

CHAPTER 6.0

BIOLOGICAL RESOURCES

This section discusses biological resources in relation to the environmental and regulatory setting for the proposed project site and offsite improvement area. Potential direct and indirect onsite and offsite impacts are discussed and mitigation measures designed to eliminate or reduce impacts are identified.

6.1 ENVIRONMENTAL SETTING

6.1.1 REGIONAL SETTING

The project site and offsite improvement area are located in Placer County, California, which encompasses a total of 1,506 square miles and ranges in elevation from 40 to 9,000 feet. The topography rises from nearly flat land on the edge of the Sacramento Valley at the western side of the county, to the crest of the Sierra Nevada at the eastern border. The general climate is moderate with an average annual temperature of 60.5° F and an average annual precipitation of 35.9 inches (Placer County, 2005b).

6.1.2 LOCAL SETTING

The project site and offsite improvement area are located in the Sunset Industrial Area (SIA), which includes approximately 9,000 acres in unincorporated southwest Placer County (**Figure 4-1**). The SIA is primarily undeveloped, with many undeveloped parcels used for agricultural activities. Developed uses consist of light and heavy industrial, private and public utilities and services, and recreation. The southeastern corner of the SIA is located along State Route (SR) 65 and contains the majority of developed land. The dominant vegetation communities within the SIA include non-native annual grassland interspersed with seasonal wetland, vernal pool, and riparian habitats along several drainages and creeks.

PROJECT SITE AND OFFSITE IMPROVEMENT AREA

The 49-acre project site is currently paved and developed with the existing Thunder Valley Casino and associated infrastructure. As shown in **Figure 4-4**, the project site is bound by Orchard Creek Conservation Bank to the immediate north, east, and west and by Athens Avenue to the south. A paved temporary overflow parking lot is located across from the casino to the south of Athens Avenue. The proposed widening of Thunder Valley Court would involve paving approximately 0.4 acres of currently landscaped area along the western border of the overflow parking lot.

The topography in the vicinity of the project site and associated offsite improvement area consists of flat land with an elevation range of approximately 120 to 140 feet above mean sea level (msl). Soils in the area are shown in **Figure 12-1** and include: Alamo-Fiddymment complex (0 to 5 percent slopes), Fiddymment-Kaseberg loam (1 to 5 percent slopes), Cometa-Fiddymment complex (1 to 5 percent slopes) Ramona Sandy loam (2 to 9 percent slopes), Exchequer-Rock outcrop complex soils (2 to 30 percent slopes), and Xerofluvents, frequently flooded (NRCS, 2007). Near surface soils that dominate the project site and offsite improvement area belong to the Fiddymment-Kaseberg soil series. Both Fiddymment and Kaseburg soil series are classified as hydrologic group D, which account for soils that have a very slow water infiltration rate when thoroughly wet and a slow rate of water transmission. Physical properties of the Fiddymment-Kaseberg soil series are listed in **Table 12-1**.

6.1.3 BIOLOGICAL COMMUNITIES

A summary of the biological communities within the project site and offsite improvement area is provided in **Table 6-1**. These communities are described below and include: paved/developed, annual grassland, vernal pool, seasonal wetland, and intermittent drainage. **Appendix D** contains a complete list of plant and animal species observed. **Figures 6-1** and **6-2** contain photographs in the vicinity of the project site and offsite improvement area and **Figure 6-3** provides a habitat map.

**TABLE 6-1
SUMMARY OF HABITAT TYPES IN THE VICINITY OF THE PROJECT SITE AND
OFFSITE IMPROVEMENT AREA**

Biological Communities	Placer County Wildlife Habitat Relationships ¹	Cowardin Class ²	Sawyer & Keeler-Wolf ³
Paved/Developed	Urban/Suburban	Not Classified	Not Classified
Annual Grassland	Annual Grassland	Not Classified	California Annual Grassland Series
Vernal Pool	Vernal Pool Complex	Nonpersistent Emergent Wetland	Northern Claypan Vernal Pools
Seasonal Wetland	Seasonal Wetland	Nonpersistent Emergent Wetland	Not Classified
Intermittent Drainage	Not Classified	Not Classified	Not Classified

¹Placer County Wildlife Habitat Relationships (PCWHR) System (Jones & Stokes, 2004).

²Classification System for Wetland and Deepwater Habitats (Cowardin, *et al*, 1979).

³A Manual of California Vegetation (Sawyer & Keeler-Wolf, 1995).

PAVED/DEVELOPED HABITAT

The project site is currently paved/developed with the existing Thunder Valley Casino and associated onsite facilities. There are no vegetative communities within the project site. Although ornamental landscaping is located along the southern boundary of the project site, it is not considered a vegetative community. Paved/developed habitat also occurs within the offsite improvement area that includes

Figure 6-1: Site Photographs

Figure 6-2: Site Photographs

Figure 6-3: Habitat Map

Athens Avenue, Thunder Valley Court, and the temporary overflow parking lot. There are no vegetative communities along Thunder Valley Court or within the overflow parking area. Although ornamental landscaping is located along Thunder Valley Court, it is not considered a vegetative community. Vegetative communities along Athens Avenue and adjacent to the project site are described below.

ANNUAL GRASSLAND

Annual grassland habitat occurs on the north and south sides of Athens Avenue within the offsite improvement area (**Figure 6-3**). Dominant native and non-native plant species observed in this community include ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), wild oat (*Avena fatua*), Medusa-head (*Taeniatherum caput-medusae*), annual hairgrass (*Deschampsia danthoniodes*) sticky tarweed (*Holocarpha virgata* ssp. *virgata*), Italian ryegrass (*Lolium multiflorum*), and yellow star thistle (*Centaurea solstitialis*).

VERNAL POOL

Vernal pool habitat occurs within the annual grassland along the north and south sides of Athens Avenue (**Figure 6-3**). Dominant vegetation observed within the vernal pool habitat in the offsite improvement area includes coyote-thistle (*Eryngium vaseyi*), and spikerush (*Eleocharis acicularis*).

SEASONAL WETLAND

Seasonal wetland habitat occurs within the annual grassland along the north and south side of Athens Avenue (**Figure 6-3**). Dominant vegetation observed within the seasonal wetlands in the offsite improvement area includes Lemon's canary grass (*Phalaris lemmonii*), and curly dock (*Rumex crispus*).

INTERMITTENT DRAINAGE

An unnamed intermittent drainage flows in a south-to-north direction from the south side of Athens Avenue through a culvert under Athens Avenue and continues northward on the west side of the project site, where it drains into Orchard Creek (**Figure 6-3**). Vegetation observed within the intermittent drainage includes Italian ryegrass, turkey mullein (*Eremocarpus setigerus*) and wild oat.

ORCHARD CREEK

Orchard Creek flows in an east-to-west direction approximately 0.3 miles north of the project site. Orchard Creek is a meandering, low-gradient, third order stream, that was carved through low, rolling topography on the eastern terrace of the Sacramento Valley. It is marked by a relatively uniform channel with a low floodplain. The channel is approximately 8 to 10 feet wide and approximately two to four feet deep in the vicinity of the existing Thunder Valley Wastewater Treatment Plant (WWTP) discharge point where highly treated effluent enters the Creek. The floodplain is a broad, shallow (approximately three to four feet deep) corridor that extends into the grassland on both sides of the channel.

Orchard Creek has historically been considered an ephemeral drainage, although recent flow measurements taken upstream of the discharge point have confirmed a perennial flow. Several ephemeral drainages and anthropogenic runoff (from golf courses and residential uses) supplement direct rainwater flows in the channel. Orchard Creek experiences seasonal fluctuation in depth and flow velocity. During the dry summers when flow is derived exclusively from upstream runoff, Orchard Creek contains an even mix of slow-shallow and slow-deep flow regimes, with sporadic occurrences of fast-shallow flow regimes. During winters when flow is derived from rainwater supplemented by upstream runoff, Orchard Creek is dominated by the slow-deep flow regime, with a small amount of slow-shallow and a smaller amount of fast-shallow flow regimes. Additional details regarding hydrology, water quality, habitat, and biological communities in the section of Orchard Creek near the project site are included in the *Orchard Creek Characterization and Assessment* (AES, 2007) (**Appendix E**).

6.1.4 WILDLIFE

Wildlife species observed in the vicinity of the project site and offsite improvement area include Brewer's blackbird (*Euphagus cyanocephalus*), killdeer (*Charadrius vociferous*), cliff swallow (*Hirundo pyrrhonota*), and western meadowlark (*Sturnella neglecta*). **Appendix D** contains a complete list of wildlife species observed.

6.1.5 SPECIAL-STATUS SPECIES

For the purpose of this report, special-status species are defined as species that are of management concern to state and federal resource agencies, including those that are:

- Listed as endangered, threatened, or candidate under Federal Endangered Species Act (FESA);
- Listed as endangered, threatened, rare, or proposed for listing, under California Endangered Species Act (CESA);
- Designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§§3511, 4700, or 5050);
- Designated as species of special concern by CDFG;
- Plants or animals that meet the definitions of rare or endangered under CEQA, including plants ranked by California Native Plant Society (CNPS) to be “rare, threatened, or endangered in California” (Lists 1A, 1B, and 2); and
- Plants listed as rare under the California Native Plant Protection Act.

A regionally occurring special-status species table, U.S. Fish and Wildlife Service (USFWS) data, and California Natural Diversity DataBase (CNDDDB) and CNPS queries are provided in **Appendix D**. Special-status species known to occur within 5 miles of the project site are illustrated in **Figure 6-4**.

Figure 6-4: CNDDDB 5-Mile Special Status Species Map

Based on habitat present, both within the project and offsite improvement area, a total of 13 special-status species (8 plants and 5 wildlife) have the potential to occur in the vicinity of the project site and offsite improvement area. These species are listed in **Table 6-2** and are described below.

SPECIAL-STATUS PLANTS

Big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*) is a CNPS-listed 1B species. Big-scale balsamroot is a perennial herb found in chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentinite soils from 90 to 1,400 meters. The blooming period is from March through June (CNPS, 2007). Within five miles of the project site, two CNDDDB records for big-scale balsamroot were found. One record with the last reported information on the population was in 1939 and the other record was documented in 1957. Of the two records, the 1957 record had the nearest occurrence, located approximately 2.3 miles south of the project site on an uncultivated strip along a roadway (CDFG, 2003). The annual grassland along Athens Avenue within the offsite improvement area provides potential habitat for big-scale balsamroot.

Hispid bird's beak (*Cordylanthus mollis* ssp. *hispidus*) is a CNPS-listed 1B species. Hispid bird's beak is a hemiparasitic annual herb found on alkaline soils on meadows and seeps, playas, and valley and foothill grassland from 1 to 55 meters. The blooming period is from June through September (CNPS, 2007). There is one CNDDDB record for hispid bird's beak within five miles of the project site. The record is from 1991 and is approximately 3.1 miles southeast of the project site. Approximately 2,500 plants were observed in an alkali meadow. The annual grassland along Athens Avenue within and around the offsite improvement area represents potential habitat for this species.

Dwarf downingia (*Downingia pusilla*) is a CNPS-listed 2 species. Dwarf downingia is an annual herb found in vernal pools and in valley and foothill grassland, which are occasionally mesic, from 1 to 445 meters. The blooming period is from March through May (CNPS, 2007). There are eight CNDDDB records for dwarf downingia within five miles of the project site. The nearest record is from 2002 and is approximately 0.96 miles northwest of the project site. Less than 100 plants were observed in two large vernal pools (CDFG, 2003). The annual grassland and vernal pools within the Orchard Creek Conservation Bank, the offsite improvement area along the north and south sides of Athens Avenue, and undeveloped land on the south side of Athens Avenue provide potential habitat for dwarf downingia.

Boggs Lake hedge-hyssop (*Gratiola heterosepala*) is a California endangered and a CNPS-listed 1B species. Boggs Lake hedge-hyssop is an annual herb found on clay soils in vernal pools and along lake margins of marshes and swamps from 10 to 2,375 meters. The blooming period is from April through August (CNPS, 2007). Boggs Lake hedge-hyssop is covered under the *Recovery Plan for Vernal Pool Ecosystems for California and Southern Oregon* (USFWS, 2005). There are no CNDDDB records within five miles of the project site. The nearest record is from 1987 and is approximately 5.3 miles southeast of the project site. Over 40 plants were observed in two subpopulations in northern hardpan vernal pools on

**TABLE 6-2
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES**

Scientific Name Common name	Federal/ State/ CNPS	Distribution	Habitat Requirements	Period of Identification
PLANTS				
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i> big-scale balsamroot	--/--/1B	Sacramento Valley, Sierra Nevada foothills, and San Francisco Bay Area.	Chaparral, cismontane woodland, and open grassy slopes and valleys, sometimes in serpentine soil; elevations 90-1400 meters	March-June
<i>Cordylanthus mollis</i> ssp. <i>hispidus</i> hispid bird's beak	--/--/1B	Contra Costa, Alameda, Fresno, Kern, Merced, Placer, and Solano counties.	Meadows and seeps, playas, valley foothill grassland (alkaline); elevation 1-155 meters.	June-September
<i>Downingia pusilla</i> dwarf downingia	--/--/2	Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties.	Valley and foothill grassland (mesic), vernal pools; elevation 1-445 meters.	March-May
<i>Gratiola heterosepala</i> Boggs Lake hedge- hyssop	--/CE/1B	Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, and Tehama counties.	Marshes, swamps and vernal pools (clay); 10-2375 meters	April-August
<i>Juncus leiospermus</i> var. <i>ahartii</i> Ahart's dwarf rush	--/--/1B	Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba counties.	Valley and foothill grassland (mesic); elevation 30-100 meters.	March-May
<i>Juncus leiospermus</i> var. <i>leiospermus</i> Red Bluff dwarf rush	--/--/1B	Butte, Placer, Shasta, and Tehama counties.	Chaparral, cismontane woodland, meadows and seeps, Valley and foothill grassland, vernal pools (mesic); elevations 35-1020 meters	March-May
<i>Legenere limosa</i> legenere	--/--/1B	Alameda, Lake, Napa, Placer, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, Solano, Sonoma, Stanislaus, Tehama and Yuba counties.	Vernal pools; elevation 1-880 meters	April-June
<i>Navarretia myersii</i> ssp. <i>myersii</i> pincushion navarretia	--/--/1B	Amador, Calaveras, Merced, Placer, and Sacramento counties.	Vernal pools (acidic); elevations 20-330 meters	May
WILDLIFE				
Invertebrates				
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT/--/--	Central Valley from Shasta County to Tulare County, and central coast range from northern Solano County to San Benito County. Isolated populations in San Luis Obispo County, in Santa Barbara County, in Riverside County, and in Rancho California in Riverside County.	Vernal pools in the Central Valley, coast ranges, and a limited number of sites in the Transverse Ranges and Riverside County, California.	December-May

Scientific Name Common name	Federal/ State/ CNPS	Distribution	Habitat Requirements	Period of Identification
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	FE/--/--	Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kings, Merced, Placer, Sacramento, San Joaquin, Shasta, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo and Yuba counties.	Habitat variations include natural, and artificial, seasonal ponds such as vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts due to vehicular activities. Wetland features vary in size, depth and volume.	December–May (dependent of timing of winter and spring rains)
Amphibians				
<i>Spea hammondi</i> western spadefoot toad	--/CSC/--	Western California from Sonoma County in the north to Santa Barbara County in the south.	Breeds in vernal pools and ponds of grassland and open woodland of low hills and valleys. Will utilize burrows for refuge.	November–February (adults) March 15–May 15 (larvae)
Birds				
<i>Athene cunicularia</i> western burrowing owl	--/CSC/--	Throughout California except in the northwest coastal forests and high mountains.	Yearlong resident of open, dry grassland and desert habitats, as well as in grass, forb and open shrub stages of pinyon-juniper, ponderosa pine habitats and often near human habitation.	Year round
<i>Buteo swainsoni</i> Swainson's hawk	--/CT/--	Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Very limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, Antelope Valley, and in eastern San Luis Obispo County.	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, alfalfa, or grain fields supporting rodent populations.	March–October

STATUS CODES**FEDERAL: U.S. Fish and Wildlife Service and National Marine Fisheries Service**

FE Listed as Endangered by the Federal Government
 FT Listed as Threatened by the Federal Government
 FPD Proposed for Delisting
 FD Federally Delisted
 FC Candidate for Listing

STATE: California Department of Fish and Game

CE Listed as Endangered by the State of California
 CT Listed as Threatened by the State of California
 CSC California Species of Special Concern

CNPS: California Native Plant Society

List 1B Plants rare or endangered in California and elsewhere
 List 2 Plants rare or endangered in California, but more common elsewhere

SOURCES: U.S. Fish and Wildlife Service, 2007b; California Natural Diversity DataBase, 2003; California Native Plant Society, 2007; California Department of Fish and Game, 2007; Cornell Lab of Ornithology, 2005; NatureServe, 2007; Moyle, 2002; Hickman, 1993

exchequer very stony loam soil. The vernal pools and seasonal wetlands within the Orchard Creek Conservation Bank, the offsite improvement area along Athens Avenue, and the undeveloped land on the south side of Athens Avenue provide potential habitat for Boggs Lake hedge-hyssop.

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is a CNPS-listed 1B species. Ahart's dwarf rush is an annual herb found in valley and foothill grassland habitat that can occasionally be mesic, from 35 to 1,020 feet. The blooming period is from March through May (CNPS, 2007). Ahart's dwarf rush is covered under the *Recovery Plan for Vernal Pool Ecosystems for California and Southern Oregon* (USFWS, 2005). There is one CNDDDB record for Ahart's dwarf rush within five miles of the project site. The record is from 1990 and is approximately 4.7 miles northwest of the project site. Approximately 45 plants were observed within vernal pools and swales (CDFG, 2003). The vernal pools and seasonal wetlands within the Orchard Creek Conservation Bank, the offsite improvement area along Athens Avenue, and the undeveloped land on the south side of Athens Avenue provide potential habitat for Ahart's dwarf rush.

Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*) is a CNPS-listed 1B species. Red Bluff dwarf rush is an annual herb found in vernal mesic chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pool habitats from 35 to 1,020 meters. The blooming period is from March through May (CNPS, 2007). There is one CNDDDB record for Red Bluff dwarf rush within five miles of the project site. The record is from 1982 and is located approximately 2.3 miles south of the project site. The identification of the plant is not confirmed; occurrence may be erroneous (CDFG, 2003). The vernal pools, seasonal wetlands, and annual grassland within the Orchard Creek Conservation Bank, the offsite improvement area along Athens Avenue, and the undeveloped land on the south side of Athens Avenue provide potential habitat for Red Bluff dwarf.

Legenere (*Legenere limosa*) is a CNPS-listed 1B species. Legenere is an annual herb of vernal pool habitats from 1 to 880 meters. The blooming period is from April through June (CNPS, 2007). Legenere is covered under the *Recovery Plan for Vernal Pool Ecosystems for California and Southern Oregon* (USFWS, 2005). There are three CNDDDB records for Legenere within five miles of the project site. The nearest CNDDDB record is from 2002 and is approximately 0.88 miles northwest of the project site. Hundreds of plants were observed in four large vernal pools (CDFG, 2003). The vernal pools within the Orchard Creek Conservation Bank, the offsite improvement area along the north and south sides of Athens Avenue, and the undeveloped land on the south side of Athens Avenue provide potential habitat for legenere.

Pincushion navarettia (*Navarretia myersii* ssp. *myersii*) is a CNPS-listed 1B species. Pincushion navarettia is found in vernal pools that are often acidic, from 20 to 330 meters. The blooming period for pincushion navarettia is in May (CNPS, 2007). There is one CNDDDB record for pincushion navarettia within five miles of the project site. The record is from 1971 and is approximately 2.6 miles northeast of the project site. The only source of information states that the species was mapped in rainpools in a

valley grassland habitat (CDFG, 2003). The vernal pools within the Orchard Creek Conservation Bank, the offsite improvement area along the north and south sides of Athens Avenue, and undeveloped land on the south side of Athens Avenue provide potential habitat for pincushion navarretia.

SPECIAL-STATUS WILDLIFE

Vernal pool fairy shrimp (*Branchinecta lynchi*) (VPFS) is a federal threatened species. VPFS inhabit vernal pools of the Central Valley and Coast Ranges from elevations that range from 10 to 290 meters. VPFS are found most commonly in small swales, earth slumps, or basalt-flow depression basins with grassy or muddy bottoms in unplowed soils, and occasionally in clear depressions less than 1.0-meter diameter, in sandstone outcrops surrounded by foothill grasslands. VPFS occur in waters between 4.5 and 23°C, with low to moderate total dissolved solids (48 to 481 parts per million (ppm)), and a pH between 6.3 and 8.5 (Syrdahl, 1993; Eriksen and Belk, 1999). When the vernal pools fill with rainwater, fairy shrimp hatch from eggs (shell-covered dormant embryos) present in the soil from previous years of breeding. Eggs normally hatch when waters less than 10°C fills vernal pools. VPFS reach maturity in approximately 18 days under conditions when daytime temperatures reach 20°C, but 41 days are more typical if water remains near 15°C (Gallagher, 1996; Helm, 1998). VPFS is covered under the *Recovery Plan for Vernal Pool Ecosystems for California and Southern Oregon* (USFWS, 2005).

There are 30 CNDDDB records for VPFS within five miles of the project site. The nearest record is from 2002 and abuts the northern boundary of the offsite improvement area. The record states that hundreds of adults were observed within an unknown number of pools concentrated throughout the naturally occurring vernal pools, seasonal wetland swales, emergent marshes, seasonal wetlands, and intermittent/seasonal streams within the Orchard Creek Conservation Bank. The vernal pools and seasonal wetlands within Orchard Creek Conservation Bank, the offsite improvement area along Athens Avenue, and the undeveloped land on the south side of Athens Avenue provide habitat for VPFS.

Vernal pool tadpole shrimp (*Lepidurus packardii*) (VPTS) is a federal endangered species. VPTS are found primarily in vernal pool habitats in the Central Valley from around Tulare County in the south to Shasta County in the north. Adult vernal pool tadpole shrimp are much larger in body mass than adult fairy shrimp and may reach a length of one and one-half inches. Unlike VPFS, VPTS are able to produce more than one generation in a single wet season. Rapid sexual maturity (in as little as three weeks) allows the VPTS to hatch, mature, and produce numerous drought-resistant eggs quickly after rainwater fills the vernal pools. VPTS is covered under the *Recovery Plan for Vernal Pool Ecosystems for California and Southern Oregon* (USFWS, 2005).

There are three CNDDDB records for VPTS within five miles of the project site. The nearest record is from 2006 and is approximately 4.5 miles northwest of the project site. The record states that samples containing VPTS were taken in over 25 locations within naturally occurring vernal pools and swales. The vernal pools and seasonal wetlands within Orchard Creek Conservation Bank, along the north and south

sides of Athens Avenue within the offsite improvement area, and on undeveloped land on the south side of Athens Avenue provide potential habitat for VPTS.

Western spadefoot toad (*Scaphiopus hammondi*) (WST) is a state-listed species of concern. WST are nocturnal species that becomes active following relatively warm rains in late winter-spring and fall. WST inhabit valley and foothill grassland habitat in areas of open vegetation and short grass. Most of the year is spent in underground burrows, which are up to 36 inches deep. During dry periods, the moist soil inside burrows provides water for adsorption through the skin. The species is almost entirely terrestrial, entering water only to breed. Breeding usually occurs during the spring with the onset of the first heavy rains following warm days. WST occasionally forms large, highly vocal, breeding aggregations. WST is covered under the *Recovery Plan for Vernal Pool Ecosystems for California and Southern Oregon* (USFWS, 2005).

There are four CNDDDB records for WST within five miles of the project site. The nearest record is from 1990 and is approximately 4.6 miles southwest of the project site. Approximately 30 metamorphosed WST were observed in a drying intermittent drainage within a grassland habitat with numerous vernal pools and swales. The vernal pools, seasonal wetlands, and annual grassland habitat within Orchard Creek Conservation Bank, along the north and south sides of Athens Avenue within the offsite improvement area, and on undeveloped land on the south side of Athens Avenue provide potential habitat for WST.

Western burrowing owl (*Athene cunicularia*) (WBO) is a state-listed species of concern. WBO typically utilize abandoned burrows from mammals, including ground squirrel, within open grasslands in the Central Valley and surrounding foothills for nesting and roosting. WBO feed on insects, small mammals, birds, reptiles, and carrion. Breeding occurs from approximately March through August.

There is one CNDDDB record for WBO within five miles of the project site. The record is from 1998 and is approximately 4.9 miles south of the project site. Two WBO were observed year round in 1998 in a moderately-grazed, rolling grassland habitat. The annual grassland habitat within Orchard Creek Conservation Bank on the north, east, and west sides of the project site, along the north and south sides of Athens Avenue within the offsite improvement area, and on undeveloped land on the south side of Athens Avenue provide potential habitat for WBO.

Swainson's hawk (*Buteo swainsoni*) is a state threatened species. Swainson's hawk are Neotropical migrants, leaving California in September and October for Mexico and South America, returning in the spring from about March to May. Mating activities peak during the months May to July with an average clutch size of three. Nesting sites are primarily composed of sticks, leaves, and bark. Usually located near water, the nests can be at elevations of four to 100 feet above the ground. They typically forage from high to low elevations in search of small mammals, fish, reptiles, and amphibians. Habitats for foraging

include: open desert, grassland, or croplands containing intermittent tree stands. The annual grassland habitat present in the offsite improvement areas represents potential foraging habitat for this species.

There are four CNDDDB records for Swainson's hawk within five miles of the project site. The nearest record is from 2001 and is approximately 3.3 miles northwest of the project site. An active nest was observed in a valley oak tree surrounded by pasture to the northeast and northwest and riparian to the southeast and southwest (CDFG, 2003). Only one of the four records is within five years of the current date. The record is from 2003 and is approximately 3.9 miles north of the project site. AES biologists observed two to four pairs of Swainson's hawk foraging in the annual grassland habitat in the vicinity of the project site during multiple field surveys in 2007. The annual grassland within Orchard Creek Conservation Bank, the offsite improvement area along Athens Avenue, and the undeveloped land on the south side of Athens Avenue provide suitable foraging habitat for Swainson's hawk. Because there are no mature trees in the vicinity of the project site, there is no nesting habitat for Swainson's hawk.

Migratory birds and their nests are protected by federal regulations under the Migratory Bird Treaty Act. *Cliff swallows* are migratory birds that fly up from South America and nest throughout California. Arrival and departure dates are variable due to the nesting location and seasonal rainfall. Cliff swallows typically nest between February 15 and September 1 in Northern California (Regents of University of California, 2007). Cliff swallows breed in large colonies containing one breeding pair per nest and about three to four eggs per clutch. Cliff swallows return to the same nesting site from year to year. The conditions necessary to create and sustain a colony are open foraging habitat, mud with ideal consistency, a freshwater source, and a vertical textured surface with an overhang. When a nesting site is established under these ideal conditions, breeding populations increase significantly from year to year. With the increase of breeding pairs, the number of nests will also increase.

During nesting season, a large colony of cliff swallow nests is present on the exterior walls of the existing casino building within the project site. Approximately 1,338 nests were observed during the 2007 nesting season. The majority of the nests were located along the north side of the casino, with a few nests along the south and west sides of the building.

The design and texture of the exterior walls of the existing casino provide ideal nesting habitat for cliff swallows. The proximity of the adjacent Orchard Creek Conservation Bank and Orchard Creek provide ideal foraging habitat and water resources for cliff swallow. Because cliff swallows are migratory birds, their nests are protected during their breeding season until all of the birds have fledged and the nests are no longer occupied.

Killdeer are common residents and winter visitors that occasionally migrate in the late summer and fall from Northern California to the coastal valleys and the Central Valley. Killdeer inhabit tidal mudflats and estuaries, bayshore sandflats, lakes, rivers, ponds, irrigated fields, meadows, lawns, and other grassy areas

from below msl to 8,600 feet. Killdeer are monogamous breeders that build nests on the ground in areas with good visibility (Alsop, 2001).

A mating pair of killdeer (*Charadrius vociferus*) was observed in 2007 nesting beneath an ornamental landscape shrub along the southwest side of the project site just north of the offsite improvement area along Athens Avenue.

6.1.6 SENSITIVE HABITATS

WATERS OF THE U.S.

Previous delineations prepared in the vicinity of the project site and offsite improvement area are shown in **Figure 6-5**. There are no wetlands of any type within the project site, as this area is already fully developed. Potential and verified jurisdictional wetlands and other waters of the U.S., occurring within and adjacent to the offsite improvement area, are shown in **Figure 6-6**. Total wetland features within the offsite improvement area comprise 0.095 acres. **Table 6-3** provides a summary of wetland features located within the offsite improvement area.

TABLE 6-3
WETLAND FEATURES WITHIN THE OFFSITE IMPROVEMENT AREA

Wetland Features	Acres	Square Feet
Vernal Pool	0.046	2,008.658
Seasonal Wetland	0.037	1,629.293
Intermittent Drainage	0.012	540.361
Total	0.095	4,178.312

Source: AES, 2007

RIPARIAN SYSTEMS

A riparian corridor occurs along Orchard Creek approximately 0.3 miles north of the project site. Treated effluent from the casino WWTP is discharged into Orchard Creek. The riparian habitat is sparse along the majority of Orchard Creek and its tributaries. Within the Orchard Creek Conservation Bank, a restoration project has been implemented and willows (*Salix* sp.) have been planted along the perimeter of the creek. The willows are sparsely distributed throughout the reach of the stream within the conservation bank. These shrubs are currently 8 to 15 feet tall and are located in a swath approximately 10 to 15 feet wide. They currently provide shade on the banks and floodplain of the creek. They do not overhang the creek itself to a substantial degree, and thus cannot provide substantial shading or thermal regulation of the creek; however, shading and cover will be present after further growth. Although riparian habitat is currently limited along Orchard Creek, the availability of perennial water may allow this habitat to increase.

Figure 6-5: Location of Thunder Valley Casino and Previous Wetland Designations

Figure 6-6: Delineated Wetlands

Riparian overstory species along Orchard Creek are comprised primarily of willow (*Salix* sp.), with sparse occurrences of Fremont cottonwood (*Populus fremontii*). Commonly occurring understory species within this habitat include dallis grass (*Paspalum dilatatum*), flatsedge (*Cyperus echinatus*), and pennyroyal (*Mentha pulegium*). The stream channel has become largely filled with water primrose (*Ludwigia* sp.), an invasive species detrimental to the biological health and hydrological function of many of California's waterways.

Orchard Creek is a warm temperature stream lacking streambed gravel. It contains a warmwater fishery and does not support an anadromous salmonid fishery. Orchard Creek supports an Introduced Fishes Association (Moyle and Nichols, 1973), which is typically found in warm waters and is dominated by warmwater fishes. Fish known to occur in Orchard Creek include bluegill (*Lepomis macrochirus*), pumpkinseed (*Lepomis gibbosus*), redear sunfish (*Lepomis microlophus*), mosquitofish (*Gambusia affinis*), carp (*Cyprinus carpio*), largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), yellow shiner (*Notemigonus crysoleucas*), and channel catfish (*Ictalurus punctatus*) (Wildlands, Inc., 2005). Asiatic clam (*Corbicula* sp.), a non-native fresh water bivalve mollusk, occurs throughout Orchard Creek in the vicinity of the project site.

AES (2007) conducted benthic macroinvertebrate surveys in 2006 and 2007 to evaluate community richness and dominance measures, community composition, functional feeding group composition, diversity, and biotic indices within 450 yards upstream and downstream of the WWTP outfall structure along Orchard Creek (AES, 2007). Benthic macroinvertebrate communities contain an average of 28 taxa upstream and 33 taxa downstream from the existing WWTP outfall structure. Both upstream and downstream reaches contain similar invertebrate assemblages and benthic macroinvertebrate communities typical of low-gradient streams. The macroinvertebrate community is indicative of an organically enriched aquatic system. Additional details regarding hydrology, water quality, habitat, and biological communities in the section of Orchard Creek near the project site are included in the *Orchard Creek Characterization and Assessment* (AES, 2007) (**Appendix E**).

OAK WOODLANDS AND WILDLIFE MOVEMENT CORRIDORS

There are no oak woodland habitats or wildlife movement corridors in the immediate vicinity of the project site or offsite improvement area.

6.2 REGULATORY SETTING

The following section summarizes the applicable federal, state, and local regulations related to biological resources that could be affected by the proposed project.

6.2.1 FEDERAL

FEDERAL ENDANGERED SPECIES ACT

The USFWS and the National Marine Fisheries Service (NMFS) implement the FESA of 1973 (16 USC Section 1531 *et seq.*). Threatened and endangered species on the federal list (50 CFR Subsection 17.11, 17.12) are protected from “take” (direct or indirect harm), unless a Section 10 Permit is granted to an individual or a Section 7 consultation and a Biological Opinion with incidental take provisions are rendered to a lead federal agency. Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federal listed species may be present in the project site and determine whether the proposed project will have a potentially significant impact upon such species. Under the FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC Section 1536[3], [4]). Therefore, project-related impacts to these species, or their habitats, would be considered significant and require mitigation.

Under Section 7 of the FESA, all federal agencies (including USFWS and NMFS) are required to ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of a listed species or modify their critical habitat.

WETLANDS AND OTHER WATERS OF THE UNITED STATES

Discharge of dredged or fill material into waters of the U.S., including wetlands, is regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the federal Clean Water Act (33 USC 1251-1376). USACE regulations that implement Section 404 define waters of the U.S. as: “all waters used in interstate or foreign commerce; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; or wetlands adjacent to these waters”.

Wetlands are defined as: “...those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3, 40 CFR 230.3). The USACE regulates the placement of structures in navigable waters of the U.S. under Section 10 of the federal Rivers and Harbors Act (33 USC 401).

Any project that involves the discharge of dredged or fill material into waters of the U.S., including wetlands, must first obtain authorization from the USACE, under Section 404 of the Clean Water Act. Projects that would directly or indirectly affect vernal pool habitat require consultation with the USFWS

regarding listed vernal pool crustaceans protected by the Endangered Species Act. In addition, the project must comply with the terms of the General Construction National Pollutant Discharge Elimination System (NPDES) Permit for construction activities in excess of one acre and must achieve compliance with Section 401 of the Clean Water Act. A State Water Quality Certification (Clean Water Act Section 401 permit) from the Regional Water Quality Control Board (RWQCB) may be required before other permits are issued, and may involve implementation of a Storm Water Pollution Prevention Plan (SWPPP).

MIGRATORY BIRD TREATY ACT

Most bird species, especially those that are breeding, migrating, or of limited distribution, are protected under federal and state regulations. The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711), makes it unlawful to “*pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess. . . or any part, nest, or egg of any such bird*” (50 CFR 10) (USFWS, 2007a). All migratory birds are protected by the MBTA. The direct injury or death of a migratory bird, due to construction activities that causes nest abandonment, nestling abandonment, or forced fledging would be considered take under federal law. Project-related disturbances must be reduced or eliminated during the nesting cycle.

MAGNUSON STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

The purpose of the Magnuson-Stevens Fishery Conservation and Management Act is to conserve and manage the fishery resources found off the coasts of the United States, anadromous species and continental shelf fishery resources. The conservation and management of these highly migratory species is addressed through the implementation and enforcement of international fishery agreements. The Act, which is enforced by the NMFS (also known as the National Oceanic and Atmospheric Administration Fisheries, or NOAA Fisheries), achieves its purpose through the promotion of domestic, commercial and recreational fishing under sound conservation and management principles, the implementation of fishery management plans to achieve the optimum yield from each fishery on a continuing basis, the establishment of regional fishery management councils to exercise sound judgment in the stewardship of fishery resources, the development of underutilized or not utilized fisheries, and the protection of essential fish habitat (EFH) in the review of projects conducted under federal permits, licenses, or other authorities that affect or have the potential to affect such habitat. EFH is only designated for commercially fished species, such as salmon. Federal agencies are required to consult with NMFS prior to authorizing or conducting projects within EFH.

RECOVERY PLAN FOR VERNAL POOL ECOSYSTEMS OF CALIFORNIA AND SOUTHERN OREGON

Section 4(f) of the FESA, as amended, directs the Secretary of the Interior and the Secretary of Commerce to develop and implement recovery plans for species of animals and plants listed as endangered or threatened unless such plans will not promote the conservation of the species. The USFWS and the NMFS have been delegated the responsibility of administering the FESA. The goal of this recovery plan is to maintain secure, self-sustaining wild populations of declining endangered,

threatened or species of special concern with the minimum necessary investment of resources to ensure their long-term survival in nature. A recovery plan delineates, justifies, and schedules the research and management actions necessary to support recovery of a species. Means within the FESA to achieve recovery goals include the responsibility of all federal agencies to seek to conserve endangered and threatened species, and the Secretary's ability to designate critical habitat, to enter into cooperative agreements with the states, to provide financial assistance to the representative state agencies to acquire land, and to develop Habitat Conservation Plans with applicants. The USFWS applies ecosystem-level recovery and conservation strategy where multiple listed species and species of special concern exist. The goal is to restore, reconstruct or rehabilitate the structure, distribution, connectivity and function upon which those listed species depend. Five key elements compose the ecosystem-level recovery and conservation strategy: (1) Habitat protection, (2) Adaptive habitat management, restoration and monitoring, (3) Status surveys, (4) Research and (5) Participation and outreach. Specifically, this recovery plan covers a total of 33 species of plants and animals that occur exclusively or primarily within vernal pool ecosystems. There are 13 endangered species, 7 threatened species and 13 species of concern that are listed under this federal plan.

6.2.2 STATE

CALIFORNIA DEPARTMENT OF FISH AND GAME

The California Department of Fish and Game (CDFG) implements state regulations pertaining to fish and wildlife and their habitat. The California Endangered Species Act (CESA) of 1970 (CFG Code Section 2050 *et seq.*, and CCR Title 14, Subsection 670.2, 670.51) prohibits the take (interpreted to mean the direct or indirect harm or killing of a species) of species listed under CESA (14 CCR Subsection 670.2, 670.5). A CESA permit must be obtained if a project will result in the take of listed species, either during construction or over the life of the project. Under CESA, CDFG is responsible for maintaining a list of threatened and endangered species designated under state law (CFG Code 2070). CDFG also maintains lists of species of special concern, which serve as "watch lists." Pursuant to requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state listed species may be present in the study area and determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and require mitigation. Impacts to species of concern would be considered significant under certain circumstances, discussed below. California Fish and Game Code Subsections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Section 3511 list birds that are "fully-protected": those that may not be taken or possessed except under specific permit.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The CEQA of 1970 (Subsections 21000-21178) requires that CDFG be consulted during the CEQA review process regarding impacts of proposed projects on rare or endangered species. These special-

status species are defined under CEQA Guidelines subsection 15380(b) and (d) as those listed under FESA and CESA, and species that are not currently protected by statute or regulation, but would be considered rare, threatened, or endangered under these criteria, or by the scientific community. Therefore, species that are considered rare or endangered are addressed in this study regardless of whether they are afforded protection through any other statute or regulation.

RARE AND ENDANGERED PLANTS

For plants in particular, the California Native Plant Society (CNPS) publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California. Plants on Lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing, and the CDFG recommends they be addressed in CEQA projects (CEQA Guidelines Section 15380); however, a plant need not be in the Inventory to be considered a rare, threatened, or endangered species under CEQA.

6.2.3 LOCAL

PLACER COUNTY TREE ORDINANCE

The Placer County Tree Ordinance (Placer County Code §12.16) was developed to preserve native trees (particularly native oaks) and their habitat in Placer County without significantly impairing fire prevention activities or infringing on property owners' rights. According to the Placer County Tree Ordinance, this project is considered a discretionary project, which is regulated by §12.16.060.B of the Placer County Code. The ordinance protects all landmark trees and native trees.

NATURAL COMMUNITY CONSERVATION PLAN

The County of Placer is pursuing a Natural Community Conservation Plan (NCCP) under the State of California Natural Community Conservation Planning Act and a Habitat Conservation Plan (HCP) under the FESA (Placer County, 2005b). The NCCP/HCP will be a comprehensive County-wide plan for the conservation of all natural communities, endangered species and other less sensitive species of native wildlife, fish and plants. The NCCP/HCP is an important part of the Placer Legacy Open Space and Agricultural Conservation Program (Placer County, 2000) and will help achieve key program goals, such as preserving the diversity of natural plant and animal communities, and preserving agricultural land and open space. The Placer HCP/NCCP is currently in draft phase (Placer County, 2005b). Because the HCP/NCCP has not yet been adopted and the USFWS/CDFG permit issued, the goals and conservation criteria are tentative.

6.3 IMPACTS

SIGNIFICANCE CRITERIA

A project would have a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted HCP/NCCP, or other approved local, regional, or state habitat conservation plan.

CONSTRUCTION IMPACTS

IMPACT 6.1:	Development of the proposed project may result in disturbance of cliff swallow nests on the project site.
SIGNIFICANCE:	Significant
MITIGATION:	Mitigation Measures 6.1, 6.2, and 6.3
RESIDUAL SIGNIFICANCE:	Less than Significant

Cliff swallow nests are protected under the MBTA. Cliff swallows nest on the exterior walls of the existing casino each year. Because the existing casino provides an ideal nesting site, cliff swallows will continue to nest on the existing casino unless otherwise deterred.

Construction activities, including noise, vibrations, and equipment emissions associated with the expansion of the existing casino and the development of associated infrastructure within the project site may result in the disturbance of cliff swallow nests. Implementation of Mitigation Measures 6.1, 6.2, and 6.3 would reduce this impact to a less than significant level.

IMPACT 6.2:	The proposed project and offsite improvements may result in impacts to nesting migratory birds and birds of prey.
SIGNIFICANCE:	Significant
MITIGATION:	Mitigation Measures 6.3 and 6.4
RESIDUAL SIGNIFICANCE:	Less than Significant

The annual grassland within the offsite improvement area along Athens Avenue provides potential nesting habitat for migratory birds and birds of prey, including WBO. Although no nests of migratory birds or birds of prey including WBO were observed during the September 2007 surveys within the offsite improvement area (AES, 2007), they have the potential to nest in the annual grassland in the future. The widening of Athens Avenue within the offsite improvement area has the potential to impact nests of migratory birds and birds of prey. Implementation of Mitigation Measure 6.4 would reduce this impact to a less-than-significant level.

The project site provides potential and known nesting habitat for migratory birds, including killdeer. A killdeer nest was observed in 2007 in a landscaped area on the southwest side of the project site, just north of the offsite improvement area along Athens Avenue. Implementation of Mitigation Measure 6.3 would reduce this impact to a less-than-significant level.

IMPACT 6.3:	Offsite improvements may result in impacts to Swainson's hawk foraging habitat.
SIGNIFICANCE:	Less than Significant
MITIGATION:	None Warranted

The annual grassland along Athens Avenue within the offsite improvement area provides potential foraging habitat for Swainson's hawk. Swainson's hawks were observed flying in the vicinity of the project site and offsite improvement area. The widening of Athens Avenue within the offsite improvement area would permanently impact Swainson's hawk foraging habitat. There is no nesting habitat in the vicinity of the project site and associated offsite improvement area.

CDFG considers whether a proposed project will adversely affect suitable foraging habitat within a ten-mile radius of a Swainson's hawk nest that has been actively used during one or more of the last five years (CDFG, 1994). CDFG recommends mitigation for new development projects that would modify greater than five acres of foraging habitat, or are located within 0.25 miles of an active nest. CDFG excludes mitigation for new development projects that would modify less than five acres of foraging habitat and are situated over 0.25 miles from an active nest (CDFG, 1994).

Because the road widening along Athens Avenue would result in permanent impacts to only approximately 0.93 acres of annual grassland, no mitigation is required.

IMPACT 6.4:	Offsite improvements may result in impacts to special-status plants.
SIGNIFICANCE:	Significant
MITIGATION:	Mitigation Measure 6.5
RESIDUAL SIGNIFICANCE:	Less than Significant

Six of the eight special-status plant species with the potential to occur within the offsite improvement area are associated with vernal pools. The six species include Ahart's dwarf rush, Red Bluff dwarf rush, dwarf downingia, Boggs Lake hedge-hyssop, legenere, and pincushion navarretia. The widening of Athens Avenue within the offsite improvement area has the potential to impact vernal pool habitat associated with the six special-status plants. The implementation of Mitigation Measure 6.5 for impacts to vernal pool branchiopods would reduce the impacts to vernal pool-associated special-status plant species to a less than significant level.

Big-scale balsamroot and hispid bird's beak have a low potential to occur in the annual grassland habitat along Athens Avenue in the offsite improvement area. The nearest siting for big-scale balsamroot is from 1957 and the nearest siting for hispid bird's beak is from 1991. Due to the lack of recent occurrences and other work recently performed within the offsite improvement area, presence of these species is considered unlikely and impacts to be less than significant.

IMPACT 6.5:	Offsite improvements may result in impacts to potential and verified jurisdictional wetlands and waters of the U.S., federal listed vernal pool branchiopods, and WST, a species of concern.
SIGNIFICANCE:	Significant
MITIGATION:	Mitigation Measure 6.5
RESIDUAL SIGNIFICANCE:	Less than Significant

Figure 6-6 illustrates the proposed offsite improvements along Athens Avenue in relation to wetland features. Permanent direct impacts include wetland features from the edge of the existing road to the proposed extent of grade ("daylight line") along Athens Avenue. Temporary direct impacts include wetland features between the edge of the permanent direct impact area and the boundary of the offsite improvement area. Habitat within this area would have the potential to be disturbed from construction vehicles, materials stockpiling, and related activities. Indirect impacts would occur to wetland features within 250 feet of the offsite improvement area, in accordance with the provisions of the biological opinion issued by the USFWS (1996).

The widening along Athens Avenue within the offsite road improvement area would result in permanent and temporary direct impacts and indirect impacts to potential and verified wetlands and other waters of the U.S. and vernal pool branchiopod habitat. The proposed offsite improvements have the potential to impact 0.037 acres through permanent direct impacts and 0.058 acres through temporary direct impacts. Indirect impacts, based on the 250 foot buffer above, would total 2.79 acres. **Table 6-4** summarizes the impacts in the vicinity of the offsite improvement area. Because the AT&T telephone conduit would be placed along the edge of pavement within the ROW along westbound Athens Avenue, no impacts to biological resources would occur beyond the impacts resulting from the offsite road improvements along Athens Avenue. The road widening along Thunder Valley Court would occur on developed land and

landscaped areas within the temporary overflow parking lot; therefore, no biological resources would be impacted.

TABLE 6-4
OFFSITE IMPACTS TO WETLAND FEATURES AND FEDERAL LISTED VERNAL POOL BRANCHIOPOD HABITAT

	Permanent Direct Impacts	Temporary Direct Impacts	Indirect Impacts	Total Impacts
Acres	0.037	0.058	2.79	2.89
Square Feet	1,742.4	2,613.6	121,532	125,888

Source: AES, 2007

The seasonal wetlands, vernal pools, and the intermittent drainage within the offsite improvement area provide habitat for the federal listed VPFS and VPTS and the WST, a species of concern. Because VPFS, VPTS, and WST and their associated vernal pool habitat, are covered under the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS, 2005), any impacts to these species or their associated habitats are considered significant. Implementation of Mitigation Measure 6.5 will reduce these impacts to a less than significant level.

OPERATIONAL IMPACTS

IMPACT 6.6:	Expansion of the onsite WWTP could cause impacts to biological resources associated with Orchard Creek.
SIGNIFICANCE:	Less than Significant
MITIGATION:	None Warranted

The onsite WWTP discharges treated effluent directly into Orchard Creek approximately 1,500 feet north of the project site through an effluent pipeline. If an expanded onsite WWTP were chosen as the option for treatment of wastewater for the proposed project, an increase in the amount of highly treated and currently permitted effluent would occur.

A Characterization and Assessment of Orchard Creek (**Appendix E**) has been prepared that evaluates the creek with regard to water flow, temperature, chemical constituents, and biological resources. This document assesses the effects from the existing WWTP treated effluent discharge (under NPDES Permit CA0084697), and addresses the potential for impacts from an increase in the amount of treated effluent discharge that would result from an expansion of the WWTP. Flow and temperature monitoring were conducted at several points both upstream and downstream from the WWTP discharge point over the course of several months. Water samples for chemical analysis and biological samples (benthic macroinvertebrates) were also collected at multiple locations above and below the discharge point. Results of this sampling revealed that water quality and temperature is essentially identical upstream and downstream of the WWTP discharge point.

The benthic invertebrate survey indicates that both the upstream and downstream invertebrate composition is virtually the same. No portion of Orchard Creek provides suitable habitat for salmonid species, due to warm temperatures, high organic content, lack of gravel and lack of instream cover. As described in the study, increased flows of treated effluent from the proposed expansion of the WWTP would not have a significant impact on special-status fish species, and may in fact be beneficial in supporting the continued expansion of riparian habitat and associated species. Additional discussion of sampling methodologies and results can be found in **Appendix E**. The impact of the increased discharges would be less than significant; no additional mitigation measures are proposed.

Furthermore, prior to increasing treated wastewater discharge rates from current levels, an amended NPDES permit for the expanded treatment plant must be obtained from the RWQCB. Once obtained, compliance with the amended NPDES permit would continue to ensure that the increase in highly treated effluent would not degrade receiving water quality, violate any water quality standards, exceed any waste discharge requirements, or cause impacts to biological resources associated with Orchard Creek.

6.4 MITIGATION MEASURES

Mitigation Measure 6.1: In order to deter or eliminate nesting, netting or other acceptable means shall be employed.

Mitigation Measure 6.1 applies to Impact 6.1.

Since swallows are strongly attracted to old nests or to the remnants of deteriorated nests, all traces of mud shall be removed from all exterior wall surfaces of the casino, at the end of each nesting season. Deterrence of nesting can be conducted through the application of fabric or netting to the overhangs and ledges along the exterior walls of the casino. Netting provides a physical barrier between the birds and the potential nesting site. The mesh size of the netting should be from ½-inch to no greater than 1-inch. When hung, the netting should be taut and void of any pockets, wrinkles, holes or openings that may trap and cause harm to birds. The netting should be maintained and repaired, as needed, to avoid any potential harm to birds. It may be left up permanently or taken down each year after nesting season. Deterrents such as metal projectors, fiberglass panels or modification of the potential nesting surface and building structure may be used, but have been proven less effective than netting.

As previously noted, cliff swallow nesting sites include the north, west, and south sides, with the highest density occurring at the northwest corner, of the casino. Proposed construction is to occur along the entire west and partially along the south sides of the existing casino. No new construction is proposed along the north and east sides of the existing building. If construction activities begin before the start of the nesting season, most suitable habitat will be eliminated along the west and south sides of the casino. Nesting may still occur along the north or east sides of the casino. If nesting occurs along the north and/or east walls, then nests shall not be destroyed and a 250-foot buffer from all construction activities

within the project site shall be established and maintained until the end of nesting season. This buffer shall be maintained every nesting season thereafter, until the end of construction.

If construction activities are slated to begin after the cliff swallow nesting season has begun, then preventative and/or deterrent measures shall be taken to ensure that nests do not become established along the west or south walls of the casino and up to 250 feet from the end of the proposed construction. Preventing the birds from nesting by preventing nests from being established on a daily basis shall be conducted in consultation with regulatory agencies. The initial nesting mud may generally be removed using a high-pressure hose. In addition, daily monitoring by a qualified biologist shall be conducted to ensure that no construction occurs within 250 feet of active nests.

Mitigation Measure 6.2: Construction of a structure(s) suitable for cliff swallow nesting habitat shall occur within the project site.

Mitigation Measure 6.2 applies to Impact 6.1.

To compensate for potential reduction of cliff swallow nesting habitat, a suitable structure for cliff swallow nesting habitat shall be constructed on the eastern end of the project site, as shown in **Figure 3-4**. The structure shall include vertical surfaces with overhangs composed of porous and rough substrate, such as stucco, ideal for nest building. The structure shall be designed, in consultation with a qualified biologist, to accommodate from 300-1,000 nests. Once the proposed alternative swallow nesting structure has been erected, man-made swallow nest boxes will be sporadically placed every five to ten feet along the structure to mimic actual nests and promote nesting.

Mitigation Measure 6.3: Pre-construction surveys for migratory birds and birds of prey in the project site and the offsite improvement area.

Mitigation Measure 6.3 applies to Impacts 6.1 and 6.2.

A qualified biologist shall conduct pre-construction surveys for nesting migratory birds and birds of prey including, but not limited to, killdeer and cliff swallows, within the project site and offsite improvement area during the nesting season. These surveys will occur no more than 30 days prior to the onset of construction within the project site and the offsite improvement area. If construction activities are delayed or suspended for more than 30 days after the pre-construction survey, the project site or the offsite improvement area shall be resurveyed. Any nests built within either the project site or the offsite improvement area, during nesting season, cannot be disturbed without approval from the USFWS or CDFG, as appropriate. Should an active nest be established, construction activities shall not continue within a 250-foot buffer around the nest without prior approval from USFWS or CDFG, as appropriate.

Mitigation Measure 6.4: Pre-construction surveys for WBO in offsite improvement area.

Mitigation Measure 6.4 applies to Impact 6.2

To mitigate for potential impacts to nesting WBO, a qualified biologist shall conduct pre-construction surveys during both the wintering and nesting seasons (unless the species is detected during the first survey) within 0.25 miles of the offsite improvement area. These surveys shall occur no more than 30 days prior to the onset of construction within the offsite improvement areas and will be in accordance with CDFG's "Staff Report on Burrowing Owl Mitigation" (Staff Report) (CDFG, 1995). If ground-disturbing activities are delayed or suspended for more than 30 days after the pre-construction survey, the site shall be resurveyed.

1. If no active burrows or burrowing owls are detected within the offsite improvement areas during the surveys no additional mitigation is required.
2. If burrowing owls are detected along Athens Avenue in the offsite improvement area, the CDFG shall be consulted before initiation of any construction activities and the following measures shall be implemented:
 - Active burrows shall be avoided. No disturbance should occur within 160 feet of occupied burrows during the non-breeding season (September 1 through January 31) or within 250 feet during the breeding season of (February 1 through August 31). The avoidance areas will be established around occupied burrows by orange construction fencing. Properly executed avoidance also requires that a minimum of 6.5 acres of foraging habitat be permanently preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependant young) or a single unpaired resident bird. The configuration of the protected habitat must be approved by CDFG to qualify.
 - A burrowing owl sensitivity training program will be established. This program will be designed to educate construction personnel about the mitigation measures required for the execution of the project and will outline the construction protocols for burrowing owl mitigation. All construction personnel will attend the burrowing owl sensitivity training. The training will provide instruction on burrowing owl field identification and will include a detailed protocol of the actions personnel should take in the event that a burrowing owl is encountered in the offsite improvement areas during construction activities.
 - If destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (i.e., enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on protected lands near the project site.
 - If loss of foraging and burrow habitat is unavoidable and suitable burrow creation and/or enhancement is not feasible within the improvement areas; a minimum of 6.5 acres of foraging habitat per pair or unpaired resident bird should be acquired and permanently protected. The protected lands should be adjacent to occupied burrowing owl habitat and

at a location acceptable to CDFG. Consultation and approval would be required for this measure.

- If burrowing owls must be relocated out of the disturbance area, passive location techniques as outlined in the Staff Report are to be used. Such relocation should only take place during the non-breeding season, and the burrows shall be monitored daily until the owls have relocated to burrows created outside the impact area. A minimum of one or more weeks is necessary to accomplish the relocation and acclimation of the owls to alternate burrows.
- The project sponsor must provide funding for long-term management and monitoring of the protected lands. The monitoring plan must include success criteria, remedial measures, and an annual report to CDFG.

Mitigation Measure 6.5: 404 Permit, Section 401 Water Quality Certification, and Purchase of Credits. Mitigation Measure 6.5 applies to Impacts 6.4 and 6.5.

The Tribe shall obtain a 404 Permit from the USACE, and a Section 401 Water Quality Certification from the RWQCB for impacts to wetlands and other waters of the U.S. along Athens Avenue in the offsite improvement area.

Mitigation credits for temporary and permanent direct and indirect impacts to vernal pool branchiopod habitat shall be purchased from a USFWS-approved habitat mitigation bank. Current USFWS mitigation compensation guidelines within USFWS-approved offsite conservation banks include a 2:1 ratio for preservation for direct or indirect impacts to vernal pool species and a 1:1 ratio for habitat creation for direct impacts to vernal pool species (USFWS, 1996). The purchase of wetland credits will fully compensate for any impacts to vernal pools and seasonal wetlands and impacts to potential federal listed vernal pool branchiopods, vernal pool dependent special-status plant species, and WST, a species of concern. Evidence of the purchase of wetland mitigation credits shall be provided to the USACE prior to wetland impacts.

Table 6-5 provides a summary of preservation and creation acreages necessary to mitigate for wetland features with presumed presence of federal listed vernal pool species directly and indirectly impacted by the proposed offsite improvement area. The preservation and creation acreages are based on the direct and indirect impact acreages identified in **Table 6-4**.

**TABLE 6-5
MITIGATION FOR OFFSITE ENVIRONMENTAL IMPACTS TO WETLANDS**

Mitigation Type	Temporary and Permanent Direct Impacts (acres)	Indirect Impacts (acres)	Total Mitigation (acres)
Preservation (2:1)	0.2	5.59	5.79
Creation (1:1)	0.1	N/A	0.1

Source: AES, 2007

In addition to the proposed mitigation described above, the following measures will be taken to minimize impacts to potential jurisdictional wetlands and other waters of the U.S. in the vicinity of the offsite improvement area:

- Temporary high-visibility construction fencing shall be installed around wetlands and any drainage features outside of the construction area. Fencing shall be located as far as feasible from the edge of wetlands and riparian habitats and installed prior to any construction. The fencing shall remain in place until all construction activities within the improvement area have been completed.
- Staging areas shall be located away from the fenced wetland habitat. Temporary stockpiling of excavated or imported material shall occur only in approved construction staging areas. Excess excavated soil shall be used onsite or disposed of at a regional landfill or other appropriate facility.
- Standard precautions shall be employed by the construction contractor to prevent the accidental release of fuel, oil, lubricant, or other hazardous materials associated with construction activities into jurisdictional features.