4.4 BIOLOGICAL AND NATURAL RESOURCES

This section assesses the impacts of the proposed Projects on biological and natural resources. This section also describes and summarizes applicable plans, policies, and regulations for biological and natural resources.

Scoping Issues Addressed

During the scoping period for the proposed Projects, two public scoping meetings were conducted and written comments were received from agencies and the public. The following issues related to biological and natural resources were raised by the Imperial Irrigation District (IID) and the California Department of Fish and Game (CDFG) are addressed in this section:

- The Draft Environmental Impact Report (EIR) should address impacts on IID's drains. One-third of the water delivered to agricultural users is discharged into the IID's drainage system. Reduction in field drainage due to land use conversion has an incremental impact on both drain water quality and the volume of water in the drain and the habitat (flora and fauna) bordering the drainage path to the Salton Sea. Reduction in field drainage also affects the elevation of the Salton Sea, the shoreline habitat, and exposed acreage that in turn may have air quality issues.

- Additionally, certain drains that drain directly to the Salton Sea have been identified as desert pupfish habitat (Cyprinodon macularius) and thus require additional protections under state and federal Endangered Species Acts (ESAs).

- IID Water facilities that could be impacted are the "O" Lateral and the "N" Drain.

- Any construction or operation on IID property or within its existing and proposed right-of-way (ROW) or easements would require an encroachment permit.

The following issues related to biological and natural resources were raised by the California Department of Fish and Game and are addressed in this section:

- The proposed Project site is located in potential habitat for the Western Burrowing Owl (*Athene cunicularia*). This species is designated as California Species of Special Concern. Section 15380 of the California Environmental Quality Act (CEQA) requires the lead agency to treat sensitive species as though they were listed, if the species meets the criteria for listing described in the section. The Department believes that the proposed Project could further the decline of the above sensitive species. This species must be treated as though it were listed and appropriate avoidance, mitigation, and compensation for impacts need to be identified.

- Unavoidable impacts to the Western Burrowing Owl should be mitigated through acquisition and protection, in perpetuity, of high quality biological habitat. In addition, surveys and mitigation should be consistent with the 1995 Department Staff Report on Burrowing Owl Mitigation.

- The Department opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains. All wetlands and watercourses, whether intermittent or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations.

- The Department is emphasizing in comment letters on projects with impacts to lakes or streambeds that alternatives and mitigation measures must be addressed in CEQA certified documents prior to submittal of an application of a Streambed Alteration Agreement (SAA). Any information which is supplied to the Department after the CEQA process is complete will not have been subject to the public review requirements of CEQA.

- In order for the Department to process a SAA agreement, the CEQA-certified documents must include an analysis of the impacts of the proposed Project on the lake or streambed, an analysis of the biological resources present on the site, copies of biological studies conducted on the site, biological survey methodology, and a discussion of any alternative, avoidance, or mitigation measures which will reduce the impacts of the proposed development to a level of insignificance. In addition, a discussion of potential adverse impacts from any increased runoff, sedimentation, soil erosion, and/or pollutants on streams and watercourses on or near the Project site, with mitigation measures proposed to alleviate such impacts must be included in the CEQA certified documents.

Applicant's Reports and Survey Results

Information used in preparing this section and in the evaluation of potential impacts on biological and natural resources was supported by field data provided in the 2010 and 2011 Biological Resources Technical Reports prepared between July 2010 and December 2011 and are contained in Appendix D. Specifically, Barrett's Biological Surveys (Barrett's) prepared the following reports:

- Biological Resources Technical Report (dated July 2010), which included focused western burrowing owl surveys of the proposed geothermal well pads and internal access routes for HR-2 (Appendix D-1). The burrowing owl surveys were completed by Barrett's on July 3rd, July 4th and July 5th 2010;

- A Biological Resources Technical Report (dated December 2011), which addressed biological resources within the southern 80 acres of the Hudson Ranch 2 Project area (i.e. southern 80-acres of APN 022-010-0009-000). This report also included focused western burrowing owl surveys completed on December 23rd and December 24th, 2011 (Appendix D-2);

- A Biological Resources Technical Report (dated October 2011), which included general biological surveys, a focused burrowing owl survey and a preliminary U.S. Waters jurisdictional delineation

were conducted in the fall, 2011 within the road right-of-way along McDonald Road, between Highway 111 and English Road (Appendix D-3). A focused western burrowing owl survey was completed on September 21, 2011. The survey area also included the possible turn lane areas north and south of McDonald Road along Highway 111

These documents are contained in Volume II (Technical Appendix) of this EIR.

4.4.1 EXISTING SETTING

REGIONAL SETTING

The HR-2 and SmCP-2 Project sites are located within the Colorado Desert ecoregion, an area with vegetation and habitat that has adapted to an arid sub-tropical climate (U.S. Forest Service [USFS] 1998). Elevations within this ecoregion range from 230 feet below sea level at the Salton Sea to 2,200 feet above sea level at the boundary with the Peninsular Ranges. Vegetation in the ecoregion is supported by an average annual precipitation of approximately 5.5 inches (USFS 1998). Average high temperatures recorded at El Centro range from 70 degrees Fahrenheit (°F) in January to 107°F in July. Average low temperatures range from 40°F in January to 75°F in July (Western Regional Climate Center 2011).

The County of Imperial is located on the Pacific Flyway for migratory waterfowl, shorebirds, and songbirds. Although this area is considered to be part of the Colorado Desert, approximately 500,000-acres of the Colorado Desert in the County of Imperial, including the Project sites, have been converted to agricultural use (Barrett 2010). The irrigation system in the Imperial Valley attracts many bird species that are typically found in agricultural areas, including waterfowl, gulls, herons, cranes, ibises, egrets, doves, quail, sparrows, juncos, and finches. Some raptor species forage in this area as well, particularly the western burrowing owl (*Athene cunicularia hypugea*), which also uses burrows in many of the irrigation canals and drains.

Small mammals occupy habitat along the canals and drains. Some of the common species include western harvest mouse (*Reithrodontomys megalotis*), house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), valley pocket gopher (*Thomomys bottae*), brush rabbit (*Sylvilagus bachmani*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and muskrat (*Ondatra zibethicus*). Surrounding desert areas provide habitat for these species as well as larger mammalian species such as black-tailed jackrabbit (*Lepus californicus*), mule deer (*Odocoileus hemionus*), wild burro (*Equus asinus*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), and mountain lion (*Puma concolor*).

Reptiles typically associated with the Colorado Desert may occur in Imperial Valley agricultural areas. Some common species include Sonoran gopher snake (*Pituophis catenifer affinis*), western diamond-backed rattlesnake (*Crotalus atrox*), Marcy's checkered gartersnake (*Thamnophis marcianus marcianus*), and Great Plains toad (*Anaxyrus cognatus*).

Project Sites

Habitat on the Project sites primarily consists of agricultural land. In the past, portions of the Project site were used to grow alfalfa. At the time of the publication of the NOP, the agricultural fields on the Project sites were fallow and not being irrigated; the ground had been disked with little to no vegetation or it was bare ground interspersed with non-native annual grasses.

Multiple irrigation canals and drains are located just north and south of the Project site. The "O" Drain is located north of the Project sites and north of McDonald Road. The "O" Lateral is located immediately north of the Project sites and the "N" Drain is located immediately south of the Project Sites. The "N" Drain empties into the "O" Drain just west of the Project sites. There are small patches of ruderal vegetation (plant species first to colonize disturbed land) found along and within IID's "O" Lateral and "N" Drain on the north and south ends of the Project site, as well as within dry canals running in a north-south direction between the "O" Lateral and the "N" Drain.

Plants found within these areas include salt cedar (*Tamarix sp.*), quail bush (*Atriplex sp.*), and a few small patches of cattails (*Typha sp.*). While cattails are considered hydrophytic vegetation (one indicator of wetland habitat), the few small patches of cattails in the Project sites are associated with manmade canals. Man-made canals are not considered wetlands because wetland hydrology would no longer exist if irrigation were to be terminated (U.S. Army Corps of Engineers [USACE] 1987).

Wildlife species abundance and diversity are closely linked with habitat types present, though abundance and distribution may vary by season. In the Project area, where the dominant habitat is sparsely vegetated fallow agricultural lands and canals and drains, several wildlife species use this landscape for foraging, including burrowing owl (*Athene cunicularia*), red-winged blackbird (*Agelaius phoeniceus*), savannah sparrow (*Passerculus sandwichensis*), meadowlark (*Sturnella neglecta*), killdeer (*Charadrius vociferus*), great white egret (*Casmerodius albus*), mourning doves (*Zenaida macroura*), and cattle egret (*Bubulcus ibis*), among others. Small mammals have been observed either on or near the Project site, including cottontail (*Sylvilagus audubonii*), raccoon, round-tailed ground squirrel (*Spermophilus tereticaudus*), striped skunk, and muskrat.

The Project sites have been used for agriculture during recent years. Accordingly, the presence of special status plant species (i.e., species listed as threatened or endangered pursuant to either the state or federal ESAs, those designated as species of special concern, and/or those on various non-government organization "watch" lists owing to various sources of concern for the species' conservation status) is highly unlikely. However, several special status species could occur in the Project area.

Although a search of the California Natural Diversity Database (CNDDB) did not show any special status plants within 5 miles of the Project sites, a review of the Biological Resources Technical Report County of Imperial for the Hudson Ranch Power II, LLC Geothermal Flash Power Project (Appendix D-1), the Biological Resources Technical Report, County of Imperial, California for the Hudson Ranch II Southern 80-acres (Appendix D-2), and the Biological Resources Technical Report, for the McDonald Road Paving (Hwy

111 to English Road) (Appendix D-3), showed 14 special status species potentially occurring on the Project site. Table 4.4-1 lists the special status wildlife species that have the potential to occur within the proposed HR-2 and SmCP-2 Project sites and their federal and/or state status. This list was identified in the 2010 and 21011 Biological Resources Technical Reports and verified by a search of the CNDDB.

Special Status Wildlife Species with Potential to Occur at the Project Site

Amphibians and Reptiles

Couch's spadefoot toad (*Scaphiopus couchii*) – SC

Couch's spadefoot toad is a California species of special concern found in southeast California, east of the Algodones Dunes and north to San Bernardino County. This species is typically observed in deserts and arid regions of grassland, prairie, mesquite, creosote bush, thorn forest, and sandy washes that are able to maintain temporary rain pools that last at least seven days for breeding and metamorphosis

(CaliforniaHerps.com 2011). It is typically observed at elevations from sea level to 5,900 feet above sea level. Couch's spadefoot toad has not been observed within the Project site. The nearest known occurrence of Couch's spadefoot toad was an observation made 4.1 miles from the Project sites in 2007 (California Natural Diversity Database 2012) (Figure 4.4-1). Habitat conditions for the species do not occur on-site. Therefore, this species has a low potential of occurring in the Project site.

Sonoran desert toad (*Bufo alvarius*) – SC

The Sonoran desert toad also is a California species of special concern. It is thought to have been extirpated and no specimens have been collected or observed in California since 1955. Historical observations were in desert lowland washes, irrigation ditches, temporary pools, and in upland areas. While limited Sonoran desert toad habitat conditions exist on-site, the last recorded observation of this species was in 1916, 2.9 miles from the Project site (CNDDB 2012) (Figure 4.4-1). Therefore, this species has a low potential to occur in the Project sites if it has not been extirpated.

San Sebastian leopard frog (*Rana yavapaiensis*) – SC

The San Sebastian leopard frog is a California species of special concern. This frog historically ranged from San Felipe Creek east to the lower Colorado River Valley. Isolated populations may remain in the Imperial Valley and the San Felipe Creek drainage, but it is likely that it has been extirpated from the California portion of its range (CaliforniaHerps.com 2011). This species was observed in slackwater aquatic habitats, such as in the San Sebastian Marsh, approximately 30 years ago, but has not been reported in that area since (CaliforniaHerps.com 2011). On-site aquatic habitat is limited and the last observation of this species was in 1940 at a location 3.4 miles from the Project site 3.4 miles from the Project site (CNDDB 2012) (Figure 4.4-1). Based on limited habitat and no sightings of this species in the past 70 years, this species has a low potential to occur in the Project sites if it has not already been extirpated.

TABLE 4.4-1 SPECIAL STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING IN THE PROJECT AREA

COMMON NAME (SCIENTIFIC NAME)	STATUS [1]	POTENTIAL TO OCCUR IN THE PROJECT AREA[2]	PROJECT IMPACTS
AMPHIBIANS AND REPTILES			
Couch's spadefoot toad (*Scaphiopus couchii*)	SC	Low	Less than significant
Sonoran desert toad (*Bufo alvarius*)	SC	Low	Less than significant
San Sebastian leopard frog (*Rana yavapaiensis*)	SC	Low	Less than significant
FISH			
Desert pupfish (*Cyprinodon macularius*)	FE, SE	Low	Less than significant
Razorback sucker (*Xyrauchen texanus*)	FE, SE	Low	Less than significant
BIRDS			
Yuma clapper rail (*Rallus longirostris yumanensis*)	FE, ST	Low; No suitable habitat on-site	No Impact
California black rail (*Laterallus jamaicensis corturniculus*)	ST	Low; No suitable habitat on-site	No Impact
Burrowing owl (*Athene cunicularia*)	SC	High; Observed in 2011	Less than significant with mitigation
Merlin (*Falco columbarius*)	SC	Moderate	Less than significant
Crissal thrasher (*Toxostoma crissale*)	SC	Low, Scarce suitable habitat	Less than significant
Gull-billed tern (*Sterna nilotica*)	SC	Low; No suitable habitat on-site	No Impact
Black skimmer (*Rynchops niger*)	SC	Low; No suitable habitat on-site	No Impact
Yellow warbler (*Dendroica petechia brewsteri*)	SC	Low; No suitable habitat on-site	No Impact
MAMMALS			
American badger (*Taxidea taxus*)	SC	Low	Less than significant with mitigation

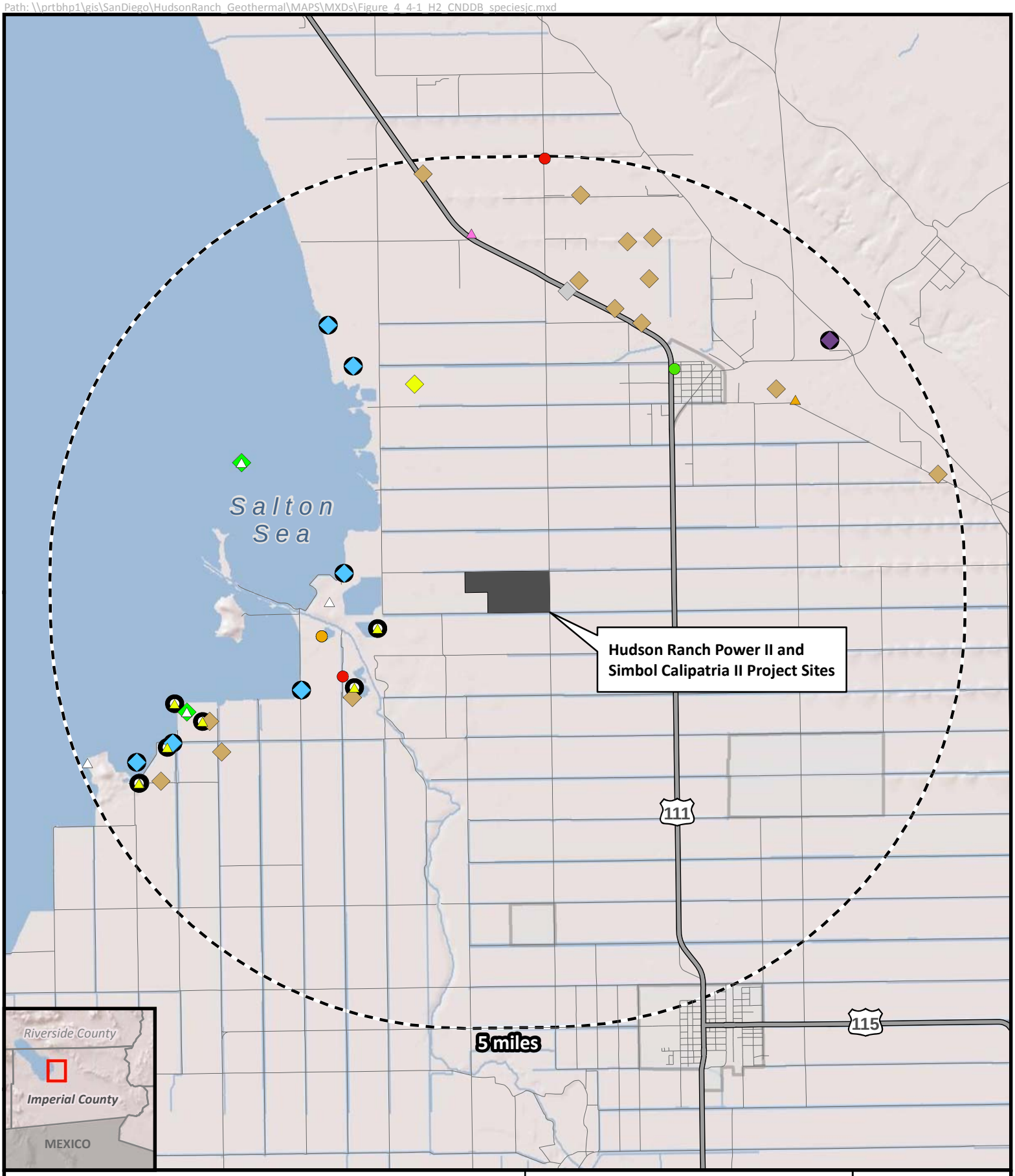
Sources: CNDDB 2012; Barrett 2010

Notes:

[1] FE = Federal endangered; SE = State endangered; ST = State threatened; SC = California species of special concern.

[2] Potential for occurrence ranking is based on the following criteria:

High = Recent or historical record of the species occurring within the Project sites or within 1 mile of the Project sites and/or the habitat requirements for the species occur within Project site
Moderate = either a recent or historical record exists of the species within 1 mile of the Project sites or the habitat requirements for the species occur within the Project site
Low = No recent or historical records exist of species occurring within the Project sitesor within 1 mile of Project site, and/or the habitats needed to support the species on the site are of poor quality



Hudson Ranch Power II
CUP #G10-0002
& Simbol Calipatria II
CUP #12-0005
Recorded Occurrences of Special-Status Species within a Five-Mile Radius of the Project Sites

Figure 4.4-1

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Miles

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Fish

Desert pupfish (*Cyprinodon macularius*) – FE, SE

The desert pupfish is a federally listed and state-listed endangered species. The desert pupfish range includes the basin of the lower Colorado and Gila rivers, from southern Arizona to southeastern California and eastern Baja California, and the Sonoyta River of northern Sonora, Mexico (Sutton 1999). Desert pupfish are observed throughout the Salton Basin, inhabiting springs, seeps, and slow-moving streams. Desert pupfish populations are remnants of those that inhabited ancient Lake Cahuilla. The range of this species has been dramatically reduced by habitat modifications and the introduction of exotic fishes. Desert pupfish have been recorded in a few saline pools along the Salton Sea's edge, some irrigation drains flowing into the Salton Sea, and portions of the Salt and San Felipe creeks, which are both tributaries to the western side of the Salton Sea and not in the Project area. Desert pupfish have not been observed within the Project area. The nearest known occurrence of this species is an observation 1.5 miles from the Project site that was recorded in 2006 (CNDDB 2012) (Figure 4.4-1). The Supplement to the IID Water Conservation and Transfer Project EIR/EIS for the Managed Marsh Complex (IID 2008), notes that pupfish are found in the lowest reaches of the O Drain, from the Salton Sea to the first check structure, which is located about 2,000 feet upstream of the Salton Sea (IID, 2008). It also noted that pupfish do not occur in the O Drain immediately adjacent to the Project site, which is located (approximately one mile) above the first check structure (IID 2008, p. 3.2-14)). Therefore, this species has a moderate potential to occur in the Project area.

Razorback sucker (*Xyrauchen texanus*) – FE, SE

The razorback sucker is a federally listed and state-listed endangered species. It is one of the largest suckers in North America, growing up to 13 pounds and more than 3 feet long. It is known to occur in the lower Colorado River watershed, but only in Lake Mojave, upstream in Lake Mead and the Grand Canyon, and downstream sporadically on the mainstem and associated impoundments and canals (U.S. Fish and Wildlife Service [USFWS] 1991). This species was observed 4.4 miles from the Project site in 1974 (CNDDB 2012) (Figure 4.4-1). However, this fish is restricted to aquatic habitat with at least intermittent connection to the Colorado River without barriers. Because of the distance of the Project site from the Colorado River and the number of check dams in irrigation canals of the Imperial Valley, the potential for this species to occur in the Project sites is low.

Birds

Yuma clapper rail (*Rallus longirostris yumanensis*) – FE, ST

The Yuma clapper rail is federally listed as endangered and state-listed as threatened. This freshwater marsh bird typically inhabits mosaics of vegetated areas interspersed with shallow open water areas (USFWS 2011). Yuma clapper rails have not been observed within the Project sites. The nearest known occurrence of Yuma clapper rail is a 2006 observation located 1.1 miles from the Project site (CNDDB 2012) (Figure 4.4-1). Yuma clapper rail utilize habitat in freshwater marshes dominated by cattail or bulrush

(USFWS 2011). A few small patches of cattail exist on-site, but because this habitat is limited and there is no visible surface water in the cattail habitat, it is unlikely that Yuma clapper rail would utilize this habitat (Roberts 2011). Because ideal habitat conditions for this species do not occur on-site and marsh habitat is extremely limited, this species has a low potential of occurring in the Project sites.

California black rail (*Laterallus jamaicensis corturniculus*) – ST

The California black rail is a state-listed threatened (ST) species. It is found throughout the San Francisco Bay Area, from the Sacramento and San Joaquin river deltas to the coast, to Baja California, the Salton Sea, and the lower Colorado River. At the Salton Sea and along the lower Colorado River, north of Yuma, this species typically inhabits saltwater, brackish, and freshwater marshes (California Department of Fish and Game [CDFG] 2012a). The California black rail has not been observed in the Project area. The nearest known occurrence of a California black rail was an observation 4.4 miles from the Project site in 2006 (CNDDB 2012) (Figure 4.4-1). Marsh habitat is extremely limited in the Project site and consists of a few small patches of cattails with no visible water in the cattail habitat. Therefore, this species has a low potential to occur in the Project site.

Western burrowing owl (*Athene cunicularia*) – SC

The Western burrowing owl is listed as a California species of special concern and is found throughout the state. Historically, this species occurred in pasturelands and grasslands throughout California, but in recent times it has been found in agricultural and desert areas with open vegetation communities. According to the CNDDB, the nearest known occurrence of western burrowing owl was a 2006 observation 1.7 miles from the Project site (CNDDB 2012) (Figure 4.4-1). However, suitable habitat exists for burrowing owls in the Project site, and owls and active burrows have been recently observed on-site (Appendix D). Therefore, the Western burrowing owl has a high potential to occur in the Project site. The technical surveys found 22 burrowing owls and 17 active burrows in the HR-2 and SmCP-2 Project site.

Table 4.4-2 lists the number of active burrows and burrowing owls found in the HR-2 and SmCP-2 Project sites. Figures 4.4-2 and 4.4-3 show the locations of active burrows, inactive burrows and the number of burrowing owls found during the surveys (Appendix D).

TABLE 4.4-2 RESULTS OF BURROWING OWL SURVEYS

AREA	TYPE	PROPERTY	BUFFER	TOTAL
HR-2 Site	Individuals	3	17	20
	Burrows	3	10	13
Additional 80 Acres	Individuals	1	1	2
	Burrows	1	3	4
Subtotal	Individuals	4	18	22
	Burrows	4	13	17

TABLE 4.4-2 RESULTS OF BURROWING OWL SURVEYS

AREA	TYPE	PROPERTY	BUFFER	TOTAL
McDonald Road Paving	Individuals	0	16	16
	Burrows	0	13	13
TOTAL	Individuals	4	34	38
	Burrows	4	26	30

Sources: Barrett, 2010; 2011a; 2011b

Merlin (*Falco columbarius*) – SC

Merlin is a California species of special concern. Although this species is seldom found in open deserts, its range extends throughout most of the western half of the state at elevations below 3,900 feet. It is a rare winter migrant in desert habitats (CDFG .2012a. However, it is probably more common in the Salton Sea area than it is in other parts of the desert because the Merlin typically frequent shorelines during the winter to catch shorebirds as prey. This species has not been observed within the Project area. The nearest known occurrence of Merlin was a 2007 observation 3.6 miles from the Project site (CNDDB 2012) (Figure 4.4-1). Although this species remains a rare inhabitant of the Colorado Desert, it has a moderate potential to occur because of the Project site's proximity to the Salton Sea and the suitable foraging habitat that exists on-site.

Crissal thrasher (*Toxostoma crissale*) – SC

The Crissal thrasher is a California species of special concern. This species typically inhabits dense thickets of shrubs or low trees in desert riparian and desert wash habitats (CDFG 2012a). It has not been documented in the Project area The nearest known occurrence of Crissal thrasher was an observation 1.8 miles from the Project site recorded in 1969 (CNDDB 2012) (Figure 4.4-1). Suitable habitat does not exist in the Project sites. Therefore, the Crissal thrasher has a low potential to occur.

Gull-billed tern (*Sterna nilotica*) – SC

The gull-billed tern is a California species of special concern. This summer resident of the United States is typically observed in salt marshes, estuaries, lagoons, and open coastal areas while foraging over marshes, pastures, farms, and plowed fields (CDFG 2012a.). This species has not been documented in the Project area. The nearest known occurrence of a gull-billed tern was an observation 3.6 miles from the Project site that was recorded in 1998 (CNDDB 2012) (Figure 4.4-1). While gull-billed terns will sometimes forage plowed fields and agricultural lands, the Project site does not contain sufficient marsh habitat for foraging. Therefore, this species has a low potential to occur.

Black skimmer (*Rynchops niger*) – SC

The black skimmer is a California species of special concern. This species is a fairly common summer resident of the Salton Sea that forages on small fishes and crustaceans in shallow water. Roosting takes place on sandy beaches or gravel bars and this species is unlikely to wander far from the Salton Sea (CDFG 2012a.). Observations have not been recorded in the Project area. The nearest known occurrence of black skimmer was an observation 3 miles from the Project site that was recorded in 1973. A more recent occurrence of a black skimmer is a 1998 observation 3.6 miles from the Project site (CNDDB 2012) (Figure 4.4-1). Because this species does not wander far from the Salton Sea, this species has a low potential to occur in the Project sites.

Yellow warbler (*Dendroica petechia brewsteri*) – SC

The yellow warbler is a California species of special concern. This species is commonly found in riparian deciduous habitats in summer and, when migrating, uses woodland, forest, and shrub habitats as cover (CDFG 2012a.). This species has not been observed within the Project area. The nearest known occurrence of a yellow warbler is an observation 2.3 miles from the Project site that was recorded in 1952 (CNDDB 2012) (Figure 4.4-1). Suitable habitat does not exist in the Project area and the species has not been observed within 5 miles of the Project site since 1952. Therefore, this species has a low potential to occur.

Mammals

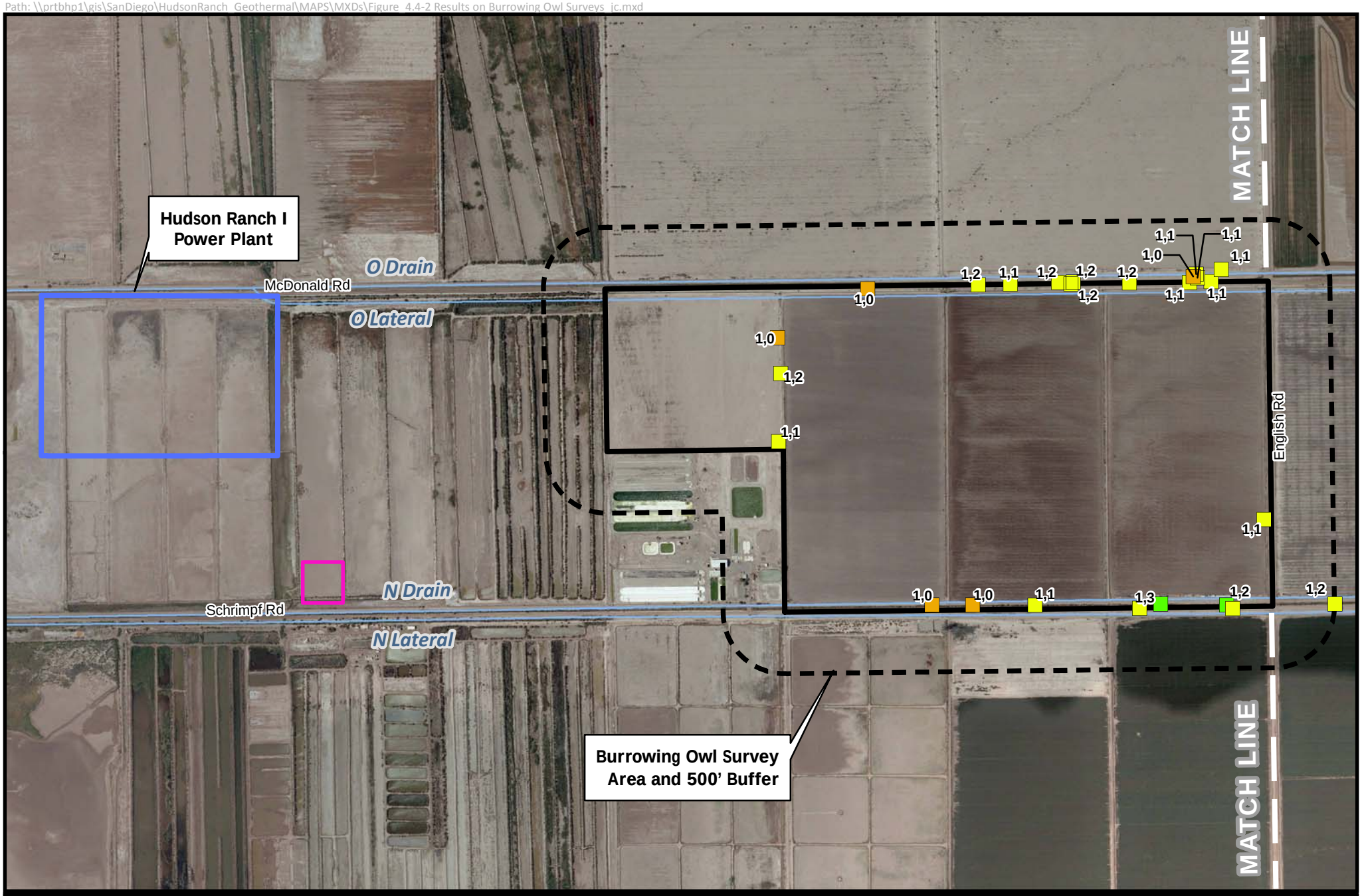
American badger (*Taxidea taxus*) – SC

American badger is a California species of special concern. This species is an uncommon but permanent resident of much of California and is most abundant in the drier, open stages of most shrub, forest, and herbaceous habitats (CDFG 2012a.). The badger frequently uses new and old burrows for cover. American badgers have not been documented in the Project area. The nearest known occurrence of American badger is an observation 1.8 miles from the Project site that was recorded in 1937 (CNDDB 2012) (Figure 4.4-1). Because suitable habitat does not exist in the Project area and the species has not been observed within 5 miles of the Project site since 1937, this species has a low potential to occur in the Project site.

Adjacent Areas

The Salton Sea is a vital link in the Pacific Flyway as birds migrate along this coastal corridor. The Sonny Bono Salton Sea National Wildlife Refuge, located 2.75 miles southwest of the Project site, on the southeastern shore of the Salton Sea, helps support the bird population. The Salton Basin is important to migratory bird species because the area provides ample food sources during migrations. The Salton Sea also provides habitat for several species of fish including the introduced tilapia (*Tilapia* spp.) and the native desert pupfish, which is now federally listed and state-listed as endangered. Surface water resources are limited in the vicinity of the Project site.

Path: \\prtbhp1\gis\SanDiego\HudsonRanch_Geothermal\MAPS\MXDs\Figure_4.4-2 Results on Burrowing Owl Surveys_jc.mxd



Burrowing Owl Survey Area
500 ft Buffer
HR I Power Plant
Proposed IID Substation

0,0 # of Burrows, # of Owls
Innactive Burrowing Owl Burrow
Burrowing Owl Burrow
Burrowing Owl and Burrow

Source: Barrett's Biological Surveys, December 2011 & Barrett's Biological Surveys, July 2010

Hudson Ranch Power II CUP #G10-0002 & Simbol Calipatria II CUP #12-0005

Results of Burrowing Owl Surveys- HR-2 & SmCP-2 Projects

Figure 4.4-2

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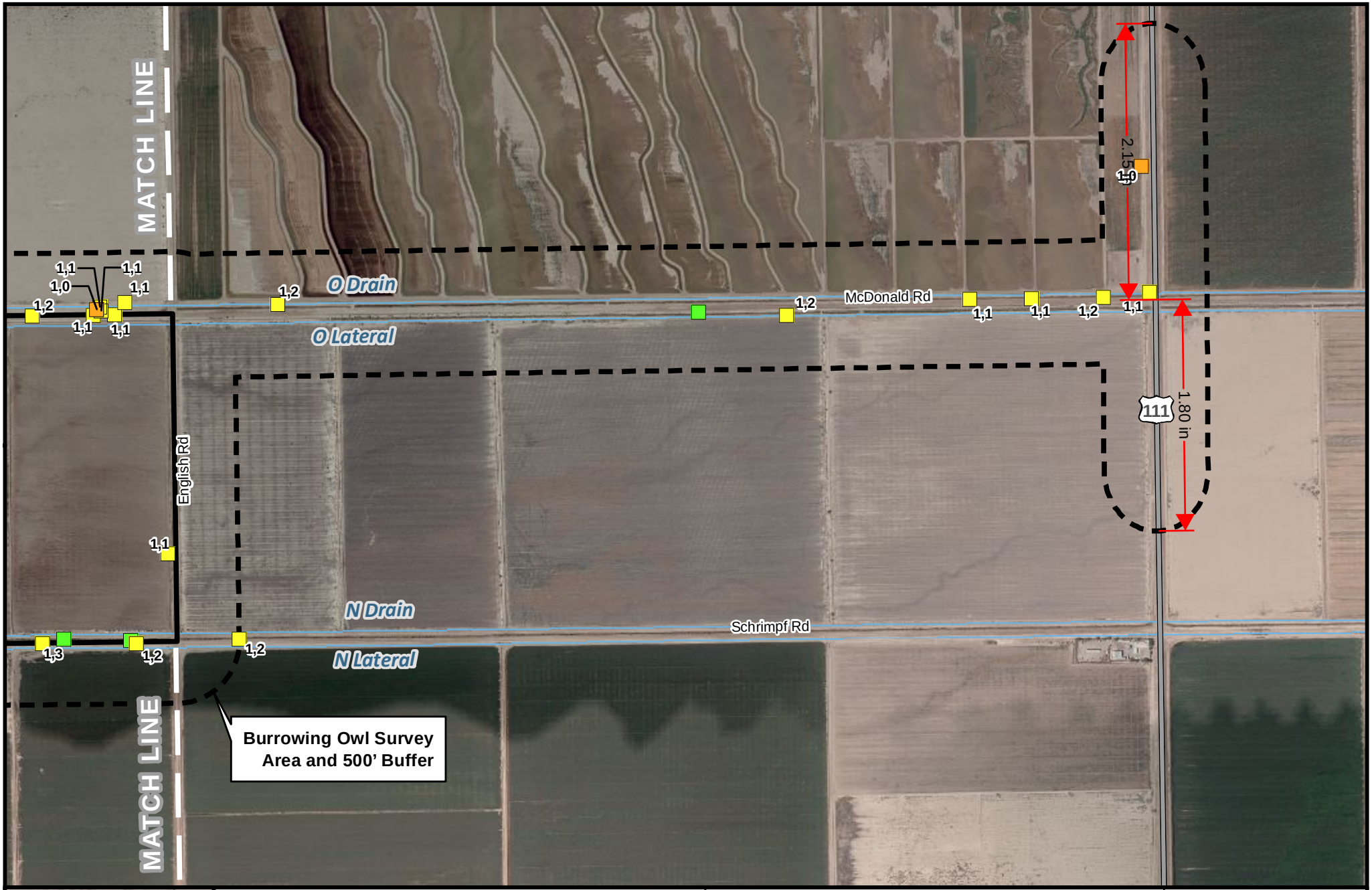

Burrowing Owl Survey Area

500 ft Buffer

0,0 # of Burrows, # of Owls

Innactive Burrowing Owl Burrow

Burrowing Owl Burrow

Burrowing Owl and Burrow

Source: Barrett's Biological Surveys, December 2011 & Barrett's Biological Surveys, July 2010

Hudson Ranch Power II CUP #G10-0002 & Simbol Calipatria II CUP #12-0005

Results of Burrowing Owl Surveys- Proposed McDonald Road Paving

Figure 4.4-3

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Irrigation drains in the region can provide surface water that desert pupfish inhabit. However, they are largely limited to the lower reaches (below the first check structure) of 29 agricultural drains directly connected to the Salton Sea (IID, 2008, p. 3.2-4).

4.4.2 REGULATORY SETTING

FEDERAL AND STATE

Endangered Species Act

The ESA, as amended, Section 7 (a)(2), directs that each federal agency shall, in coordination with the Secretary of the Interior, ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat for any endangered or threatened species. The ESA specifically prohibits "take" (i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) without a permit. The USFWS determines and maintains a list of protected species and is the regulatory agency responsible for implementation and enforcement of the ESA.

If a proposed plan has the potential to affect a listed species or designated critical habitat, formal consultation is required, except when the USFWS concurs, in writing, that a proposed plan "is not likely to adversely affect" listed species or designated critical habitat (50 Code of Federal Regulations [CFR] Sections 402.02 and 402.13).

During the Section 7 consultation process, the federal lead agency makes a determination as to whether a proposed plan is likely to jeopardize the continued existence of a listed species or destroy or adversely modify designated critical habitat. The lead agency seeks concurrence from the USFWS. The consultation concludes with a biological opinion and an incidental take statement issued by the USFWS.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 United States Code [U.S.C.] 703-711) is administered by the USFWS. The Act prohibits the taking, killing, possession, and transportation of migratory birds, their eggs, and nests. Section 3513 of the California Department of Fish and Game (CDFG) Code adopts the MBTA's provisions. The MBTA has no provision for allowing unauthorized take. However, the USFWS focuses enforcement on take occurrences where all reasonable, prudent, and effective take-avoidance measures were not identified and implemented. Almost all migratory bird species are protected by the MBTA (836 species in all), with the exception of non-native species and certain game birds.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) makes it illegal to take bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*) or to trade in eagle parts, eggs, or feathers. Take has also been broadly interpreted to include altering or disturbing nesting habitat. The USFWS has new regulations (Federal Register (FR) 74:46836-46879, September 11, 2009) that may eventually allow renewable energy projects to receive bald or golden eagle take permits for programmatic actions that are consistent with the USFWS goal of stable or increasing eagle breeding populations (USFWS 2010). Development of an Avian and Bat Protection Plan can demonstrate that a project is consistent with achieving USFWS goals. The USFWS is concerned by the decreasing golden eagle population trends shown in long-term studies; therefore, until further data shows that golden eagle populations can withstand additional take, the USFWS will only consider BGEPA take permit issuance for safety emergencies and projects that result in net benefits to golden eagles (USFWS 2010).

United States Fish and Wildlife Service Eagle Permits, 50 CFR Part 22.26-27

This section of the CFR requires a federal programmatic permit for the incidental take of bald or golden eagles where the take cannot practicably be avoided in the course of an otherwise lawful activity. The regulations have not yet been implemented, but permits may be required in the near future.

Section 404 of the Clean Water Act

The objective of the Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing pollution from point and nonpoint sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. The U.S. Environmental Protection Agency (EPA) is the regulatory agency that is responsible for the implementation and enforcement of the CWA. Section 404 of the CWA is the most significant federal program affecting the protection of wetlands and waters of the United States. This program regulates the discharge of dredged and fill material into waters of the United States and the conversion of wetlands. The basic premise of the Section 404 program is that no discharge of dredged or fill material can be permitted if the discharge would result in significant degradation of the nation's waters and wetlands. Another federal mandate regulating wetlands is Executive Order 11990, Protection of Wetlands, which requires federal agencies not only to minimize the destruction of wetlands but also to initiate action to enhance their natural functional values.

Section 401 of the Clean Water Act

The CWA, through Section 401, provides a way for states to control the degree of impact of discharges on state waters (including wetlands). The CWA requires that any applicant wishing to receive a federal license or permit to conduct an activity that might result in a discharge to navigable waters must obtain a Section 401 certification. States are integrating Section 401 into their overall water quality protection programs, which include protecting the physical, chemical, and biological health of state waters. Section 401

certification is granted by states, except in cases where states issue a waiver for the certification requirement

California Endangered Species Act

The California Endangered Species Act (CESA) establishes legal protection for state-designated threatened and endangered plants and wildlife. The protection is administered under the authority of the CDFG. The CDFG also identifies species of special concern as those that may become listed as threatened or endangered due to loss of habitat, limited distributions, and diminishing population sizes, or because the species is deemed to have scientific, recreational, or educational value. The CDFG recognizes that plants on California Native Plant Society (CNPS) Lists 1A, 1B, and 2, and some of the plants on Lists 3 and 4 qualify for listing under Sections 2062 and 2067 of the CESA. The CESA is only triggered when use of non-federal lands are required by and become part of a proposed plan.

California Department of Fish and Game Code, Sections 3511 and 5050

Sections 3511 and 5050 of the CDFG Code prohibit the take and possession of birds and reptiles listed as "fully protected." The fully protected classification was California's initial effort in the 1960s (pre-ESA) to identify and provide additional protection to those animals that were rare or faced possible extinction. The CDFG Code sections dealing with fully protected species state that these species "may not be taken or possessed at any time and no provision of this Code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected" species, although take may be authorized for necessary scientific research. In 2003, the Code sections dealing with fully protected species were amended to allow the CDFG to authorize take resulting from recovery activities for state-listed species. The administering agency is the CDFG.

California Food and Agriculture Code, Sections 7270-7224

The California Commissioner of Agriculture is granted the authority to regulate and manage non-native invasive weeds.

LOCAL

County of Imperial General Plan

The County of Imperial General Plan outlines the goals and policies for managing natural resources within County of Imperial. Table 4.4-3 identifies applicable policies related to biological and natural resources and addresses the HR-2 and SmCP-2 Projects' consistency with the General Plan.

TABLE 4.4-3 HR-2 AND SMCP-2 PROJECTS' CONSISTENCY WITH THE GENERAL PLAN'S BIOLOGICAL AND NATURAL RESOURCE POLICIES

GENERAL PLAN POLICIES	CONSISTENCY	ANALYSIS
LAND USE ELEMENT (LU)		
LU Agriculture Policy: The General Plan covers the unincorporated area of the County and is not site-specific; however, a majority of the privately owned land is located in the area identified by the General Plan as "Agriculture," which is also the predominant area where burrowing owls create habitats, typically in the brims and banks of agricultural fields. Program: Prior to approval of development of existing agricultural land, either in the form of one parcel or numerous adjoining parcels totaling 10-acres or more in size, a biological survey shall be prepared to mitigate potential impacts. The survey must be prepared in accordance with United States Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) regulations, or as amended.	Yes	Focused biological surveys were conducted at the HR-2 and SmC-2 Project sites for burrowing owls, and a general reconnaissance of the site was conducted for special status species. The surveys were conducted in accordance with USFWS and CDFG regulations. No special status species other than burrowing owls were documented on the HR-2 and SmCP-2 Project sites. Mitigation measures have been incorporated into the Projects' to reduce impacts on Western Burrowing owls and American Badgers to below a level of significance including avoidance, pre-construction surveys and worker training.
CONSERVATION AND OPEN SPACE ELEMENT (COSE)		
COSE Goal 2: The County will preserve the integrity, function, productivity, and long-term viability of environmentally sensitive habitats and plant and animal species.		See response to the LU Agriculture Policy, above.
COSE Objective 2.1: Conserve wetlands, fresh water marshes, and riparian vegetation.		No wetlands or freshwater marshes have been identified on the Project sites; however, there are a few small patches of cattails within the man-made canals.
COSE Objective 2.2: Protect significant fish, wildlife, plant species, and their habitats.		See response to the LU Agriculture Policy, above.
COSE Objective 2.3: Protect unique, rare, and endangered plants and animals and their habitats.		See response to the LU Agriculture Policy, above.
COSE Objective 2.4: Use the EIR process to identify, conserve and enhance unique vegetation and wildlife resources.		See response to the LU Agriculture Policy, above.

Sources: County of Imperial 1993, 2008

While this Draft EIR analyzes the Projects' consistency with the County of Imperial General Plan pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15125(d), the County of Imperial Planning Commission will determine the Projects' consistency with the General Plan.

4.4.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following CEQA Guidelines, Appendix G. An impact is considered significant if the project would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.

2. 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.

3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

4. 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.

5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

ENVIRONMENTAL PROTECTION MEASURES

Chapter 3 provides a complete list and description of environmental protection measures (EPMs) that the applicants have incorporated into their respective Projects to avoid or minimize impacts on all resources.

The following EPMs are included as part of the proposed HR-2 Project to minimize or avoid biological, natural resource, and water quality impacts:

- HR-2 EPM BR-1 Bird Flight diverters: Flight diverters will be installed on interconnection lines to limit bird mortality associated with new transmission lines in bird flyways. Flight diverters make transmission lines more visible to birds.

- HR-2 EPM BR-2: Avoidance of Drainages. Off-site drainages and riparian areas will be avoided to reduce impacts on sensitive habitats.

- HR-2 EPM BR-3: Placement of Facilities. Facilities will be placed on developed/disturbed lands to avoid additional impact on sensitive habitats.

- HR-2 EPM BR-4: Protection of Fish, Wildlife and Botanical Resources. Direct impacts on wildlife habitat and botanical resources will be minimized by clearing only the area required for site construction. Brush control will be conducted in a manner that will minimize adverse effects on resident wildlife. Fish habitat will be protected through prevention of erosion.

- HR-2 EPM WQ-4: Stormwater Pond Berm: The storm water pond will be surrounded by a berm to prevent flooding.

- HR-2 EPM WQ-5: Casing Shallow Portions of Production and Injection Wells: Casing the shallow portions of the production and injection wells will minimize the potential release of both construction-related drilling fluids and production-related geothermal brines to the shallow groundwater aquifer.

- HR-2 EPM WQ-6: Protective Pipeline Design and Detailed Inspection Routine: Production pipelines will be alloy-clad steel pipe. Injection pipelines will be constructed of concrete-lined carbon steel. Both will be routinely inspected to prevent potential releases.

- HR-2 EPM WQ-7: Production Wellheads: Piping at each production wellhead will be equipped with remotely operated electrical emergency shutoff valves and manual alloy isolation valves to prevent potential releases.

- HR-2 EPM WQ-8: Surface and Groundwater Quality Protection: Cemented concentric steel and alloy casing will prevent produced fluids from polluting surface water and groundwater. Only non-toxic, non-hazardous drilling mud will be utilized during drilling operations.

- HR-2 EPM WQ-9: Surface and Groundwater Quality Protection: Waste drilling mud and drill cuttings will be stored in the lined containment basin. Any runoff from the site will be discharged into the containment basin.

- HR-2 EPM NOI-1: Prevention of Noise: To abate noise pollution, mufflers will be utilized on engine-driven equipment during both construction and development operations.

The following EPMs are included as part of the proposed SmCP-2 Project to minimize or avoid biological and natural resource impacts:

- SMCP-2 EPM BR-1: Protection of Fish, Wildlife and Botanical Resources. Direct impacts on wildlife habitat and botanical resources will be minimized by clearing only the area required for site construction. Brush control will be conducted in a manner that will minimize adverse effects on resident wildlife. Fish habitat will be protected through prevention of erosion. Baseline

biological resources and burrowing owl surveys of the areas of potential surface disturbance for the Project were prepared.

- SMCP-2 EPM BR-2: Placement of Facilities. Facilities will be placed on developed/disturbed lands to avoid additional impact on sensitive habitats.

- SMCP-2 EPM BR-3: Avoidance of Drainages. Drainages and riparian areas will be avoided wherever practicable to reduce impacts on sensitive habitats.

- SMCP-2 EPM WQ-3: Stormwater Retention Basin. The plant site will be graded to direct uncontained surface water runoff toward a storm water retention basin.

- SMCP-2 EPM WQ-4: Stormwater Retention Basin Berm. The storm water retention basin will be protected by a berm to prevent off-site flooding into the basin.

- SMCP-2 EPM NOI-1: Prevention of Excessive Noise. The maximum projected noise sources during project construction would be from heavy construction equipment -- projected to be 83 dBA at 50 feet. Similarly, the maximum projected noise source during operations would be the cooling tower – projected to be 86 dBA at 5 feet. To abate noise pollution, mufflers will be utilized on engine-driven equipment during both construction and plant operations.

METHODOLOGY

This impact assessment is based on the Project description (Chapter 3.0), information described in the existing setting, and the standards of significance described above. Aerial photography was reviewed for potential habitat for the special status species identified from literature and database searches. The CNDDB was queried in 2012 for a list of special status plant and wildlife species that have been documented to occur within 5 miles of the Project site (CNDDB 2012). A database search was performed for special-status species within the Niland, California, USGS 7.5-minute quadrangle (USGS 1957) and the surrounding quadrangles in May 2012. Each species was ranked as having either a high, moderate, or low potential to occur. The potential for occurrence ranking was based on the following criteria:

- High: There is a recent or historical record of the species occurring within the Project site or within 1 mile of the Project site, and the habitat requirements strongly associated with the species occur within the Project site.

- Moderate: There is a recent or historical record of the species occurring within 1 mile of the Project site, or the habitat requirements associated with the species occur within the Project site.

- Low: There is no recent or historical record of the species occurring within the Project site or within 1 mile of the Project site, and/or the habitats needed to support the species on the site are of poor quality.

Locations of special status species occurrences recorded in the CNDDB as being within a 5-mile radius of the Project site are shown on Figure 4.4-1.

The CNPS electronic online inventory was also searched in May 2011 for rare or endangered plants that may occur within the Project site and in the surrounding vicinity (CNPS 2011). This query was performed for CNPS Lists 1A, 1B, and 2 special status plants:

- List 1A: Species presumed extinct in California.
- List 1B: Species considered rare or endangered in California and elsewhere.
- List 2: Species considered rare or endangered in California, but are more common elsewhere.

Table 4.4-1 above presents the results of the CNDDB queries for special status species that have the potential to occur within the Project site and surrounding vicinities.

In addition, the USFWS/Carlsbad Sensitive Species List, field guides, and personal contacts were utilized to further ascertain the potential for special status species at the Project site.

Three biological surveys of vegetation and animals and focused western burrowing owl surveys were completed by Marie Barrett, biologist, and Glenna Westbrook, field assistant, in July 2010, October 2011, and December 2011. Additionally, a reconnaissance-level survey was conducted by Jon Goin, Ecology and Environment, Inc. biologist, on April 21, 2011.

The analysis of impacts on biological resources presented in this section is based on previous biological investigations and reports as well as on available literature and maps from federal, state, and local agencies, the Project description (Chapter 3 of this EIR), existing plans for the proposed HR-2 and SmCP-2 Projects, and the CDFG Staff Reports on Burrowing Owl Mitigation (1995 and 2012), and the standards of significance described above. The assessment includes impacts within the Project sites. A conservative approach to biological resources was used to draft the biological resources analysis. This conservative approach assumed that all natural resources within the Project sites could be removed or otherwise negatively modified by activities allowed under the proposed HR-2 and SmCP-2 Projects' design plans, unless otherwise avoided. Project components were considered in order to evaluate and assess potential impacts on biological resources. Construction of the proposed HR-2 and SmCP-2 Projects has the potential to directly or indirectly affect biological resources as well as contribute to cumulative impacts. Potential impacts on biological resources can be temporary, long-term, or permanent, depending on the effect of Projects' activities on individual resources.

HR-2 IMPACTS AND MITIGATION MEASURES

Impact BIO-1: Implementation of the HR-2 Project could result in the loss of individuals or essential habitat for the western burrowing owl, a California species of special concern, and the American badger, a California species of special concern. It would not result in the loss of individuals or essential habitat for the desert pupfish, a federally listed and state-listed endangered species, nor would it result in a substantial loss of foraging habitat for the merlin, a California species of special concern.

Impact BIO-1a: Western Burrowing Owl: The HR-2 Project site supports nesting and foraging habitat for the western burrowing owl. Twenty-two individuals and 17 active burrows were found in the HR-2 and SmCP-2 Project sites and buffer area (Table 4.4-2), (Figure 4.4-2) and 16 individuals and 13 active burrows were found in the McDonald Road Paving area and buffer (Figure 4.4-3) during the surveys. A total of 38 individuals and 30 active burrows were found during the three surveys. If nesting owls are present within 250 feet of a work site during ground-disturbing construction activities, construction noise could result in nest abandonment. These impacts would be considered potentially significant.

MM BIO 1.1-1: Avoidance of Occupied Burrows

Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If occupied burrows are to be impacted by project-related activities, additional mitigation measures shall be applied (Mitigation Measures BIO 1.1-3 through 1.1-5).

Timing/Implementation: Prior to and during construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-2: Pre-Construction Surveys

Pre-construction surveys shall be conducted to identify any burrowing owls present on-site prior to ground-disturbing activities. All occupied burrows identified on-site shall be flagged for passive relocation (MM BIO 1.1-5). A pre-construction survey is valid for 30 days. If ground disturbing activities do not commence within 30 days of the completion of the burrowing owl survey, an additional survey may be required.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO1.1-3: Preparation of a Burrowing Owl Mitigation Plan

If pre-construction surveys determine that burrowing owls are on-site, a burrowing owl mitigation plan shall be prepared by a qualified biologist describing recommended site specific shelter-in-place measures, worker training, and/or other measures to ensure that project construction does not result in adverse impacts to the burrowing owl.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-4: Activities During Nesting Season

All occupied burrows identified off-site within 160 feet of construction activities outside of nesting season (September through January) and within 250 feet of construction activities during nesting season (February 1 through August 31) shall be buffered by hay bales, fencing (e.g. sheltering in place) or as directed by a qualified biologist and the CDFGCDFG..

Timing/Implementation: During construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-5: Passive Relocation Techniques

Owls present on the construction site (as identified during pre-construction surveys MM BIO 1.1-2) shall be moved away from the disturbance area using passive relocation techniques. Prior to commencement of relocation, a management plan shall be prepared and approved by CDFG. Relocation shall be completed between September 1 and January 31 (outside of breeding season). If it is not possible to complete relocation during this time period, refer to Mitigation Measure 1.1-1.

A minimum of one or more weeks is required to relocate the owls and allow them to acclimate to alternate burrows. Passive relocation techniques will follow

the CDFG Staff Report on Burrowing Owl Mitigation Guidelines (2012CDFG 2012b.) and include the following measures:

- Passive relocation will be conducted during the non-breeding season.
- Artificial burrows must be established within 100m of original burrow and adjacent foraging habitat surrounding the artificial burrow must be suitable and protected.
- Install one-way doors in burrow opening to temporarily or permanently evict burrowing owls and prevent burrow re-occupation. Leave doors in place for 48 hours to ensure owls have left the burrow.
- Allow one or more weeks for owls to acclimate to off-site burrows (refer to Mitigation Measure 1.1-7 below). Daily monitoring shall be required for the passive relocation period.
- Once owls have relocated off-site, collapse existing burrows to prevent reoccupation. Prior to burrow excavation, flexible plastic pipe shall be inserted into the tunnels to allow escape of any remaining owls during excavation. Excavation shall be conducted by hand whenever possible. Photographs of the excavation and closure of the burrow will be taken to demonstrate success and sufficiency.
- Impacted site will continually be made inhospitable to burrowing owls and fossorial mammals until construction is complete.
- Destruction of burrows shall occur only pursuant to a management plan approved by CDFG.
- Burrowing owls should not be excluded from burrows until: a Burrowing Owl Exclusion Plan is developed by a qualified biologist and approved by DFG; the permanent loss of burrow(s) and habitat is mitigated; site monitoring is conducted prior to, during, and after excavation to ensure take is avoided; and excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-6: Worker Training

Training for all construction personnel shall be conducted prior to the commencement of ground disturbing activities. Training shall include:

(1) description of burrowing owl;

(2) biology;

(3) regulations (CDFG/USFWS);

(4) contact information and standard operating procedure for when an owl is identified on-site by construction personnel.

All construction personnel shall have access to this information in a printed form (e.g. brochure or flyer posted in construction trailers, informational wallet card distributed to construction personnel, or other form).

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-7: Mitigation Plan for Burrows

Destruction of occupied burrows shall be mitigated through enhancement of existing unsuitable burrows (through enlargement or debris clearing) or creation of new burrows (by installation of artificial burrows) at a ratio of 2:1 on protected lands (mitigation lands). Prior to the destruction of burrows and/or the passive relocation of owls (Mitigation Measure 1.1-5), a MMRP shall be created and approved by the CDFG. The MMRP shall include:

- A specific site (mitigation lands) where owl burrows will be created and/or enhanced which is a minimum of 50 meters from the impacted area.

- A minimum of 6.5 acres of foraging habitat per displaced owl or pair of owls to be conserved in conjunction with the creation and enhancement of burrows.

- A conservation easement or other protection for the mitigation lands which will ensure that the created burrows, foraging habitat (and their associated owl population) will be conserved in-perpetuity

- Specific success criteria and management directives to ensure the

success of the burrow creation and enhancement (Example: 40% occupancy by passively relocated burrowing owls).

- Compatibility with any passive relocation plan (See Mitigation Measure 1.1-5) approved by the wildlife agencies.
- Annual reporting requirements.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

Significance after Mitigation: Upon implementation of mitigation measures MM BIO-1.1-1 through MM BIO-1.1-7 and environmental protection measures EPM BR-1 and EPM BR-4 western burrowing owls and their burrows would be avoided or mitigated. Therefore, impacts would be less than significant under this criterion.

Impact BIO-1b: American Badger: Implementation of the proposed HR-2 Project could result in the loss of individuals or essential habitat for the American badger, a California species of special concern. If burrows are present within 160 feet of a work site during ground-disturbing construction activities, construction noise may result in burrow abandonment. These impacts would be considered potentially significant.

MM BIO-1.2: Avoidance of American Badger Burrows

Any American badger burrows found during pre-construction burrowing owl surveys should be avoided whenever possible. When destruction of occupied burrows is unavoidable, hand-excavation is an option if occupied dens cannot be avoided, but alternatives shall be considered due to potential danger to biologists. Dens shall be hand–excavated only before or after the breeding season (February 1–May 30). Any relocation of American badger shall occur only pursuant to a management plan approved by CDFG.

Timing/Implementation: During construction and operation.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department.

Significance after Mitigation: Upon implementation of mitigation measure MM BIO-1.2 and environmental protection measures EPM BR-4 and EPM NOI-1, impacts on the American badger

would be less than significant because the burrows of American badgers, if present, would be avoided or the badgers would be passively relocated off the construction site.

Impact BIO-1c: Desert Pupfish: Implementation of the proposed HR-2 Project would not result in the loss of individuals or essential habitat for desert pupfish, a federally listed and state-listed endangered species.

Desert pupfish are known to occur within the lower-most reaches of several drains directly connected (i.e., not pumped) to the south Salton Sea (IID 2008). There are no pupfish near the Project site; the nearest known occurrence of this species is an observation 1.5 miles from the Project site; this was recorded in 2006 (CNDDB 2012) (Figure 4.4-1).

The proposed HR-2 Project would require an average of 50,000 gallons of water per day for well drilling and construction and up to 1,200 acre-feet per year (AFY) during operations; the water would be obtained from the IID "O" lateral canal. The total average annual irrigated acreage (approx. 520,000 acres) of the Imperial unit uses 5.25 AFY of water per acre, which equals 2,730,000 AFY water. The water use from the HR-2 Project would be .04% (1200 AFY / 2,730,000 AFY x100 = .04%). The water use would not significantly reduce the amount of field drainage and return flow of water to the Salton Sea through the "N" and "O" drains.

Therefore, no impacts to desert pupfish would occur under this criterion.

Mitigation Measures: None required.

Impact BIO-1d: Merlin: Implementation of the HR-2 Project would not result in a substantial loss of foraging habitat for the merlin, a California species of special concern. This species has been documented within four miles of the Project site and often migrates and forages over large areas. However, merlin are an infrequent species in desert areas, and the 52 acres of the Project site that would be temporarily converted from agricultural land and developed with the HR-2 geothermal power plant facilities represent a fraction of available foraging habitat in the region. Moreover, approximately 145 acres of the Project site will remain undisturbed and suitable for foraging by the merlin, however infrequently. With implementation of environmental protection measures HR-2 EPM BR-1, HR-2 EPM BR-4, and HR-2 EPM NOI-1, this impact is considered less than significant.

Mitigation Measures: None required.

Impact BIO-2: Implementation of the HR-2 Project would not result in 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.

During construction, off-site drainages and riparian areas would be avoided to prevent impacting sensitive habitats. Upon implementation of HR-2 EPMs BR-2, BR-4, HAZ-3, WQ-1 through WQ-4, WQ-8, and WQ-9, there would be no impact.

Mitigation Measures: None required.

Impact BIO-3: Implementation of the HR-2 Project would not result in a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, and coastal wet lands) through direct removal, filling, hydrological interruption, or other means. No wetlands or freshwater marshes have been identified on the project site. Manmade canals are not considered wetlands because wetland hydrology would no longer exist if irrigation were to be terminated (U.S. Army Corps of Engineers [USACE] 1987). Upon implementation of environmental protection measures HR-2 EPM's BR-2, BR-3, HAZ-3, WQ-1, WQ-2, WQ-4, WQ-8, and WQ-9, there would be no impact.

Mitigation Measures: None required.

Impact BIO-4: Implementation of the HR-2 Project would not substantially interfere with movement of any native fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

Wildlife corridors are narrow strips of habitat linking larger habitats that would otherwise be separated by human or natural barriers such as roads, developed areas, mountains, unsuitable habitats, and water bodies. Wildlife corridors include tracts connecting habitats used by the same population of a species during different seasons as well as tracts that allow individuals to cross between two different populations of a species, thereby enabling genetic exchange between those two populations. Wildlife movement corridors are an important element of resident species home ranges.

The Project site is not within an established migratory route for any species, although the lateral canals and drains on the north and south ends of the Project site are used by wildlife as movement corridors. The proposed HR-2 Project would not disrupt the path of these lateral canals and drains and would not block wildlife movement. During Project construction, drainages and riparian areas would be avoided (HR-2 EPM BR-2) and a SWPPP would be implemented. During Project operations stormwater would be collected in a retention basin (HR-2 EPM WQ-3).

In addition, a berm would prevent off-site flooding into the stormwater retention basin (HR-2 EPM WQ-4).

With implementation of HR-2 EPMs BR-1, BR-3, WQ-3 and WQ-4 would protect water quality and reduce accidental release of pollutants that could affect pupfish populations downstream, therefore, this impact is considered less than significant.

Mitigation Measures: None required.

Impact BIO-5: Implementation of the proposed HR-2 Project would not result in a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

There are no adopted tree ordinances or other preservation policies or ordinances for biological resources that would apply to the Project site. Therefore, there would be no impact.

Mitigation Measures: None required.

Impact BIO-6: Implementation of the proposed HR-2 Project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or any adopted biological resources recovery or conservation plan of any federal or state agency.

Currently there is no adopted habitat conservation plan, natural community conservation plan, or any other conservation or recovery plan in effect for the Project site, in whole or in part. Therefore, there would be no impact.

Mitigation Measures: None required.

SMCP-2 IMPACTS AND MITIGATION MEASURES

Impact BIO-1: Implementation of the SmCP-2 Project could result in the loss of individuals or essential habitat for the western burrowing owl, a California species of special concern, and the American badger, a California species of special concern. It would not result in the loss of individuals or essential habitat for the desert pupfish, a federally listed and state-listed endangered species, nor would it result in a substantial loss of foraging habitat for the merlin, a California species of special concern.

Impact BIO-1a: Western Burrowing Owl: The SmCP-2 Project site supports nesting and foraging habitat for the western burrowing owl. Twenty-two individuals and 17 active burrows were found in the entire HR-2 and SmCP-2 Project site (Table 4.4-2),

(Figure 4.4-2) and 16 individuals and 13 active burrows were found in the McDonald Road Paving area, (Figure 4.4-3) during the surveys. A total of 38 individuals and 30 active burrows were found during the three surveys. If nesting owls are present within 250 feet of a work site during ground-disturbing construction activities, construction noise could result in nest abandonment. These impacts would be considered potentially significant.

MM BIO 1.1-1: Avoidance of Occupied Burrows

Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If occupied burrows are to be impacted by Project related activities, additional mitigation measures shall be applied (Mitigation Measures BIO 1.1-3 through 1.1-5).

Timing/Implementation: Prior to and during construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-2: Pre-construction surveys

Pre-construction surveys shall be conducted to identify any burrowing owls present on-site prior to ground-disturbing activities. All occupied burrows identified on-site shall be flagged for passive relocation (MM BIO 1.1-5). A pre-construction survey is valid for 30 days. If ground disturbing activities do not commence within 30 days of the completion of the burrowing owl survey, an additional survey may be required.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO1.1-3: Preparation of a Burrowing Owl Mitigation Plan

If pre-construction surveys determine that burrowing owls are on-site, a burrowing owl mitigation plan shall be prepared by a qualified biologist describing recommended site specific shelter-in-place measures, worker training, and/or other measures to ensure that Project construction does not result in adverse impacts to the burrowing owl.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-4: Activities During Nesting Season

All occupied burrows identified off-site within 160 feet of construction activities outside of nesting season (September through January) and 250 feet of construction activities during nesting season (February 1 through August 31) shall be buffered by hay bales, fencing (e.g. sheltering in place) or as directed by a qualified biologist and the wildlife agencies.

Timing/Implementation: During construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-5: Passive Relocation Techniques

Owls present on the construction site (as identified during pre-construction surveys MM BIO 1.1-2) shall be moved away from the disturbance area using passive relocation techniques. Prior to commencement of relocation, a management plan shall be prepared and approved by CDFG. Relocation shall be completed between September 1 and January 31 (outside of breeding season). If it is not possible to complete relocation during this time period, refer to Mitigation Measure 1.1-1.

A minimum of one or more weeks is required to relocate the owls and allow them to acclimate to alternate burrows. Passive relocation techniques will follow the CDFG Staff Report on Burrowing Owl Mitigation Guidelines (CDFG 2012b.) and include the following measures:

- Passive relocation will be conducted during the non-breeding season.
- Artificial burrows must be established within 100m of original burrow and adjacent foraging habitat surrounding the artificial burrow must be suitable and protected.
- Install one-way doors in burrow opening to temporarily or permanently evict burrowing owls and prevent burrow re-occupation. Leave doors in place for 48 hours to ensure owls have left the burrow.

- Allow one or more weeks for owls to acclimate to off-site burrows (refer to Mitigation Measure 1.1-7 below). Daily monitoring shall be required for the passive relocation period.

- Once owls have relocated off-site, collapse existing burrows to prevent reoccupation. Prior to burrow excavation, flexible plastic pipe shall be inserted into the tunnels to allow escape of any remaining owls during excavation. Excavation shall be conducted by hand whenever possible. Photographs of the excavation and closure of the burrow will be taken to demonstrate success and sufficiency.

- Impacted site will continually be made inhospitable to burrowing owls and fossorial mammals until construction is complete.

- Destruction of burrows shall occur only pursuant to a management plan approved by CDFG.

- Burrowing owls should not be excluded from burrows until: a Burrowing Owl Exclusion Plan is developed by a qualified biologist and approved by DFG; the permanent loss of burrow(s) and habitat is mitigated; site monitoring is conducted prior to, during, and after excavation to ensure take is avoided; and excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-6: Worker Training

Training for all construction personnel shall be conducted prior to the commencement of ground disturbing activities. Training shall include: (1) description of burrowing owl; (2) biology; (3) regulations (CDFG/USFWS); (4) contact information and SOP for when an owl is identified on-site by construction personnel. All construction personnel shall have access to this information in a printed form (e.g. brochure or flyer posted in construction trailers, informational wallet card distributed to construction personnel, or other form).

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department and CDFG.

MM BIO 1.1-7: Mitigation Plan for Burrows

Destruction of occupied burrows shall be mitigated through enhancement of existing unsuitable burrows (through enlargement or debris clearing) or creation of new burrows (by installation of artificial burrows) at a ratio of 2:1 on protected lands (mitigation lands). Prior to the destruction of burrows and/or the passive relocation of owls (Mitigation Measure 1.1-5), a MMRP shall be created and approved by the CDFG. The MMRP shall include:

- A specific site (mitigation lands) where owl burrows will be created and/or enhanced which is a minimum of 50 meters from the impacted area.
- A minimum of 6.5 acres of foraging habitat per displaced owl or pair of owls to be conserved in conjunction with the creation and enhancement of burrows.
- A conservation easement or other protection for the mitigation lands which will ensure that the created burrows, foraging habitat (and their associated owl population) will be conserved in-perpetuity
- Specific success criteria and management directives to ensure the success of the burrow creation and enhancement (Example: 40% occupancy by passively relocated burrowing owls).
- Compatibility with any passive relocation plan (See Mitigation Measure 1.1-5) approved by the wildlife agencies.
- Annual reporting requirements.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: County of Imperial Planning and Development Services

Significance after Mitigation: Upon implementation of SmCP-2 mitigation measures MM BIO-1.1-1 through MM BIO-1.1-7 and EPMs BR-1 and BR-3, western burrowing owls and their burrows would be avoided or mitigated. Therefore, impacts would be less than significant under this criterion.

Impact BIO-1b: American Badger: Implementation of the SmCP-2 Project could result in the loss of individuals or essential habitat for the American badger, a California species of special concern. If burrows are present within 160 feet of a work site during

ground-disturbing construction activities, construction noise may result in burrow abandonment. These impacts would be considered potentially significant.

MM BIO-1.2: Avoidance of American Badger Burrows

Any American badger burrows found during pre-construction burrowing owl surveys should be avoided whenever possible. When destruction of occupied burrows is unavoidable, hand-excavation is an option if occupied dens cannot be avoided, but alternatives shall be considered due to potential danger to biologists. Dens shall be hand–excavated only before or after the breeding season (February 1–May 30). Any relocation of American badger shall occur only pursuant to a management plan approved by CDFG.

Timing/Implementation: During construction and operation.

Enforcement/Monitoring: County of Imperial Planning and Development Services Department.

Significance after Mitigation: Upon implementation of mitigation measure MM BIO-1.2 and environmental protection measures SmCP-2 EPMs BR-1 and NOI-1, impacts on the American badger would be less than significant because the burrows of American badgers, if present, would be avoided or the badgers would be passively relocated off the construction site.

Impact BIO-1c: Desert Pupfish: Implementation of the SmCP-2 Project would not result in the loss of individuals or essential habitat for desert pupfish, a federally listed and state-listed endangered species.

Desert pupfish are known to occur within the lower-most reaches of several drains directly connected (i.e., not pumped) to the south Salton Sea (IID 2008). There are no pupfish near the Project site; the nearest known occurrence of this species is an observation 1.5 miles from the Project site; this was recorded in 2006 (CNDDB 2012) (Figure 4.4-1).

The proposed SmCP-2 Project would require an average of 50,000 gallons of water per day for construction and up to 800 acre-feet per year (AFY) during operations; the water would be obtained from the IID "O" lateral canal. The total average annual irrigated acreage (approx. 520,000 acres) of the Imperial unit uses 5.25 AFY of water per acre, which equals 2,730,000 AFY water. The water use from the SmCP-2 Project would be .02% (800 AFY / 2,730,000 AFY x100 = .03%).

The water use would not significantly reduce the amount of field drainage and return flow of water to the Salton Sea through the "N" and "O" drains.

Therefore, no impacts to desert pupfish would occur under this criterion.

Mitigation Measures: None required.

Impact BIO-1d: Merlin: Implementation of the SmCP-2 Project would not result in the loss of foraging habitat for the merlin, a California species of special concern.

This species has been documented within four miles of the Project site and often migrates and forages over large areas. However, merlin are an infrequent species in desert areas and the 48 acres of the Project site that would be temporarily converted from agricultural land and developed with SmCP-2 facilities represent a fraction of available foraging habitat in the region. Moreover, approximately 145 acres of the Project site will remain undisturbed and suitable for foraging by the merlin, however infrequently. With the implementation of SmCP-2 EPMs BR-1 and BR-2 and EPM NOI-1,, this impact is considered less than significant.

Mitigation Measures: None required.

Impact BIO-2: Implementation of the SmCP-2 Project would not result in 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.

During construction, off-site drainages and riparian areas would be avoided to prevent impacting sensitive habitats. Upon the implementation of EPMs BR-1 through BR-3, EPM GEO-1, EPM UTIL-1, EPM WQ-1 through WQ-4, there would be no impact.

Mitigation Measures: None required.

Impact BIO-3: Implementation of the SmCP-2 Project would not result in a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means. No wetlands or freshwater marshes have been identified on the project site. Manmade canals are not considered wetlands because wetland hydrology would no longer exist if irrigation were to be terminated (U.S. Army Corps of Engineers [USACE] 1987). Upon the implementation of EPMs BR-1 through BR-3, GEO-1, UTIL-1, WQ-1 through WQ-4, there would be no impact.

Mitigation Measures: None required.

Impact BIO-4: Implementation of the SmCP-2 Project site could substantially interfere with movement of any native fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

Wildlife corridors are narrow strips of habitat linking larger habitats that would otherwise be separated by human or natural barriers such as roads, developed areas, mountains, unsuitable habitats, and water bodies. Wildlife corridors include tracts connecting habitats used by the same population of a species during different seasons as well as tracts that allow individuals to cross between two different populations of a species, thereby enabling genetic exchange between those two populations. Wildlife movement corridors are an important element of resident species home ranges.

The Project site is not within an established migratory route for any species, although the lateral canals and drains on the north and south ends of the Project site are used by wildlife as movement corridors. The proposed HR-2 Project would not disrupt the path of these lateral canals and drains and would not block wildlife movement. During Project construction, drainages and riparian areas would be avoided (SmCP-2 EPM BR-3) and a SWPPP would be implemented. During Project operations water retention basin would collect stormwater (SmCP-2 EPM WQ-3). In addition, a berm would prevent off-site flooding into the stormwater retention basin (SmCP-2 EPM WQ-4).

With implementation of environmental protection measures SmCP-2 EPMs BR-1, BR-3, WQ-3 and WQ-4 would protect water quality and reduce accidental release of pollutants that could affect pupfish populations downstream, therefore, this impact is considered less than significant.

Mitigation Measures: None required.

Impact BIO-5: Implementation of the proposed SmCP-2 Project would not result in a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

There are no adopted tree ordinances or other preservation policies or ordinances for biological resources that would apply to the Project site. Therefore, there would be no impact.

Mitigation Measures: None required.

Impact BIO-6: Implementation of the proposed SmCP-2 Project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or any adopted biological resources recovery or conservation plan of any federal or state agency.

Currently there is no adopted habitat conservation plan, natural community conservation plan, or any other conservation or recovery plan in effect for the Project site, in whole or in part. Therefore, there would be no impact.

Mitigation Measures: None required.

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