

## 3.0 AFFECTED ENVIRONMENT

An Environmental Initial Study checklist was completed to determine the potential for adverse environmental effects associated with the Proposed Project and to narrow the focus of the environmental review process to those topics that would be potentially significant. It was ultimately determined that all topics would be addressed, including those that clearly would not be significant. However, the level of analysis for each topic is commensurate with the potential for significant impacts. This chapter provides a discussion of the affected environment, or existing conditions, for each topic. It should be noted that on-Reservation environmental effects are included in this discussion for purposes of NEPA compliance (EA). No analyses of on-Reservation effects are required for compliance with the Tribal/State Gaming Compact (TEIR). The Environmental Initial Study Checklist is included as Appendix A.

### 3.1 Aesthetics

The Project Site is located at the site of an existing casino, surrounded by citrus groves, within a rural agricultural valley. The area is considered by most visitors and residents to be aesthetically pleasing. In addition to the existing Pauma Casino, the area contains two large casino and hotel resorts on the nearby Rincon and Pala Reservations. The existing visual conditions in and around the project area were documented using the following steps:

- Identification of the visual character and quality of the site and subregion;
- Determination of the visibility of the site within the subregion;
- Quantification of the primary viewers and determination of the probable sensitivity to change of the subregion;
- Synthesis of the above steps into a visual resource zone summary.

The following describes the individual units starting with the regional scale, the local subregional scale, and the site-specific landscape units.

The identifiable region of the project study area is the North County Inland Mountain Region, which is defined by inland hilly terrain with large valleys and canyons. The region is generally rural in nature with concentrated pockets of small communities. The area topography is dramatically different than the mesas and canyons of the coastal areas of the county. Vegetative cover is generally native with a strong influence from orchard development.

The subregion comprises the viewshed limits of the Pauma Valley, which is a subregion of the San Luis Rey River Valley. The Pauma Valley is a rural agricultural valley. The mountains of the Cleveland National Forest rise to the north while Palomar Mountain, famous for its observatory, is located to the northeast. The viewshed is focused on the river bottom, with its edges defined by the upper ridgelines of mountains on either side of the river. With the mountains as a backdrop, the valley floor is cultivated with citrus groves, ornamental plants, and other agricultural uses interspersed with rural residential development.

The character of the valley is both natural and disturbed. The natural areas are well defined by the river bottom and are characterized by riparian tree growth. The remainder of the valley is predominantly agricultural and rural residential with extensive citrus groves. The higher slopes to the north are dominated by natural vegetation and are free of agriculture or development. Development is concentrated along SR-76, especially around the villages of Pala, Pauma, and Rincon. Large Indian casinos with high-rise hotels have been constructed on the Pala and Rincon Reservations. The existing casino currently consists of a large and noticeable white Sprung structure that is visible from portions of SR-76. Much of the development in the Pauma Valley is screened from view from SR-76 by the citrus groves and ornamental landscaping.

Residential development in the project vicinity is concentrated to the northwest of the Project Site, off of Adams Drive. This area consists of single family residences on large parcels, many of which contain active agricultural orchards.

Key Observation Points were selected from which representative photographs were taken. The Key Observation Points were selected based on the locations from which the most viewers would have the most direct views of the Project Site. It was determined that motorists on SR-76 would represent the most viewers of the Project Site while residential properties in the Adams Drive and Citricado Drive area with views to the southeast towards the Rincon Reservation would look down and over the Project Site. Figure 6 provides a map of the four Key Observation Points (KOPs) while Figures 7 through 10 provide panoramic photographs taken from each identified location.

### **Key Observation Point #1**

KOP #1 is located on SR-76 at the Pauma Creek overcrossing. The existing casino is visible at this location to westbound traffic as the lack of citrus or other tall vegetation within the Pauma Creek floodplain allows for a clear view of the Project Site, which is located approximately 3,000 feet to the northwest. The slopes of Palomar Mountain provide a backdrop to the development on the lower slopes. The steep upper slopes are covered by native vegetation and there is little evidence of development.

### **Key Observation Point #2**

KOP #2 is located on SR-76, approximately one half mile west of Pauma Reservation Road at a point where the road turns to the southeast for eastbound traffic. It is just before this turn where motorists are looking directly towards the Project Site, which is nearly one mile from the KOP. While views of existing development on the Pauma Reservation are blocked by intervening topography, development, and vegetation, this will be the best vantage point for eastbound traffic on SR-76 for views of the proposed hotel tower.



Figure 6  
Key Observation Points



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Figure 7  
View of Project Site from Northwest Bound SR-76 (KOP 1)

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Figure 8  
View of Project Site from Southeast Bound SR-76 (KOP 2)

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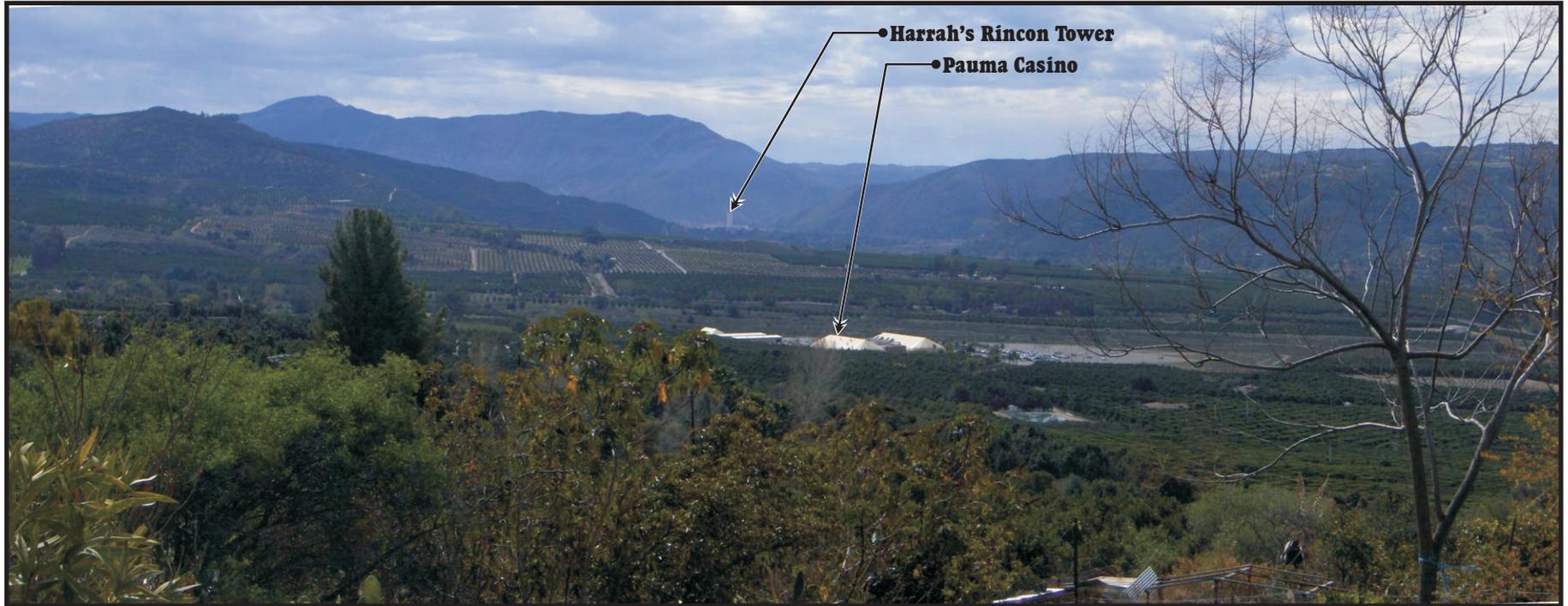


Figure 9  
View of Project Site from Adams Drive(KOP 3)

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Figure10  
View of Project Site from Cole Grade Road (KOP 4)

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### **Key Observation Point #3**

KOP #3 is located at a turnout along Adams Drive, just east of Topa Road. While most views of the Project Site from Adams Drive are obscured by existing development and vegetation, KOP #3 is representative of the views from residences within the hillside community located directly to the northwest of the Pauma Reservation that have valley views to the southeast.

### **Key Observation Point #4**

KOP #4 is located at a turnout approximately two thirds up Cole Grade Road, looking northwest across the Pauma Valley towards the existing casino, approximately 2.5 miles away. Foreground views are of native vegetation, middleground views are of agriculture and rural residential development, while the background is the slopes of the Agua Tibia Mountains.

## **3.2 Agricultural Resources**

As previously noted, analysis of the Proposed Project's effects upon on-Reservation agricultural resources is being conducted for purposes of NEPA compliance. Analysis of on-Reservation effects is not required for compliance with the Compact.

Agricultural resources are often the product of soil types, topography, availability of water, and proximity to markets. The Project Site contains soils that are typical of alluvial fans. Four soil series occur within the project area, including Soboba, Ramona, and Visalia (USDA 1973). The Soboba series consists of excessively drained, very deep stony, loamy sands. Soboba stony, loamy sand, occurring on 9 to 30 percent slopes, is reported from the project area (USDA 1973).

Soils in the Ramona series consist of well-drained, very deep, sandy loams that have a sandy clay subsoil. These soils are formed in granitic alluvium. Ramona sandy loam, occurring on 2 to 5 percent slopes, is reported from the project area (USDA 1973). Soils in the Visalia series consist of moderately well-drained, very deep, sandy loams. These soils are found on alluvial fans and floodplains. Visalia sandy loam, occurring on 2 to 5 percent slopes, is reported from the project area (USDA 1973).

Agriculture is a vibrant component of the economy in San Diego County. The total reported value for all agricultural commodities produced in the County for 2005 was \$1,531,541,236 (County of San Diego, 2005). This was the highest crop value ever reported for the County, representing a 5 percent increase from 2004. The area dedicated to agriculture in San Diego County, at 273,176 acres, also grew by 3 percent. In 2005, avocados were harvested from 26,326 acres in the County and had a total value of \$251,452,135, and citrus was harvested from 13,803 acres with a value of \$38,364,492 (County of San Diego, 2005).

The Pauma Tribe began cultivating citrus on the Reservation's 230-acre Pauma Tract in 1985 and, in phases, developed about half of the tract with citrus and a small amount of avocados. The remaining portion of the Reservation contains Tribal housing, government offices, and the

existing casino. At present approximately 65 acres of lemon, orange, and avocado groves are cultivated on the Reservation.

The profit from the citrus and avocado groves has been variable over the years and has been of nominal benefit to the Tribe. The reliability of income from agriculture has recently been threatened in several ways. Fruit flies damaged considerable citrus in 2004, and a new pest, the avocado lace bug (*Psudacysta perseae*) was recently found to have infested avocados with 134 square miles of the County. In addition, freezing temperatures in early 2007 inflicted heavy damage on citrus, avocados, and other crops throughout the County. However, in large part because the Tribe wishes to remain in the agricultural production business, it purchased adjacent land to the west between the Reservation's western boundary and SR-76. This property contains approximately 45 acres of citrus orchards. Nearby off-Reservation citrus and avocado orchards are also located on the north side of Pauma Reservation Road, on the north side of the Reservation's northern border, and on the south side of Pauma Creek.

The California Department of Conservation has mapped existing farmland in San Diego County (California Department of Conservation, 2000). The mapped categories of farmland are as follows:

- *Prime Farmland.* Land with the best combination of physical and chemical characteristics able to sustain long term production of agricultural crops. This land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
- *Farmland of Statewide Importance.* Land with a good combination of physical and chemical characteristics for agricultural production, having only minor shortcomings, such as less ability to store soil moisture, compared to prime farmland. This land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
- *Unique Farmland.* Land used for production of the state's major crops on soils not qualifying for prime or statewide importance. This land is usually irrigated, but may include nonirrigated fruits and vegetables as found in some climatic zones in California.
- *Farmland of Local Importance.* Land that meets all the characteristics of prime and statewide, with the exception of irrigation. Farmlands not covered by the above categories but are of significant economic importance to the county. They have a history of good production for locally adapted crops. The soils are grouped in types that are suitable for truck crops (such as tomatoes, strawberries, cucumbers, potatoes, celery, squash, romaine lettuce, and cauliflower) and soils suited for orchard crops (avocados and citrus).
- *Grazing Land.* Land on which the existing vegetation is suitable for grazing of livestock. The minimum mapping unit for this category is 40 acres.

- *Urban and Built-Up Land.* Residential land with a density of at least six units per ten-acre parcel, as well as land used for industrial and commercial purposes, golf courses, landfills, airports, sewage treatment, and water control structures.
- *Other Land.* Land which does not meet the criteria of any other category. Common examples include low-density rural developments, wetlands, dense brush and timberlands, gravel pits, and small water bodies.
- *Water.* Perennial water bodies with an extent of at least 40 acres.

Of the categories of farmland described above, the portion of the Reservation under cultivation with citrus and orchard, including the area identified for construction of the Proposed Project, is identified on the San Diego County Important Farmland map as Unique Farmland.

The Farmland Preservation Policy Act (FPPA) (7 U.S.C. 4201 et seq) was passed to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to help ensure that Federal programs are administered in a manner that is compatible with State, local government and private programs and policies protecting farmland. The Act instructs the Department of Agriculture, in cooperation with other departments, agencies, independent commissions and other units of the Federal government, to develop criteria for identifying the effects of Federal programs on the conversion of farmland to nonagricultural uses.

Pursuant to the FPPA, the Farmland Conversion Impact Rating Form (Form AD 1006) is used to determine the level of consideration and protection that farmland should receive. Coordination with the Natural Resource Conservation Service (NRCS) is necessary in order to complete Form AD 1006. The NRCS assigns up to 100 points to a site for its relative value as farmland, and up to 160 points are assigned for a site assessment, for a combined score of up to 260 points. Sites receiving a total score of less than 160 need not be given further consideration for protection and no additional sites need to be evaluated. Sites receiving scores totaling 160 or more need to be given increasingly higher levels of consideration for protection.

Form AD-1006 was submitted to the U. S. Department of Agriculture's (USDA) Natural Resources Conservation Service and was completed by Ms. Cori Calvert on June 5, 2007 and is included in Appendix B.

### **3.3 Air Quality**

#### **Climate and Meteorology**

The project is located in the San Diego Air Basin (SDAB). The boundaries of the air basin are coincident with those of the county. The climate of San Diego County is profoundly influenced by the Pacific Ocean and its semi-permanent high pressure systems that result in dry, warm summers and mild, occasionally wet winters. One of the main determinants of the climatology is

a semipermanent high-pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high-pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure storms are brought into the region, causing widespread precipitation. In San Diego County, the months of heaviest precipitation are November through April, averaging about 9-14 inches annually. The mean temperature is 62.2 degrees Fahrenheit (F), and the mean maximum and minimum temperatures are 75.7 degrees F and 48.5 degrees F, respectively.

Two climatic phenomena contribute to air pollution problems in San Diego County. Subsidence inversions occur in the summer and the base of the inversion, at elevations between 1,000 and 3,000 feet, forms a "lid" to trap pollutants, which have been generated in the coastal plain and blown inland by the onshore winds. Thus, the highest pollution levels are often found in the western mountain slope communities, such as Alpine, Ramona and Descanso. The Project Site is located west of the mountain slope communities, and does not experience the higher pollution levels associated with inversion conditions.

The normal wind pattern is moderate to strong onshore winds during the day and weak offshore winds at night. The Santa Ana wind condition is a reversal of the normal winds, and offshore winds blow pollutants out to the ocean. A strong Santa Ana will produce clear days. However, a weak Santa Ana, and conditions at the start and end of a Santa Ana wind period, will transport air pollutants from Los Angeles and Orange Counties out to sea and southward, then back to shore in San Diego County. This phenomenon will produce higher pollutant concentrations in the coastal communities.

### **Regulatory Standards**

The Federal Clean Air Act (42 U.S.C. §7401) requires the adoption of National Ambient Air Quality Standards (NAAQS) to protect the public health, safety, and welfare from known or anticipated effects of air pollution. Current standards are set for sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter equal to or less than 10 microns in size (PM<sub>10</sub>), fine particulate matter equal to or less than 2.5 microns in size (PM<sub>2.5</sub>), and lead (Pb). These pollutants are called criteria pollutants. The State of California Air Resources Board (ARB) has established standards for the federal criteria pollutants that are generally more restrictive than the NAAQS, and additional standards for atmospheric sulfates, vinyl chloride, hydrogen sulfide, and visibility. Federal and state standards are shown in Table 3.

**Table 3**  
**California and National Ambient Air Quality Standards**

Pollutant	Averaging Time	NAAQS <sup>1</sup>		CAAQS <sup>2</sup>
		Primary <sup>3</sup>	Secondary <sup>4</sup>	Concentration <sup>5</sup>
Ozone (O <sub>3</sub> ) <sup>6</sup>	1-Hour	-	Same as Primary Standard	0.09 ppm (180 µg/m <sup>3</sup> )
	8-Hour	0.08 ppm (157 µg/m <sup>3</sup> )		0.070 ppm (137 µg/m <sup>3</sup> ) <sup>9</sup>
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m <sup>3</sup> )	None	9.0 ppm (10 mg/m <sup>3</sup> )
	1-Hour	35 ppm (40 mg/m <sup>3</sup> )		20 ppm (23 mg/m <sup>3</sup> )
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Average	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	0.030 ppm (56 µg/m <sup>3</sup> ) <sup>10</sup>
	1-Hour	-		0.25 0.18 ppm (470 338 µg/m <sup>3</sup> ) <sup>10</sup>
Sulfur Dioxide (SO <sub>2</sub> )	Annual Average	0.03 ppm (80 µg/m <sup>3</sup> )	-	-
	24-Hour	0.14 ppm (365 µg/m <sup>3</sup> )	-	0.04 ppm (105 µg/m <sup>3</sup> )
	3-Hour	-	0.5 ppm (1300 µg/m <sup>3</sup> )	-
	1-Hour	-	-	0.25 ppm (655 µg/m <sup>3</sup> )
Suspended Particulate Matter (PM <sub>10</sub> ) <sup>7</sup>	24-Hour	150 µg/m <sup>3</sup>	Same as Primary Standard	50 µg/m <sup>3</sup>
	Annual Arithmetic Mean	Revoked		20 µg/m <sup>3</sup>
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>8</sup>	24-Hour	35 µg/m <sup>3</sup>	Same as Primary Standard	-
	Annual Arithmetic Mean	15 µg/m <sup>3</sup>		12 µg/m <sup>3</sup>
Lead (Pb)	30-Day Average	-	-	1.5 µg/m <sup>3</sup>
	Calendar Quarter	1.5 µg/m <sup>3</sup>	Same as Primary Standard	-
Hydrogen Sulfide (H <sub>2</sub> S)	1-Hour	No Federal Standards		0.03 ppm (42 µg/m <sup>3</sup> )
Sulfates (SO <sub>4</sub> )	24-Hour			25 µg/m <sup>3</sup>
Visibility Reducing Particles	8-Hour (10 am to 6 pm, Pacific Standard Time)			In sufficient amount to produce an extinction coefficient of 0.23 per km due to particles when the relative humidity is less than 70 percent.
Vinyl chloride <sup>9</sup>	24 Hour			0.01 ppm (26 µg/m <sup>3</sup> )

<sup>1</sup> NAAQS (other than O<sub>3</sub>, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O<sub>3</sub> standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM<sub>10</sub>, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For PM<sub>2.5</sub>, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the USEPA for further clarification and current federal policies.

<sup>2</sup> California Ambient Air Quality Standards for O<sub>3</sub>, CO (except Lake Tahoe), SO<sub>2</sub> (1- and 24-hour), NO<sub>2</sub>, PM<sub>10</sub>, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equalled or exceeded.

<sup>3</sup> National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

<sup>4</sup> National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

<sup>5</sup> Concentration expressed first in units in which it was promulgated. Ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.

<sup>6</sup> On June 15, 2005 the 1-hour ozone standard was revoked for all areas except the 8-hour ozone nonattainment Early Action Compact Areas (those areas do not yet have an effective date for their 8-hour designations). Additional information on federal ozone standards is available at <http://www.epa.gov/oar/oaqps/greenbk/index.html>.

<sup>7</sup> Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the USEPA revoked the annual PM<sub>10</sub> standard on December 17, 2006.

<sup>8</sup> Effective, December 17, 2006, the USEPA lowered the PM<sub>2.5</sub> 24-hour standard from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>.

<sup>9</sup> The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

<sup>10</sup> The Nitrogen Dioxide ambient air quality standard was amended on February 22, 2007, to lower the 1-hr standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes become effective after regulatory changes are submitted and approved by the Office of Administrative Law, expected later this year.

ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter; mg/m<sup>3</sup> = milligrams per cubic meter  
Source: USEPA 2007, CARB 2007.

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## Clean Air Act – General Conformity

The CAA requires each state to develop, adopt, and implement a State Implementation Plan (SIP) to achieve, maintain, and enforce federal air quality standards throughout the state. SIP documents are developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated. Local governments and air pollution control districts have had the primary responsibility for developing and adopting the regional elements of the California SIP.

The 1990 Amendments to CAA Section 176 require the USEPA to promulgate rules to ensure that federal actions conform to the appropriate SIP. These rules, known together as the General Conformity Rule (40 CFR §§ 51.850-.860 and 40 CFR §§ 93.150-.160) require any federal agency responsible for an action in an area designated as nonattainment or maintenance to determine that the action conforms to the applicable SIP or that the action is exempt from the General Conformity Rule requirements. This means that federally supported or funded activities will not (1) cause or contribute to any new air quality standard violation, (2) increase the frequency or severity of any existing standard violation, or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone. Actions would conform to a SIP and be exempt from a conformity determination if an applicability analysis shows that the total direct and indirect emissions from the project construction and operation activities would be less than specified emission rate thresholds, known as *de minimis* limits, and that the emissions would be less than 10 percent of the area emission budget.

## Existing Air Quality

Specific geographic areas are classified as either “attainment” or “nonattainment” areas for each pollutant based on the comparison of measured data with federal and state standards. If an area is redesignated from nonattainment to attainment, the Clean Air Act (CAA) requires a revision to the SIP, called a maintenance plan, to demonstrate how the air quality standard will be maintained for at least 10 years.

The SDAB currently meets the federal standards for all criteria pollutants except O<sub>3</sub> and meets state standards for all criteria pollutants except O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. On April 15, 2004, the USEPA issued the initial designations for the 8-hour O<sub>3</sub> standard, and the SDAB was classified as “basic” nonattainment. Basic is the least severe of the six degrees of O<sub>3</sub> nonattainment. The SDAPCD must submit an air quality plan to the USEPA in 2007; the plan must demonstrate how the 8-hour O<sub>3</sub> standard will be obtained by 2009 (SDAPCD 2004). The SDAB is currently classified as a state “serious” O<sub>3</sub> nonattainment area and a state nonattainment area for PM<sub>2.5</sub> and PM<sub>10</sub>. The SDAB currently falls under a federal “maintenance plan” for CO, following a 1998 redesignation as a CO attainment area.

Ambient air pollutant concentrations in the SDAB are measured at 10 air quality monitoring stations operated by the San Diego Air Pollution Control District (SDAPCD). The closest SDAPCD air quality monitoring station in the SDAB is the Escondido - East Valley Parkway monitoring station, located at 600 East Valley Parkway, Escondido, approximately 18 miles south of the Pauma Reservation. The station monitors O<sub>3</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>, and NO<sub>2</sub>. No other

monitoring stations are located near enough to the project area to be used to characterize other criteria pollutants. Table 4 summarizes the excesses of standards and the highest pollutant levels recorded at this station for the years 2002 through 2006.

### **Local Sources of Pollutants**

Local pollutant sources include the exhaust from vehicles traveling along SR-76 and local roads and particulates from vehicle travel on unpaved roads and local agricultural activities. Minor pollutant sources include exhaust from agricultural machinery, maintenance vehicles, and small gasoline engines such as those that are used for mowing grass and other maintenance activities.

### **Sensitive Receptors**

Air quality regulators typically define sensitive receptors as schools (Preschool-12th Grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. However, for the purposes of environmental impact analysis in the County of San Diego the definition of a sensitive receptor also includes residents (County of San Diego 2007).

The closest off-Reservation sensitive receptors to the Project Site are two residences on Adams Drive, approximately 450 feet and 550 feet from northeast of the intersection of Adams Drive and Pauma Reservation Road.

## **3.4 Biological Resources**

The effects of the Proposed Project on on-Reservation biological resources are analyzed for purposes of NEPA compliance. No impacts to off-Reservation biological resources would result.

A record search of the California Natural Diversity Data Base (CNDDDB) and biological resources survey of the Project Site was conducted (Tierra Environmental Services, 2007a). The biological resources technical report is included as Appendix C. Vegetated portions of the project area consist mostly of agricultural areas and disturbed areas supporting sparsely distributed native and non-native vegetation.

Three vegetation communities were detected on site, including mule-fat scrub, freshwater marsh, and disturbed habitat. Agricultural areas, ornamental areas, and developed areas also occur within the project area. Figure 11 provides a map of the developed areas and vegetation communities on the Project Site. A complete list of all plant species detected on site is included in Table 5.

**Table 4. Ambient Air Quality Summary, Escondido-East Valley Parkway Monitoring Station**

Pollutant	Averaging Time	California Air Quality Standards	Federal Primary Standards	Maximum Concentrations <sup>(1)</sup>					Number of Days Exceeding Federal Standard <sup>(2)</sup>					Number of Days Exceeding State Standard <sup>(2)</sup>				
				2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
Ozone	1 hour	0.09 ppm	0.12 ppm <sup>(3)</sup>	0.100	0.105	0.099	0.095	0.108	0	0	0	0	0	2	3	2	1	3
	8 hour	0.070 ppm <sup>(4)</sup>	0.08 ppm	0.081	0.083	0.086	0.079	0.096	0	0	2	0	2	NA	NA	NA	NA	NA
Carbon Monoxide	1 hour	20 ppm	35 ppm	8.5	12.7 <sup>(5)</sup>	5.3	5.9	-	0	0	0	0	-	0	0	0	0	-
	8 hours	9 ppm	9 ppm	3.85	10.6 <sup>(5)</sup>	3.61	3.10	3.61	0	1	0	0	0	0	1	0	0	0
Nitrogen Dioxide	1 hour	0.25 ppm	None	0.084	0.135	0.080	0.076	0.071	NA	NA	NA	NA	NA	0	0	0	0	0
	Annual	none	0.053 ppm	0.021	0.020	0.018	0.017	0.017	0	0	0	0	0	NA	NA	NA	NA	NA
PM <sub>10</sub> <sup>(7)</sup>	24 hours	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	51	179 <sup>(6)</sup>	57	42	43	0	3.3	0	0	-	0	30.7	6.1	0	-
	Annual	none	50 µg/m <sup>3</sup>	27.1	31.6	27.5	23.9	23	0	0	0	0	0	NA	NA	NA	NA	-
	Annual	30 µg/m <sup>3</sup>	None	25.1	32.7	27.3	23.9	-	NA	NA	NA	NA	-	1	1	1	1	-
PM <sub>2.5</sub>	24 hours	none	65 µg/m <sup>3</sup>	53.6	69.2 <sup>(8)</sup>	67.3	43.1	31.8	0	1	1	0	0	NA	NA	NA	NA	NA
	Annual	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	16.0	14.2	14.1	-	-	1	1	1	-	-	-	1	1	-	-

“-” = data not available

“NA” = not applicable.

<sup>(1)</sup> Concentration units for O<sub>3</sub>, CO, and NO<sub>2</sub> are in parts per million (ppm). Concentration units for PM<sub>10</sub> are in micrograms per cubic meter (µg/m<sup>3</sup>).

<sup>(2)</sup> For annual standards, a value of 1 indicates that the standard has been exceeded.

<sup>(3)</sup> The federal 1-hour O<sub>3</sub> standard was revoked for most areas of the United States, including all of California on June 15, 2005.

<sup>(4)</sup> Effective May 17, 2006

<sup>(5)</sup> Due to wildfires throughout San Diego County, CO levels in 2003 were abnormally high. Maximum CO 1-hour and 8-hour concentrations without the wildfire days included were 8.9 ppm and 3.9 ppm, respectively.

<sup>(6)</sup> Due to wildfires throughout San Diego County, PM<sub>10</sub> levels in 2003 were abnormally high. The maximum PM<sub>10</sub> concentration without the wildfire included was 58 µg/m<sup>3</sup>.

<sup>(7)</sup> PM<sub>10</sub> data are recorded separately for federal and state purposes because the USEPA and California methods are slightly different. PM<sub>10</sub> is measured every 6 days; the number of days exceeding standards is projected to a 365-day base from the measurements..

<sup>(8)</sup> Due to wildfires throughout San Diego County, PM<sub>2.5</sub> levels in 2003 were abnormally high. The maximum PM<sub>2.5</sub> concentration without the wildfire included was 38 µg/m<sup>3</sup>.

Source: CARB 2007b; SDAPCD 2006.

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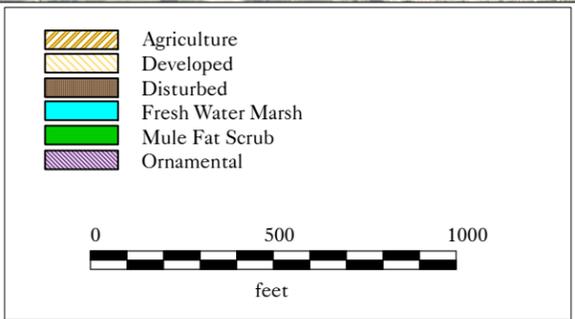


Figure 11  
Biological Resources Map



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**Table 5. Plant Species Detected Within the Proposed Project Area**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>
<b>Dicots</b>	
AIZOACEAE Fig-Marigold Family <i>Malephora crocea</i>	croceum iceplant
ANACARDIACEAE Sumac Family <i>Malosma laurina</i>	laurel sumac
ASTERACEAE Sunflower Family <i>Ambrosia acanthicarpa</i> <i>Artemisia californica</i> <i>Baccharis salicifolia</i> <i>Centaurea melitensis</i> <i>Dimorphoteca</i> sp. <i>Heterotheca grandiflora</i> <i>Sonchus asper</i>	annual bur-sage coastal sagebrush mule-fat totalote African daisy telegraph weed prickly sow-thistle
BORAGINACEAE Borage Family <i>Amsinckia menziesii</i> var. <i>menziesii</i>	rancher's fiddleneck
BRASSICACEAE Mustard Family <i>Hirschfeldia incana</i> <i>Lobularia maritima</i>	short-pod mustard sweet alyssum
CACTACEAE Cactus Family <i>Opuntia littoralis</i>	coast prickly-pear
CHENOPODIACEAE Goosefoot Family <i>Chenopodium album</i> <i>Salsola tragus</i>	lamb's quarters Russian thistle
CUCURBITACEAE Gourd Family <i>Marah macrocarpus</i>	wild cucumber
EUPHORBIACEAE Spurge Family <i>Chamaesyce</i> sp. <i>Croton californica</i> <i>Ricinus communis</i>	rattlesnake spurge California croton castor bean
FABACEAE Pea Family <i>Acacia pycnantha</i> <i>Lotus scoparius</i> <i>Melilotus</i> sp.	golden wattle deerweed sweetclover
GERANIACEAE Geranium Family <i>Erodium cicutarium</i> <i>Erodium moschatum</i>	red-stem filaree white-stem filaree

HYDROPHYLLACEAE Waterleaf Family

*Phacelia distans* phacelia

LAMIACEAE Mint Family

*Marrubium vulgare* horehound

MALVACEAE Mallow Family

*Malva parviflora* cheeseweed

ONAGRACEAE Evening Primrose Family

*Camissonia claviformis* evening-primrose

*Camissonia graciliflora* hill sun cup

POLYGONACEAE Buckwheat Family

*Erigonum fasciculatum* California buckwheat

*Polygonum arenastrum* common knotweed

PRIMULACEAE Primrose Family

*Anagallis arvensis* scarlet pimpernel

RUTACEAE Rue Family

*Citrus* sp. lemon

*Citrus* sp. orange

SALICACEAE Willow Family

*Populus fremontii* ssp. *fremontii* western cottonwood

*Salix laevigata* red willow

SCROPHULARIACEAE Figwort Family

*Veronica persica* Persian speedwell

SOLANACEAE Nightshade Family

*Datura wrightii* jimson weed

*Nicotiana glauca* tree tobacco

TAMARICACEAE Tamarisk Family

*Tamarix ramosissima* salt cedar

URTICACEAE Nettle Family

*Urtica urens* dwarf nettle

**Monocots**

ARECACEAE Palm Family

*Syagrus romanzoffiana* queen palm

POACEAE Grass Family

*Bromus madritensis* foxtail chess-

*Cynodon dactylon* Bermuda grass

*Hordeum murinum* ssp. *leporinum* hare barley

*Poa annua* annual bluegrass

TYPHACEAE Cattail Family

*Typha latifolia* broad-leaf cattail

**Mule-fat Scrub** - Mule-fat scrub is a tall herbaceous riparian scrub strongly dominated by mule-fat that is maintained by frequent flooding. Other plant species characteristic of this habitat include Barbara sedge and willow. The mule-fat scrub on site consisted of stands of mule-fat with a few cottonwood and arroyo willow saplings.

**Freshwater Marsh** - Freshwater marsh typically includes dense canopies of willow sedge, yellow nutsedge, spike sedges, cattails, and bulrush. The freshwater marsh observed on the Project Site consists of a small stand of broad-leaf cattail.

**Disturbed** - Disturbed habitat describes an area that previously supported native upland habitat but due to constant disturbances currently supports sparsely distributed native and non-native weedy plant species. Plants detected on site included telegraph weed, deerweed, short-pod mustard, California buckwheat, tocalote, tree tobacco, Bermuda grass, and coastal sagebrush.

**Agriculture** - Agricultural areas occurring on site support orange and lemon groves. Ornamental areas also occur on site. Ornamental describes areas that have been landscaped by the Tribe and/or previous property owners and supports non-native, cultivated vegetation. Plant species detected on site included golden wattle, queen palm, sweet alyssum, African daisy, and iceplant.

**Developed** - Developed areas on the Project Site represent all areas that have been paved for parking lots and driveways or that are covered with structures. All developed areas are associated with the existing Casino Pauma.

Few animals were detected on site, presumably, due to the level of human disturbance and resultant lack of native habitat. Wildlife species observed on or above the Project Site included turkey vulture, red-shouldered hawk, red-tailed hawk, Nuttall's woodpecker, Hutton's vireo, phainopepla, white-crowned sparrow, and dark-eyed junco. Audubon's cottontail, California ground squirrel, side-blotched lizard, and western fence lizard were also detected on site. A complete list of all wildlife species detected is included in Table 6.

The biological resources survey included a search for sensitive plant and animal species known to occur within or near the Pauma Valley. Plant and animal species are considered sensitive if they have been listed as such by federal resource agencies. The California Department of Fish and Game (CDFG) publishes the CNDDDB RareFind, a computerized inventory of information on the location and condition of California's rare, threatened, endangered, and sensitive plants, animals, and natural communities (CDFG 2006). Federally endangered Stephen's kangaroo rat, arroyo toad, Laguna Mountain skipper, and mountain yellow-legged frog were reported as potentially occurring on site.

**Table 6. Animals Detected Within the Proposed Project Area**

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>
<b>Birds</b>	
<i>Cathartes aura</i>	turkey vulture
<i>Buteo lineatus</i>	red-shouldered hawk
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Zenaida macroura</i>	mourning dove
<i>Calypte anna</i>	Anna's hummingbird
<i>Picoides nuttalli</i>	Nuttall's woodpecker
<i>Sayornis nigricans</i>	black phoebe
<i>Tyrannus vociferans</i>	Cassin's kingbird
<i>Vireo huttoni</i>	Hutton's vireo
<i>Aphelocoma californica</i>	western scrub-jay
<i>Corvus brachyrhyncos</i>	American crow
<i>Psaltriparus minimus</i>	bushtit
<i>Thryomanes beweckii</i>	Bewick's wren
<i>Chamaea fasciata</i>	wrentit
<i>Mimus polyglottos</i>	northern mockingbird
<i>Phainopepla nitens</i>	phainopepla
<i>Pipilo maculatus</i>	spotted towhee
<i>Pipilo crissalis</i>	California towhee
<i>Zonotrichia leucophrys</i>	white-crowned sparrow
<i>Melospiza melodia</i>	song sparrow
<i>Junco hyemalis</i>	dark-eyed junco
<i>Carpodacus mexicanus</i>	house finch
<i>Passer domesticus</i>	house sparrow
<i>Carduelis tristis</i>	American goldfinch
<b>Mammals</b>	
<i>Sylvilagus audubonii</i>	Audubon's cottontail
<i>Spermophilus beecheyi</i>	California ground squirrel
<b>Reptiles</b>	
<i>Uta stansburiana</i>	side-blotched lizard
<i>Sceloporus occidentalis</i>	western fence lizard

In addition to the CNDDDB search, the following species were identified through the review of threatened or endangered species reported as potentially occurring on the Reservation by the USFWS: San Diego thornmint, San Diego ambrosia, Del Mar manzanita, Nevin's barberry, San Bernardino bluegrass, Quino checkerspot butterfly, Laguna Mountains skipper, arroyo toad, California red-legged frog, mountain plover, southwestern willow flycatcher, coastal California gnatcatcher, least Bell's vireo, and Stephen's kangaroo rat.

Of all the species listed, the project area supports potentially appropriate habitat for only two; the federally endangered Stephen's kangaroo rat and federally threatened San Diego ambrosia. The ecology and potential for occurrence on site for these species is discussed below. The ecology and potential for occurrence for all species reported as potentially occurring on site are summarized in Table 7.

**Table 7. Threatened, Endangered or Rare Species Potentially Occurring on the Pauma Indian Reservation**

Species	Status	Habitat	Presence/Description
<b>Plants</b>			
San Diego thornmint ( <i>Acanthomintha ilicifolia</i> )	federally threatened	Grassy openings in coastal sage scrub or chaparral; associated with vernal pools and clay depressions on mesas.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
San Diego ambrosia ( <i>Ambrosia pumila</i> )	federally endangered	Chaparral, coastal scrub, valley and foothill grassland, non-native grassland, and vernal pools.	Not detected. Low potential for occurrence; marginal habitat occurs on site.
Del Mar manzanita ( <i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> )	federally endangered	Sandy mesas and bluffs in southern maritime chaparral.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
Nevin's barberry ( <i>Berberis nevini</i> )	federally endangered	Sandy or gravelly chaparral, cismontane woodland, coastal scrub and riparian scrub.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
San Bernardino bluegrass ( <i>Poa atropurpurea</i> )	federally endangered	Meadows and mesic seeps.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
<b>Invertebrates</b>			
Quino checkerspot butterfly ( <i>Euphydryas editha quino</i> )	federally endangered	Foothills and coastal mesas; associated with larval hostplants dot-seeded plantain ( <i>Plantago erecta</i> ) and Chinese houses ( <i>Collinsia</i> sp.).	Not detected. Low potential for occurrence; appropriate habitat and topography does not occur on site.
Laguna Mountains skipper ( <i>Pyrgus ruralis lagunae</i> )	federally endangered	Montane meadows.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
<b>Amphibians</b>			
Arroyo toad ( <i>Bufo californicus</i> )	federally endangered	Rivers with slow-moving water and shallow, gravelly pools adjacent to gravelly terraces.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
California red-legged frog ( <i>Rana aurora draytonii</i> )	federally threatened	Permanent water bodies of virtually still or slow-moving fresh water.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.

Species	Status	Habitat	Presence/Description
Mountain yellow-legged frog ( <i>Rana muscosa</i> )	federally endangered	Pools, undisturbed lake shores, and streams with open canopies and sloping gravely banks.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
<b>Birds</b>			
Mountain plover ( <i>Charadrius montanus</i> )	federally proposed threatened	Bare plowed fields, sagebrush, and short-grass prairie habitat.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
Southwestern willow flycatcher ( <i>Empidonax traillii extimus</i> )	federally endangered	Riparian habitats.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
Coastal California gnatcatcher ( <i>Poliptila californica californica</i> )	federally threatened	Coastal sage scrub.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
Least Bell's vireo ( <i>Vireo bellii pusillus</i> )	federally endangered	Dense willow woodland/scrub.	Not detected. Low potential for occurrence; appropriate habitat and soils do not occur on site.
<b>Mammals</b>			
Stephen's kangaroo rat ( <i>Dipodomys stephensi</i> )	federally endangered	Open grasslands; areas with sparse (less than 30 percent) shrub cover.	Not detected. Low potential for occurrence; rodent burrows were not detected on site.

<sup>1</sup> Status taken from California Department of Fish and Game (2004)

<sup>2</sup> Habitat taken from Hickman (1993) and CNPS (2001) for plants, Ehrlich (1988) and Unitt (1984) for birds, USFWS (1998) for invertebrates.

### **San Diego Ambrosia**

Federal status: Endangered

San Diego ambrosia is a member of the sunflower family. This perennial herb expands by rhizomes and grows in height to approximately two feet. The stems are green to straw colored, with short, dense hairs. The leaves of this plant are softly gray-white and hairy. The flowers of San Diego ambrosia grow in staminate and pistillate heads that bloom between May and September. This species occurs in chaparral, coastal scrub, valley and foothill grassland, and vernal pools. It is also known to occur in disturbed sites. Many occurrences of this plant have been extirpated in San Diego, where it is threatened by continued development (CNPS 2001).

San Diego ambrosia was not detected on site. Although the biological survey was conducted during a time of year when this plant species would not have been in flower, identifiable remnants of last years population would be expected to remain on site if this species occurred on site. Disturbed habitat on site provides marginal habitat for this species. San Diego ambrosia is not expected to occur on site.

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### **Stephens' Kangaroo Rat**

Federal Status: Endangered

The Stephens' kangaroo rat (SKR) is a medium sized kangaroo rat with light brown back and white underside, five toes on the hind feet, and a striped tail that is mostly dark with white lateral stripes of a irregular width and indistinct borders (Jameson and Peeters 1988).

All remaining populations of the species are associated with sage scrubs (sparsely) dominated by California buckwheat, California sagebrush, or brittlebush (U. S. Fish and Wildlife Service 1997) or non-native grasslands with native annuals (Hogan 1981) or an herbaceous land cover dominated by red-stem filaree or long-beak filaree. Some populations occur in sparse Riversidian sage scrub with aerial cover less than 30 percent. Soil type and topography occupied are variable; however, the Stephens' kangaroo rat is typically found on flat grasslands, gently rolling hills, and/or low to moderately steep slopes adjacent to occupied grasslands. Long linear dirt roads at the base of hills serve as important refuges and movement corridors that have allowed many populations to persist (O'Farrel and Uptain 1989) and may also serve as migration corridors.

Stephen's kangaroo rat was not detected on site. Although disturbed areas provide potentially appropriate habitat for this species, the project area supports very few rodent burrows. Thus, it is not expected that Stephen's kangaroo rat would occur on site.

### **Sensitive Habitats**

Sensitive habitats include those communities considered unique because they host many species of plants and animals that are rare or substantially depleted. Mule-fat scrub and coastal freshwater marsh are typically considered sensitive wetland habitats by the ACOE. This agency uses three indicators of wetlands when making wetland determinations. Hydrophytic vegetation, as well as wetland soils and hydrology must be present to indicate ACOE wetland habitat.

The southwestern portion of the project area supports a small, east-trending ditch. This ditch, which conveys runoff from the parking lot to two detention basins below the parking lot, has banks ranging from approximately 2 to 6 inches in depth and 3 to 5 feet in width. This ditch supports wetland vegetation is lined with gravel. According to the USGS 7.5' Boucher Hill quadrangle, a portion of an unnamed blue-line drainage occurs immediately south and downslope of the southwestern portion of the project area. Flows from the ditch are conveyed downslope via two additional concrete ditches and then into sediment detention basins that can ultimately overflow into this unnamed blue-line drainage.

Because the mule-fat scrub occurs in association with a ditch created to convey flows into an unnamed drainage it is not in this case considered to be a wetland habitat. Furthermore, this ditch would not be under jurisdiction of the U.S. Army Corps of Engineers (ACOE). Similarly, freshwater marsh occurs in an area in which runoff from surrounding orchards collects. Thus, mule-fat scrub and freshwater marsh do not meet the requirements necessary to be considered wetland habitats and are not considered sensitive wetland habitats.

A Memorandum from the U.S. EPA and the ACOE dated June 5, 2007 to EPA Regions and ACOE Districts released in response to the U.S. Supreme Court's decision in the *Rapanos v. United States* and *Carabell v. United States* cases regarding jurisdiction over wetlands states that these agencies should not assert jurisdiction over "swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) and ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water."

### **3.5 Cultural Resources**

For NEPA compliance purposes and to evaluate the potential for off-Reservation impacts to cultural resources, a cultural resources survey of the Proposed Project Site was conducted by archeological staff at Tierra Environmental Services (Tierra Environmental Services 2007b). The following provides background information and summarizes the cultural resources survey report, which is attached as Appendix D.

#### **Cultural History**

##### ***Paleoindian Period***

The earliest prehistoric sites in southern California are identified as belonging to the Paleoindian period, which has locally been termed the San Dieguito complex/tradition. The Paleoindian period is thought to have occurred between 12,000 years ago, or earlier, and 8,000 years ago. The San Dieguito complex was a hunting economy with limited use of seed grinding technology, with a focus on large mammals and a relatively high mobility which may be related to following large game.

##### ***Early Archaic Period***

The Early Archaic period still relied on hunting but was characterized by an increased focus on the use of grinding and seed processing technology. At coastal sites dated between approximately 8,000 and 1,500 years ago, the increased use of groundstone artifacts and atlatl dart points, along with a mixed core-based tool assemblage, reflect a more diversified reliance on plant and animal resources. Variations of the Pinto and Elko series projectile points, large bifaces, manos and portable metates, core tools, and heavy use of marine invertebrates in coastal areas are characteristic of this period, commonly referred to as the "La Jolla Period."

During the 1940s and 1950s, a number of Archaic Period sites in inland northern San Diego County were found to exhibit an assemblage different from the coastal Archaic material (True 1958, 1980; True and Beemer 1982). These sites were typically on small saddles and hills overlooking stream drainages and were characterized mainly by surface artifact scatters of basin and slab metates, manos, some scraper planes, debitage and rarely discoidals. D.L. True originally called this material "Old Complex" sites, but later renamed it the "Pauma Complex" as the most classic examples of these sites were in the Pauma Valley (True 1958; True and Beemer 1982). The nature of the relationship between the La Jolla and Pauma materials has yet to be

resolved and remains an important issue in southern California prehistory. But given that the distance between the two very different coastal and inland environments is only a few dozen miles and that the sites appear to be contemporaneous, it seems most rational that the different materials are seasonal manifestations of a single cultural group using coastal and inland resources.

### ***Late Archaic or Late Prehistoric Period***

Around 2,000 years ago dramatic cultural changes occurred, including an intrusion of Shoshonean-speakers into the northern part of San Diego County. The Late Prehistoric period in San Diego County is recognized archaeologically by smaller projectile points, the replacement of flexed inhumations with cremation, the introduction of ceramics and an emphasis on inland plant food collection and processing, especially acorns. Inland semi-sedentary villages were established along major water courses, and montane areas were seasonally occupied to exploit acorns and piñon nuts, resulting in permanent milling stations on bedrock outcrops. Mortars for acorn processing increased in frequency relative to seed-grinding basins. In the northern part of the county where the proposed casino and hotel project is located, the period is known as the “San Luis Rey Complex” (Meighan 1954; True et. al. 1974).

The San Luis Rey Complex is divided into two phases. San Luis Rey I is a preceramic phase dating from approximately 2,000 BP to 500 BP (True et. al. 1974). The material culture of this phase includes small triangular pressure flaked projectile points, manos, portable metates, olivella beads, drilled stone ornaments, and mortars and pestles. The San Luis Rey II phase differs only in the addition of ceramics and pictographs.

### ***Ethnohistoric Period***

The Shoshonean inhabitants of northern San Diego County were called Luiseños by Franciscan friars who named the San Luis Rey River and established the San Luis Rey Mission in the heart of Luiseño territory. Their territory encompassed an area from roughly Agua Hedionda on the coast, east to Lake Henshaw, north into Riverside County, and west through San Juan Capistrano to the coast (Bean and Shipek 1978). The Luiseño shared boundaries with the Gabrieliño and Serrano to the west and northwest, the Cahuilla from the deserts to the east, the Cupeño to the southeast and the Ipai, to the south. All but the Ipai are linguistically similar to the Luiseño.

The Luiseño were divided into several autonomous lineages or kin groups. The lineage represented the basic political unit among most southern California Indians, and each Luiseño lineage possessed a permanent base camp, or village, in the San Luis Rey Valley and another in the mountain region for the exploitation of acorns. Nearly all resources of the environment were exploited by the Luiseño in a highly seasonal manner. Each lineage had exclusive hunting and gathering rights in their procurement ranges and violation of trespass was seriously punished (Bean and Shipek 1978).

Acorns were the most important single food source used by the Luiseño. Seeds from grasses, manzanita, sage, sunflowers, lemonade berry, chia and other plants were also used along with

various wild greens and fruits. Deer, small game and birds were hunted and fish and marine foods were eaten. Generally women collected the plant resources and the men hunted.

Houses in primary villages were conical structures covered with tule bundles and with excavated floors and central hearths. Houses constructed at the mountain camps generally lacked any excavation, probably due to the summer occupation. Other structures included sweathouses, ceremonial enclosures, ramadas and acorn granaries. Domestic implements included wooden utensils, baskets and ceramic cooking and storage vessels.

Hunting implements consisted of the bow and arrow, curved throwing sticks, nets and snares. Shell and bone hooks as well as nets were used for fishing. Lithic resources of quartz and metavolcanics, and some cherts were available locally. Exotic materials, such as obsidian and steatite, were acquired through trade.

The traditional Luiseño religion is a complex and deeply philosophical belief system with powerful religious leaders, elaborate ceremonies and a veil of secrecy (White 1963). Each ritual and ceremonial specialist maintained the knowledge of the full meaning of a ceremony in secrecy and passed on the knowledge to only one heir. The decimation of the population after European contact undoubtedly caused the loss of some religious specialists and brought about abbreviated versions of ceremonies, many of which are still practiced today. Surviving ceremonies include initiation for cult candidates, installation of religious chiefs, funerals and clothes burning (Bean and Shipek 1978).

Spanish explorers first encountered coastal Luiseño villages in 1769 and established the Mission San Luis Rey de Francia in 1798, four miles inland from the mouth of the San Luis Rey River. The missions "recruited" the Luiseño to use as laborers and convert them to Catholicism. The inland Luiseño were not heavily affected by Spanish influence until 1816, when an outpost of the mission was established 20 miles further inland at Pala. At the time of contact, Luiseño population estimates range from 5,000 to as many as 10,000 individuals. Missionization, along with the introduction of European diseases, greatly reduced the Luiseño population. Most villagers, however, continued to maintain many of their aboriginal customs and simply adopted the agricultural and animal husbandry practices learned from Spaniards.

By the early 1820s California came under Mexico's rule, and in 1834 the missions were secularized resulting in political imbalance which caused Indian uprisings against the Mexican rancheros. Many of the Luiseños left the missions and ranchos and returned to their original village settlements. When California became a sovereign state in 1849, the Luiseño were recruited more heavily as laborers and experienced even harsher treatment. Conflicts between Indians and encroaching Anglos finally led to the establishment of reservations for some Luiseño populations, including the Pauma Reservation in 1892. Other Luiseños were displaced from their homes, moving to nearby towns or ranches. The reservation system interrupted Luiseño social organization and settlement patterns, yet many aspects of the original Luiseño culture still persist today. Certain rituals and religious practices are maintained and traditional games, songs and dances continue as well as the use of foods such as acorns, yucca and wild game.

## Site Significance

To be evaluated as significant and eligible for inclusion in the National Register of Historic Places (NRHP), a site must possess integrity and:

- (a) be associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) be associated with the lives of persons significant in our past; or
- (c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) have yielded, or may be likely to yield, information important in prehistory or history.

## Cultural Resources Survey

A records and literature search for the project was conducted at the South Coastal Information Center at San Diego State University and included a one-mile radius of the project area. The purpose of the record search was to obtain background information on the types of sites that would be expected in the region. The record search revealed that 14 archaeological investigations have taken place in the vicinity of the project, including three that overlap with the current project Area of Potential Effect (APE). The records search identified 12 previously recorded cultural resources within a one-mile radius of the project. The previously-identified sites ranged from prehistoric habitation sites to historic structures and historic artifact scatters.

Intensive archaeological surveys of the APE were conducted on December 4, 2006 and March 26, 2007, except for along the sides of Pauma Reservation Road and SR-76 where single linear transects were used. The entire project area was found to be disturbed as a result of agriculture, road construction, the existing casino, and other uses. The southern and eastern portions of the APE are mostly cut and fill slopes and include the current casino, parking lot, entrance and associated facilities. The northern and western portions of the APE are cultivated with orange and lemon trees and include ballfields. The ground has been further disturbed by the construction of a wastewater treatment plant and the installation of underground irrigation and other pipelines. Nowhere within the APE does there appear to be any intact native soils.

No cultural resources were identified within the project APE either through a review of the records search or by the intensive field survey. Due to the extensive disturbance and development and based on previous research within the APE it is highly unlikely that intact cultural resources are present in the APE.

### **Traditional Cultural Properties**

A Native American consultation program was conducted in the effort to identify any Traditional Cultural Properties (TCPs) located in the project vicinity. A mailing list of Native American contacts dated April 10, 2007 was provided by the California Native American Heritage Commission (NAHC), and included representatives from the Pauma-Yuima, Rincon, Pala, and San Luis Rey tribes. A contact letter was mailed to these representatives requesting any information regarding cultural resources in the vicinity of the Project Site, and follow-up telephone calls were made on April 30, 2007. One response was received from the Rincon Tribe. No TCPs were identified by this effort.

### **3.6 Geology and Soils**

For NEPA compliance purposes, a Preliminary Geotechnical/Geologic Assessment Report has been prepared for the Proposed Project (PSI 2007). The geotechnical report included the results of a record search, field surveys, and laboratory testing of soil samples. The purpose of the study was to identify any geotechnical or geologic issues at the Project Site that may require specific grading or building procedures. A general discussion of building foundation types and their suitability for the Project Site was included.

The Pauma Reservation is located in the central portion of the Peninsular Ranges geomorphic province, an area characterized by northwesterly trending mountains and intervening valleys. This geomorphic province extends from the Los Angeles Basin into Baja California, Mexico. The Project Site is located at the base of Palomar Mountain, which is dominated by mesozoic igneous and metamorphic rocks of the southern California batholith. The geology beneath the Pauma Reservation is described as a fanglomerate, which consists of consolidated alluvium that has washed down from Palomar Mountain and hardened over time. The soils on the Reservation are classified as Soboba stony loamy sand, 9 to 30 percent slopes (USDA, 1973). The Soboba series consists of excessively drained, very deep stony loamy sands derived from gravelly and stony, acid, igneous alluvium. Soboba soils are considered to be most suitable for avocado orchards and rangeland, although on the Pauma Reservation it is used for citrus groves. Fertility is low and permeability is very rapid. Runoff is medium to rapid and the erosion hazard is moderate to high.

Regional topography in the Peninsular Range is characterized by considerable relief with relatively moderate to steep slopes. Most of the area is undergoing erosion and mass wasting, but the major river valleys have thick accumulations of sediments, technically referred to as alluvium. The alluvium undergoes cycles of deposition and erosion, depending on the water flow in the drainage system. Typically, the rivers are at low flows during the summer months and have variable flows during the winter rainy season. Core samples up to 58 feet deep did not encounter groundwater. A review of monitoring well information from the California Department of Water Resources indicates a depth to groundwater of over 100 feet in the project area. The depth to groundwater is expected to lessen as you progress downslope to the south towards the San Luis Rey River.

According to the Alquist-Priolo Special Studies Zone Act of 1972 (revised 1994), active faults are those that have been shown to display surface rupture during the past 11,000 years. The Project Site is not located within a mapped Earthquake Fault Zone (ICBO, 1988). In addition, the site survey did not identify any evidence of on-site faulting. The Project Site is, however, like the rest of Southern California, within a seismically active area. Faulting in the project area occurs in several locations, with the Elsinore Fault at the base of Palomar Mountain, north of the Project Site, being the known major fault. Figure 12 provides a map of known faults in the project area. The Elsinore Fault comes within approximately 2,000 feet of the Project Site. A Magnitude 6.0 earthquake is believed to have occurred approximately 30 miles northwest of the Project Site, in Lake Elsinore, on May 15, 1910. No other large earthquakes have been recorded along the Elsinore Fault, although many much smaller earthquakes have.

As a result of the past seismic activity and the potential for future seismic activity, the Project Site is located in Seismic Zone 4 according to the California Building Code (CBC) and structures should be designed to withstand seismic activity anticipated in this zone. Section 6.4.2 of the Tribal/State Compact, as amended, requires the Tribe to meet or exceed the CBC and the Public Safety Code for San Diego County. This does not confer jurisdiction of the State or its political subdivisions over development on the Reservation.

No evidence of ancient deep-seated landsliding has been identified on the Project Site. The closest mapped landslide is located approximately one-half mile to the east of the Project Site. This landslide, known as the Tin Can Flat Landslide, does not show any evidence of recent movement and is sufficiently removed from the Project Site that it would not cause any adverse effects to the Pauma Reservation should it move in the future.

A drainage study has been conducted by Project Design Consultants (PDC) of the existing conditions and patterns that would result under the Proposed Project (PDC 2008a). Taking into account the soil type that consists primarily of Hydrologic Soil Group A, a 100-year storm, and other variables, PDC determined that the existing two off-site detention basins do not have any volume to spare for the increase in detention volume required for the Proposed Project. PDC has therefore designed a new third detention basin that will provide the volume to detain on-site peak flows that will occur under the Proposed Project. In addition, PDC has prepared a Storm Water Pollution Prevention Plan (SWPPP) and a Storm Water Management Plan (SWMP; (PDC 2008b) that will include the construction and post-construction Best Management Practices to be employed for erosion control on site.

Liquefaction describes the condition where saturated soils lose their shear strength during seismic activity and behave more like a liquid than a solid. This can lead to substantial structural damage structures located on the liquified soils. Liquefaction is typically associated with soils exhibiting uniform small-grained characteristics with a high groundwater table. Liquefaction danger is considered to be relatively low for areas with a groundwater table of 50 feet or more. The depth to groundwater beneath the Project Site is over 100 feet. Therefore, the potential for liquefaction is considered to be very low.

Inundation of the Project Site by a tsunami or seiches is not considered to be a threat due to the absence of large water bodies nearby. The distance, difference in elevation, and intervening topography would prevent such a wave in the Pacific Ocean from traveling up the San Luis Rey River to the Project Site.

### **3.7 Hazards and Hazardous Materials**

The Project Site has been used for citrus groves and for the existing casino. There are no known underground storage tanks or other containers for the storage of hazardous materials on the Project Site other than typical household products used in the cleaning and maintenance of the existing casino. The past and ongoing agricultural uses of the Project Site suggest the potential presence of fertilizers, herbicides, and pesticides. These chemicals have been applied following the manufacturers suggested methods and none are stored on the Project Site. No other hazards or hazardous materials are known to be located on the Project Site.

### **3.8 Hydrology/Water Resources**

A Water Supply Evaluation for the Proposed Project has been prepared by hydrogeologists Dr. Jay Jones of Environmental Navigation Services, Inc. (ENSI) and Mr. Eric Bikis of Bikis Water Consultants, LLC (BWC). The Water Supply Evaluation is attached to this EA/TEIR as Appendix H, and portions of it are summarized below and in Sections 3.17, 4.8, and 4.17.

The Pauma Reservation has access to multiple, currently-developed sources of water. These include surface water from Pauma Creek, and groundwater from on-Reservation wells. The Proposed Project will also use treated wastewater as an additional source for irrigation.

**Pauma Creek** - Pauma Creek's watershed extends essentially to the top of Palomar Mountain and the stream channel occurs along the southern side of the Mission Reserve and the Pauma Reservation. Pauma Creek is a perennial stream and observed surface flows have consistently shown that it readily recharges into the San Luis Rey River Valley's sediments and bedrock. The Pauma Creek aquifer system appears to have a high potential for groundwater development (ENSI and BWC, 2008). The Pauma Band has the highest priority water right for surface water from Pauma Creek and is entitled to diverted per minute from the creek (435.5 acre-feet per year assuming sustained flow). The water is currently being used to support agriculture (primarily citrus and avocado), and for non-potable residential purposes.

**On-site Groundwater** - The existing casino is supplied by treated water from water supply wells located on the Pauma Reservation. The Proposed Project will also rely on existing and new wells for its water supply. Pauma wells have been constructed within the alluvial sediments that occur along the flank of Palomar Mountain along the San Luis Rey River, and in the underlying granitic rock.



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**On-Site Recycled Water** - The existing casino does not reclaim water from the existing wastewater treatment plant. Currently, the treated wastewater is discharged to subsurface leach field lines and represents ongoing groundwater recharge. Based on a 90 percent treatment efficiency, the existing system produces approximately 35 acre-feet of groundwater recharge per year.

The Proposed Project will treat wastewater to California Title 22 standards and provide a new supply of recycled water. This recycled water will be of adequate quality for a variety of purposes, including irrigation. The wastewater treatment plant will produce up to 250 acre-feet per year of recycled water. This will be used for irrigation within the project site and the remainder will be discharged to leach fields and percolation ponds and become groundwater recharge.

**San Luis Rey Indian Water Authority** - The Pauma Tribe has rights to water from this project but the delivery system has not yet been constructed. This future water source for the Tribe was not considered a source for the Proposed Project.

As described in the Water Supply Evaluation (Appendix H), groundwater is the current source of potable water supply used for the existing Casino Pauma. The quality of water produced by the wells meets or exceeds both primary and secondary drinking water standards. The existing casino and landscape uses approximately 60 acre-feet per year of groundwater.

### **Existing Drainage**

A drainage study for the Proposed Project has been prepared by Project Design Consultants (PDC; 2008a). Portions of that report are summarized below.

The project site is located within the Monserate hydrologic area in the San Luis Rey watershed. From a regional perspective, the drainage is from northeast to southwest. The project is adjacent to the Pauma Creek floodplain (designated as a FEMA Zone A; Appendix N), but no grading is proposed within the floodplain boundaries. The existing casino, surrounding parking lots, and surrounding off-site areas drain to the south towards two off-site detention basins. Upstream of the existing casino, the drainage is characterized by sheet flow and does not become concentrated until it is collected in a brow ditch at the top of the slope north of the casino. This off-site drainage and some of the on-site drainage is collected in an underground storm drain pipe system that directs the runoff around the casino toward the existing detention basins. The eastern portion of the parking lot drains as sheet flow towards the southern corner, where it enters the basin via concrete slope drains or into the storm drain system via F-type catch basins. A significant amount of off-site area north and east of the casino drains to the northeast corner of the existing basin via a riprap-lined channel.