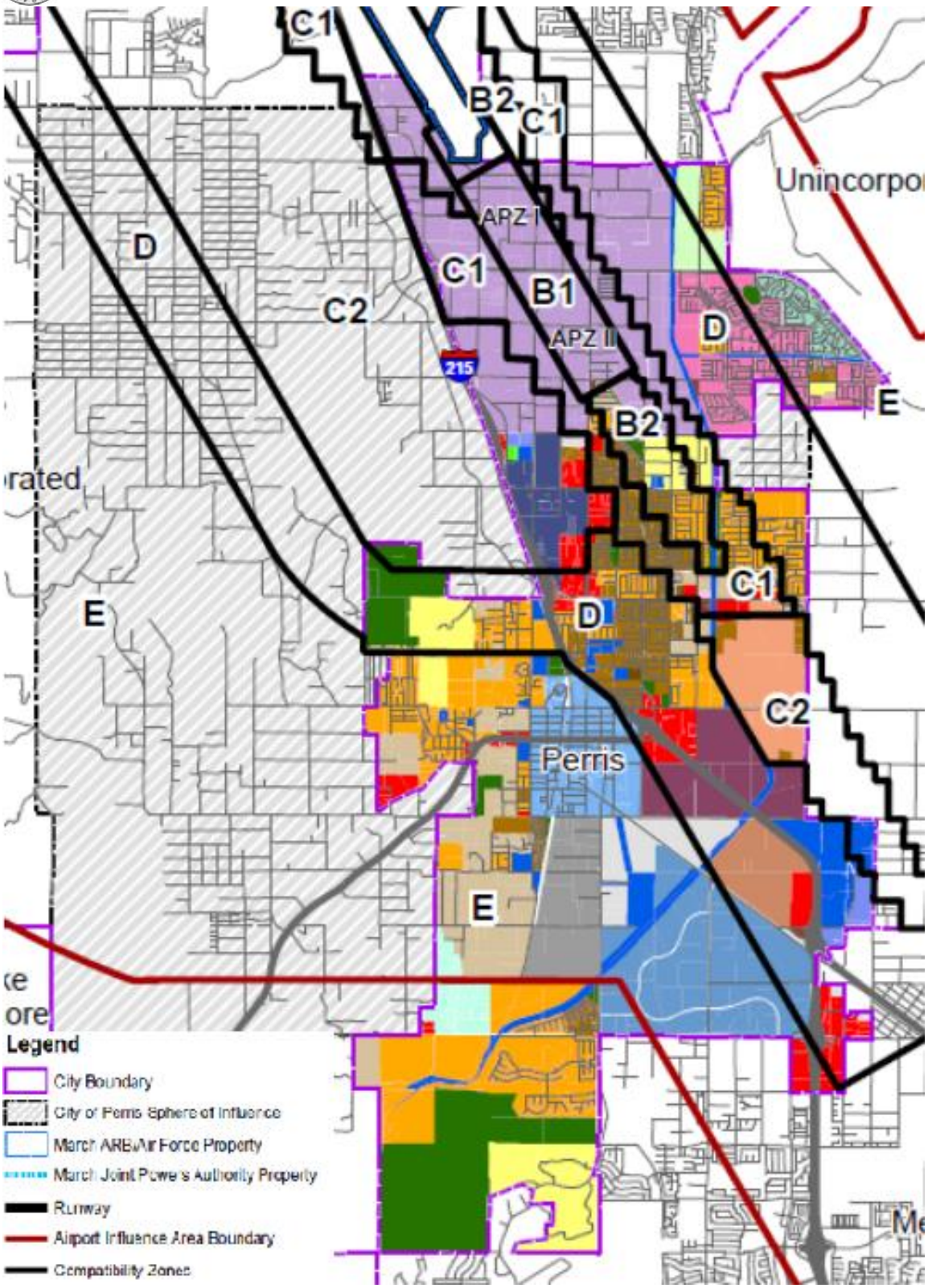


Exhibit S-19: Perris Valley Airport Influence Areas

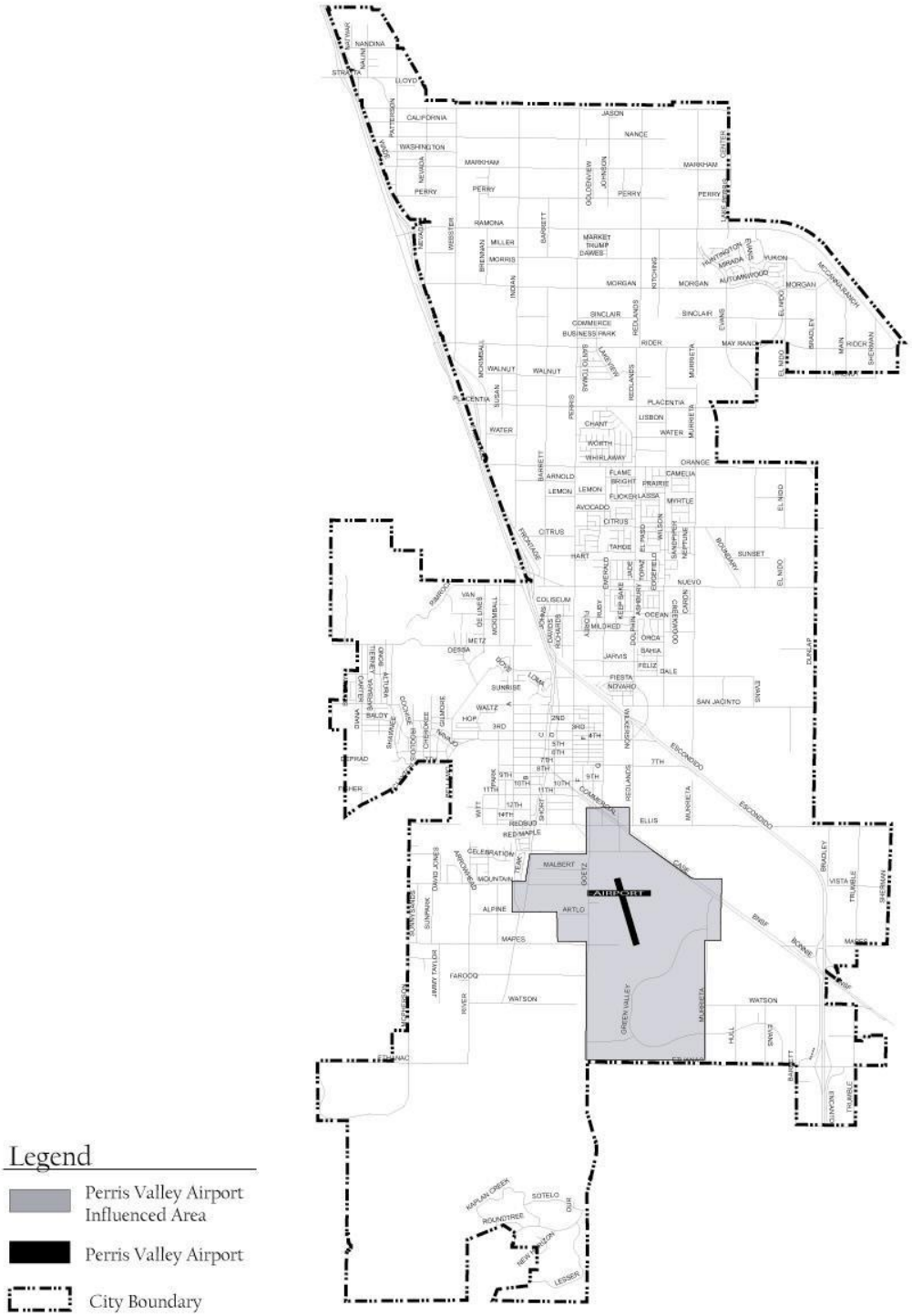


Table S-5: March ARB/IPA Land Use Compatibility Guidelines

Land Use		APZs			Noise Zones (in dBs)			
SLUCM No.	Name	CZ	APZ I	APZ II	65-69	70-74	75-79	80+
10	Residential							
11	Household Units							
11.11	Single unites; detached	N	N	Y[1]	A[11]	B[11]	N	N
11.12	Single units; semidetached	N	N	N	A[11]	B[11]	N	N
11.13	Single unites; attached row	N	N	N	A[11]	B[11]	N	N
11.21	Two units; side-by-side	N	N	N	A[11]	B[11]	N	N
11.22	Two units; one above the other	N	N	N	A[11]	B[11]	N	N
11.31	Apartments; walk-up	N	N	N	A[11]	B[11]	N	N
11.32	Apartments; elevator	N	N	N	A[11]	B[11]	N	N
12	Group quarters	N	N	N	A[11]	B[11]	N	N
13	Residential hotels	N	N	N	A[11]	B[11]	N	N
14	Mobiles home parks or courts	N	N	N	N	N	N	N
15	Transient lodging	N	N	N	A[11]	B[11]	C[11]	N
16	Other residential	N	N	N[1]	A[11]	B[11]	N	N
20	Manufacturing							
21	Food and kindred products; manufacturing	N	N[2]	Y	Y	Y[12]	Y[13]	Y[14]
22	Textile mill products; manufacturing	N	N[2]	Y	Y	Y[12]	Y[13]	Y[14]
23	Apparel and other finished products made from fabrics, leather, and similar materials; manufacturing	N	N	N[2]	Y	Y[12]	Y[13]	Y[14]
24	Lumber and wood products (except furniture); manufacturing	N	Y[2]	Y	Y	Y[12]	Y[13]	Y[14]
25	Furniture and fixtures; manufacturing	N	Y[2]	Y	Y	Y[12]	Y[13]	Y[14]
26	Paper and allied products; manufacturing	N	Y[2]	Y	Y	Y[12]	Y[13]	Y[14]
27	Printing, publishing, and allied industries	N	Y[2]	Y	Y	Y[12]	Y[13]	Y[14]
28	Chemicals and	N	N	N[2]	Y	Y[12]	Y[13]	Y[14]

	allied products; manufacturing							
29	Petroleum refining and related industries	N	N	N	Y	Y[12]	Y[13]	Y[14]
30	Manufacturing							
31	Rubber and misc. plastic products; manufacturing	N	N[2]	N[2]	Y	Y[12]	Y[13]	Y[14]
32	Stone, clay, and glass products; manufacturing	N	N[2]	Y	Y	Y[12]	Y[13]	Y[14]
33	Primary metal industries	N	N[2]	Y	Y	Y[12]	Y[13]	Y[14]
34	Fabricated metal products; manufacturing	N	N[2]	Y	Y	Y[12]	Y[13]	Y[14]
35	Professional scientific, and controlling instruments; photographic and optical goods; watches and clocks; manufacturing	N	N	N[2]	Y	A	B	N
39	Miscellaneous manufacturing	N	Y[2]	Y[2]	Y	Y[12]	Y[13]	Y[14]
40	Transportation, communications, and utilities							
41	Railroad, rapid rail transit, and street railroad transportation	N[3]	Y[4]	Y	Y	Y[12]	Y[13]	Y[14]
42	Motor vehicle transportation	N[3]	Y[4]	Y	Y	Y[12]	Y[13]	Y[14]
43	Aircraft Transportation	N[3]	Y[4]	Y	Y	Y[12]	Y[13]	Y[14]
44	Marine craft transportation	N[3]	Y[4]	Y	Y	Y[12]	Y[13]	Y[14]
45	Highway and street right-of-way	N[3]	Y[4]	Y	Y	Y[12]	Y[13]	Y[14]
46	Automobile parking	N[3]	Y[4]	Y	Y	Y[12]	Y[13]	Y[14]
47	Communications	N[3]	Y[4]	Y	Y	Y[12]	Y[13]	Y[14]
48	Utilities	N[3]	Y[4]	Y	Y	Y[12]	Y[13]	Y[14]
Land Use		**APZs**			**Noise Zones (in dBs)**			
SLUCM No.	**Name**	**CZ**	**APZ I**	**APZ II**	**65-69**	**70-74**	**75-79**	**80+**
50	Trade							
51	Wholesale trade	N	Y[2]	Y	Y	Y[12]	Y[13]	Y[14]
52	Retail trade-building materials,	N	Y[2]	Y	Y	Y[12]	Y[13]	Y[14]

	hardware, and farm equipment							
53	Retail trade-general merchandise	N	N[2]	Y[2]	Y	A	B	N
54	Retail trade-food	N	N[2]	Y[2]	Y	A	B	N
55	Retail trade-automotive, marine craft, aircraft, and accessories	N	Y[2]	Y[4]	Y	A	B	N
56	Retail trade-apparel and accessories	N	N[2]	Y[2]	Y	A	B	N
57	Retail trade-furniture, home furnishing, and equipment	N	N[2]	Y[2]	Y	A	B	N
58	Retail trade-eating and drinking establishments	N	N	N[2]	Y	A	B	N
59	Other retail trade	N	N[2]	Y[2]	Y	A	B	N
60	Services							
61	Finance, insurance and real estate services	N	N	Y	Y	A	B	N
62	Personal services	N	N	Y	Y	A	B	N
62.4	Cemeteries	N	Y[7]	N[2]	Y	Y[12]	Y[13]	Y[14, 21]
63	Business services	N	Y[8]	Y	Y	A	B	N
64	Repair services	N	Y[2]	Y	Y	Y[12]	Y[13]	Y[14]
65	Professional services	N	N	Y	Y	A	B	N
65.1	Hospitals, nursing homes	N	N	Y	A*	B*	N	Y[14]
65.1	Other medical facilities	N	N	N	Y	A	B	N
66	Contract construction services	N	Y[6]	N	Y	A	B	N
67	Governmental services	N	N	N	Y*	A*	B*	N
68	Educational services	N	N	N	A*	B*	N	N
68	Miscellaneous services	N	N[2]	N	Y	A	B	N
Land Use		**APZs**			**Noise Zones (in dBs)**			
SLUCM No.	**Name**	**CZ**	**APZ I**	**APZ II**	**65-69**	**70-74**	**75-79**	**80+**
70	Cultural. Entertainment and recreational services							
71	Cultural activities (including churches)	N	N	N[2]	A*	B*	N	N
71.2	Nature exhibits	N	Y[2]	Y	Y*	N	N	N
72	Public Assembly	N	N	N	Y	N	N	N
72.1	Auditoriums,	N	N	N	A	B	N	N

	concert halls							
72	Outdoor music shell, amphitheaters	N	N	N	N	N	N	N
72.2	Outdoor sports arenas, spectator sports	N	N	N	Y[17]	Y[17]	N	N
73	Amusements	N	N	Y[8]	Y	Y	N	N
74	Recreational activities (including golf courses, riding stables, water recreation)	N	Y[8,9,10]	Y	Y*	A*	B*	N
75	Resorts and group camps	N	N	N	Y*	Y*	N	N
76	Parks	N	Y[8]	Y[8]	Y*	Y*	N	N
79	Other cultural entertainment, and recreation	N	Y[9]	Y[9]	Y*	Y*	N	N
80	Resources production and extraction							
81	Agriculture (except livestock)	Y[16]	Y	Y	Y[18]	Y[19]	Y[20]	Y[20,21]
81.5 to 81.7	Livestock farming and animal breeding	N	Y	Y	Y[18]	Y[19]	Y[20]	Y[20,21]
82	Agriculture-related activities	N	Y[5]	Y	Y[18]	Y[19]	N	N
83	Forestry activities and related services	N[5]	Y	Y	Y[18]	Y[19]	Y[20]	Y[20,21]
84	Fishing activities and related services	N[5]	Y[5]	Y	Y	Y	Y	Y
85	Mining activities and related services	N	Y[5]	Y	Y	Y	Y	Y
89	Other resources production and extraction	N	Y[5]	Y	Y	Y	Y	Y

LEGEND

SLUCM – Standard Land Use Coding Manual, U.S. Department of transportation

Y – (Yes) – Land uses and related structures are compatible without restriction.

N – (No) – Land use and related structures are not compatible and should be prohibited.

Y^X – (yes with restrictions) – Land use and related structures generally compatible; see notes indicated by the superscript.

N^X – (no with exceptions) – See notes indicated by the superscript.

NLR – Noise Level Reduction (NLR) (outdoor to indoor) to be achieved through incorporation of noise attenuation measures into the design and construction of the structures.

A, B, or C – Land use and related structures generally compatible; measures to achieve NLR for A (DNL 65-69 dB), B (DNL 70-74dB), C (DNL 75-79 db), need to be incorporated into the design and construction of structures.

A*, B*, and C* - Land use generally compatible with NLR; however, measures to achieve an overall noise level reduction do not necessarily solve noise difficulties and additional evaluation is warranted, See appropriate notes below.

* - The designation of these uses as "compatible" in this zone reflects individual Federal agency and program considerations of general cost and feasibility factors, as well as past community experiences and program objectives. Localities, when evaluating the application of these guidelines to specific situations, might have different concerns or goals to consider.

NOTES

1. Suggested maximum density of 1-2 dwelling units per acre, possibly increased under a Planned Unit Development where maximum lot

coverage is less than 20 percent.
2. Within each land use category, uses exist where further deliberating by local authorities might be needed due to the variation of densities in people and structures. Shopping malls and shopping centers are considered incompatible use in any accident potential zone (CZ, APZ I, or APZ II).
3. The placement of structures, buildings, or aboveground utility lines in the CZ is subject to severe restrictions. In a majority of the CZs, these items are prohibited. See Air Force Instruction 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning,* and Air Force Joint Manual 32-8008, *Airfield and Heliport Planning Criteria,* for specific guidance.
4. No passenger terminals and no major aboveground transmission lines in APZ I.
5. Factors to be considered: labor intensity, structural coverage, explosive characteristics, and air pollution.
6. Low-intensity office uses only. Meeting places, auditoriums, etc. are not recommended.
7. Excludes chapels.
8. Facilities must be low intensity.
9. Clubhouse not recommended.
10. Areas for gatherings of people are not recommended.
11. a) Although local conditions might require residential use, it is discouraged in DNL 65-69 dB and strongly discouraged in DNL 70-74 dB. The absence of viable alternative development options should be determined, and an evaluation indicating a demonstrated community need for residential use would not be met if development were prohibited in these zones should be conducted prior to approvals.
b) Where the community determines the residential uses must be allowed, measures to achieve outdoor-to-indoor noise level reduction (NLR) for DNL 65-69 dB and DNL 70-74 dB should be incorporated into building codes and considered in individual approvals.
c) NLR criteria will not eliminate outdoor noise problems. However, building location and site planning, and design and use of berms and barriers can help mitigate outdoor exposure, particularly from near-ground level sources. Measures that reduce outdoor noise should be used whenever practical in preference to measure which only protect interior spaces.
12. Measures to achieve the same NLR as required for facilities in DNL 65-69 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
13. Measures to achieve the same NLR as required for facilities in DNL 70-74 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where he normal noise level is low.
14. Measures to achieve the same NLR as required for facilities in DNL 75-79 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
15. If noise sensitive, use indicated NLR; if not, the use is compatible.
16. No buildings.
17. Land use is compatible provided special sound reinforcement systems are installed.
18. Residential buildings require the same NLR as requires for facilities in DNL 65-69 dB range.
19. Residential buildings require the same NLR as requires for facilities in DNL 70-74 dB range.
20. Residential buildings are not permitted.
21. Land use is not recommended. If the community decides the use is necessary, personnel should wear hearing protection devises.

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Public Safety

Police Protection

The Riverside County Sheriff's Department, under contract with the City of Perris and operating as the Perris Police Department, provides law enforcement services to the City of Perris. The Perris Station of the Riverside County Sheriff's Department (Perris Police Station) is located at 403 East 4th Street in Perris. The Perris Station also serves a sizeable area of unincorporated Riverside County.

In 2002, a total of 177 Sheriff's Department personnel were assigned to the Perris Station. This includes 133 sworn peace officers. Forty (40) of the sworn officers are assigned to serve the City of Perris under terms of the contract between the City and the Riverside County Sheriff's Department.

Sheriff response times vary by time of day and priority of the call. Average response time from dispatch to on-scene arrival for an emergency call as of May 2002 was 5.3 minutes. In the year 2001, 29,802 "911" calls were generated from within the City of Perris.

Medical Services

The nearest trauma care unit is located at the Riverside County Regional Medical Center in Moreno Valley at 26520 Cactus Avenue. This medical center is a Level II Trauma Center, defined by the American College of Surgeons (ACS) to include:

- A team of certified trauma care specialists available 24 hours each day including emergency room physicians, trauma surgeons, neurosurgeons and neurologists, orthopedic surgeons, plastic surgeons, cardiologists and heart surgeons, anesthesiologists, and radiologists.
- Trauma service directed by a certified surgeon specializing in trauma care.
- Trained staff available and highly specialized diagnostic and treatment equipment
- Operating rooms available 24 hours per day.
- A comprehensive clinical laboratory operating 24 hours per day.
- Rehabilitation facilities staffed and equipped for acute care of critically injured patients.

Also in the City of Moreno Valley is the Moreno Valley Community Hospital located at 27300 Iris Avenue. This facility is a 101-bed hospital providing acute care, inpatient services, critical care, and surgical services.

In the City of Perris, Riverside County Fire Department personnel and equipment "first responds". Fire Department personnel provide initial care and stabilize the sick or injured until an ambulance arrives. Ambulance service in Perris is provided by American Medical Rescue (AMR) under contract with the County of Riverside. AMR ambulances include Advanced Life Support personnel and equipment.

Multi-Hazard Functional Plan

The City adopted a Multi-Hazard Functional Plan in 1995. The plan is designed to address planned response to extraordinary emergency situations, either man-made or naturally caused. Examples of such emergencies include wildland fires, nuclear incidents, or massive earthquakes. The Plan details the chain-of-command and step-by-step processes for the City's emergency response team for preparing for potential disasters and for responding to actual disasters. Checklists, reporting

documents, and specific responsibilities of the response team are included in the Plan.

The Disaster Mitigation Act of 2000 was passed by the United States Congress and signed into law on October 20, 2000. The Act reinforces the importance of planning and preparation for disasters in an effort to reduce disaster losses. The Act streamlines administration of disaster relief and programs to promote mitigation activities.

Provisions within the Act require States and Counties to create and implement mitigation strategies in order to remain eligible for federal damage assistance. If a State or County does not develop a mitigation plan, financial assistance for disaster recovery is reduced from 75% of total loss to 25%.

Riverside County prepared a revised multi-agency Multi-Hazard Functional Plan, in response to the directives of the Disaster Mitigation Act. The revised plan includes the City of Perris, and the current multi-agency plan replaced the City's 1995 Multi-Hazard Functional Plan.

Terrorist Risk

After the bombing of the World Trade Center towers in New York City on September 11, 2001, infrastructure such as bridges, water and energy supply lines, reservoirs, electrical generation facilities, and other physical plants that provide water and power have become the focus of increased security measures. The Office of Homeland Security was created and has consolidated the functions of the Federal Emergency Management Agency, the United States Fire Administration, and other agencies responsible for disaster preparedness.

The existing City of Perris Multi-Hazard Functional Plan addressed terrorist strikes against March ARB as part of the National Security Emergencies section. As a military installation, March ARB is a presumed target for terrorist strikes. The County of Riverside, in conjunction with the City of Perris, is currently preparing an updated Emergency Operations Plan that is based on the recently updated Multi-Hazard Function Plan.

Issues

Issues are key considerations that shape this Element as a guide for future action by the City. The Issues defined in the Safety Element focus on 1) existing conditions that create a susceptibility to increased damage caused by a natural or man-made disaster and 2) existing conditions that indicate an increased likelihood that a natural or man-made disaster will occur and 3) service delivery issues related to police and fire protection, medical services, and disaster preparedness and response.

Issue #1: Vacant Land

Six of the ten Planning Areas (PA-1, PA-3, PA-4, PA-7, PA-9, and PA-10) contain vast tracts of undeveloped land. The potential hazard arising from an abundance of vacant land is the risk of wildfire where unirrigated plant material can act as fuel in a wildfire situation. Unattended and unsecured land can be attractive for illegal off-road driving where an engine spark can cause a fire in dry grasses, and the unattended land can become a dumping place for hazardous materials such as used oil.

Issue #2: Sphere of Influence

The City's Sphere of Influence includes an area adjacent to PA-2 and PA-5, an area adjoining the western edge of the City at PA-4, PA-7 and PA-10, and a small area to the southeast of the City adjacent to PA-9. The largest section of the Sphere, along the western edge of the City, is designated for Rural Residential Agricultural use, and contains large amounts of undeveloped land. As with Issue #1, the Sphere areas are susceptible to wildland fires, to the lack of development, potential loss of property would be small in proportion to the amount of land that would be affected by fire.

Issue #3: March Inland Port/March Air Reserve Base/Inland Port Airport Accident Potential Zones

Portions of PA-1 and PA-3 are included within March Air Reserve Base/IPA Accident Potential Zones I and II (APZ I and APZ II) and the Clear Zone. These impact zones effectively restrict the types and intensities of land uses on some properties within the APZs to mostly non-residential or low-occupancy industrial uses.

Issue #4: Infrastructure Development and Service Delivery

Due to the large amounts of vacant land in some Planning Areas, the infrastructure required to support development, such as roads, sewers and storm drains, is also lacking. As this land is developed, there will be a need for substantial infrastructure funding and construction concurrent with new development. In older sections of the City, roads are in disrepair. Potholes and other road damage slow emergency response times, increasing the risk of loss of human life and damage to property in many emergency situations.

As the population increases with new residential development, there will be an increase in emergency services response times without new facilities to serve the new demands of the developing areas. Current fees exacted in conjunction with new housing development do not completely pay for new police or fire facilities or other infrastructure

requirements. New housing development should be required to generate adequate fees to provide upgraded or expanded facilities for police and fire services as well as the roads, drains, sewer lines, and other infrastructure necessary to serve the new development.

Issue #5: Multi-Species Habitat Conservation Plan

Implementation the MSHCP will impact development within the City. Upon implementation, the MSHCP will limit the amount and type of development that can occur within the Plan boundaries, but will enable development of flood control facilities that significantly reduce the amount of property at risk for flooding.

Table S-6: Planning Areas and Increased Risk Factors

	Planning Area:									
Issue:	1	2	3	4	5	6	7	8	9	10
Vacant Land	X		X	X			X		X	X
Aircraft Accident potential--March ARB/Inland Global Port	X		X							
Lack of Adequate infrastructure for emergency response	X		X	X	X	X	X			X
MSHCP					X			X	X	X

Strategy for Action

The Safety Element Strategy for Action reflects the community's expectations and ambitions for positive changes in the physical environment of the City and how these are to be achieved. The Strategy for Action "Goals" defines desired General Plan outcomes.

"Policies" included in the *Strategy for Action* provide the overall direction for choosing among alternative courses of action necessary to achieve the Goals set forth in the *Strategy for* Action. Policies provide a measure of flexibility needed to adapt the course of action to changes in the circumstances occurring during the estimated thirty-year time span of the General Plan.

"Implementation Measures" are specific, discreet actions the City may take to make the City of Perris a safer community. Implementation Measures define the municipal work program necessary to minimize risk of damage to property or loss of life due to natural or man-made disasters consistent with Safety Element Policies.

Goals, Policies and Implementation Measures

Goal I

Reduced risk of damage to property or loss of life due to a natural or man-made disasters

Policy I.A
Create or participate in Multi-Jurisdictional Hazard Plans

Implementation Measures

I.A.1 Identify all known hazards within the City in the Multi-jurisdictional Hazard Plan

I.A.2 Prepare evacuation routes and disaster response plans for all known hazards within the City

I.A.3 Participate in on-going disaster preparedness training programs in conjunction with other jurisdictions

Policy I.B: Flooding
The City of Perris shall restrict future development in areas of high flood hazard until it can be shown that risk is or can be mitigated

Implementation Measures

I.B.1 Provide leadership in efforts to improve the Perris Valley Storm Channel and San Jacinto River Channel

I.B.2 Adopt Capital Facility Fees to fund drainage improvements

I.B.3 Prepare and adopt a revised Area Drainage Plan including "regional" storm water detention basins capable of serving contributory areas of at least 100 acres

I.B.4 Require that new development projects must incorporate facilities for on-site control of storm water run-off

I.B.5 Require flood mitigation plans for all proposed projects in the 100 year floodplain (Areas A and AE)

Policy I.C: Fire
Reduce the risk of damage from fires

Implementation Measures

I.C.1 Maintain fuel modification standards to ensure proper clearance of brush around homes and businesses abutting undeveloped areas

I.C.2 Adopt landscaping standards to include a fire-resistant plant palette, where appropriate

I.C.3 Enforce current California Building Code standards to exclude the use of materials that pose a fire risk such as untreated wood roofing materials

I.C.4 Maintain weed abatement Code Enforcement efforts

I.C.5 Maintain appropriate setback requirements in the Zoning Code for new development or redevelopment to prevent spread of fire

Policy I.D: Aircraft
Consult the AICUZ Land Use Compatibility Guidelines and ALUP Airport Influence Area development restrictions when considering development project applications.

Implementation Measures

I.D.1 Participate in March Operations Assurance Task Force to resolve inconsistencies between local land use regulations and AICUZ & ALUP policies.

I.D.2 Continue to notify March Air Reserve Base of new development project applications and consider their input prior to making land use decisions.

I.D.3 Development on property within the Perris Valley Airport Interim Influence Area 1 shall be subject to prior determination, in consultation with ALUC, and subsequent adoption of appropriate use and development restrictions necessary to minimize the potential for loss of life.

Policy I.E: Seismic Hazards
All development will be required to include adequate protection from damage due to seismic incidents

Implementation Measures

I.E.1 Require geological and geotechnical investigations by State-licensed professionals, in areas with potential for earthquake-induced liquefaction, landsliding, other slope instability, or settlement as part of the environmental and development review process

I.E.2 Require implementation of mitigation measures identified in such investigations mentioned above, prior to the issuance of grading and building permits

I.E.3 Require engineered slopes to be designed to resist seismically induced failure, in accordance with state-of-the art engineering parameters and analytical methods

I.E.4 Require cut and fill transition lots to be over-excavated, and require complete maximum variation of fill depths beneath structures, to mitigate the potential of seismically induced differential settlement.

I.E.5 Adopt and enforce the most current version of the California Building Code (CBC).

I.E.6 Reconstruction of structures intended for human occupancy that have been damaged or destroyed by failed slopes will be prohibited, unless a geological report prepared by a State-licensed geologist shows that remedial measures will improve the unstable slope conditions sufficiently to make the site suitable for redevelopment

I.E.7 Geotechnical studies will be required for all projects to determine the potential for damage from expansive soils, and to define appropriate mitigation measures to address the damage potential that is identified

I.E.8 The City will modify the Liquefaction Susceptibility Map as new data is obtained. Modifications to the map shall be conducted by or under the direction of a professional geologist

Policy I.F: Hazardous Materials
The City will cooperate with the County of Riverside and the Riverside County Fire Department to enforce all rules related to Hazardous Materials generators and handlers

Goal II

Improved response times for emergency service providers (police, fire, medical services)

Policy II.A
The City shall require roadway improvements to expedite quick and safe travel by emergency responders

Implementation Measures

II.A.1 Find alternative traffic calming strategies to speed bumps that will not interfere with emergency responders

II.A.2 Create additional interchanges on I-215

II.A.3 Revise the Zoning Ordinance to require that development application submittals include master plans for backbone infrastructure substantially consistent with the provisions of "Infrastructure Concept Plans" in the *Land Use Element*

II.A.4 Require that access roads be completed prior to development in outlying areas

Policy II.B
Provide adequate emergency facilities to serve existing and future residents

Implementation Measures

II.B.1 Adopt capital facilities fees to fund improvements in public safety facilities and equipment

II.B.2 Revise the capital facilities fee program so that all infrastructure construction and improvements identified as attributable to new development are fully funded

II.B.3 Identify sources of funding for additional infrastructure to serve existing development

Goal III

A citizenry that is well-informed about disaster preparedness and response

Policy III.A
The City will develop and implement an educational and outreach program for disaster preparedness

Policy III.B
The City will develop and maintain a disaster response and evacuation plan

Implementation Measures

III.B.1 Work with local telecommunication service providers to publish emergency evacuation routes in phone directories

III.B.2 Work with local school districts to distribute emergency information at the schools

III.B.3 Work with City service providers such as the waste hauler or water company to put informational inserts about emergency preparedness and evacuation procedures in billing statements or newsletters

III.B.4 Work with the local Chamber of Commerce to distribute evacuation plans for all business owner/operators, employees and patrons

III.B.5 Develop a map indicating locations of hazards that are likely to affect the City