DRAFT BIOLOGICAL RESOURCES TECHNICAL REPORT FOR THE IMPERIAL VALLEY TO DIXIELAND "ID" DOUBLE CIRCUIT 230-KV TRANSMISSION LINE AND EXPANSION OF DIXIELAND SUBSTATION IMPERIAL COUNTY, CALIFORNIA

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February 2011

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EXECUTIVE SUMMARY

AECOM performed biological resources studies for the Imperial Irrigation District (IID), the Applicant for the Imperial Valley to Dixieland "ID" Double Circuit 230-kilovolt (kV) Transmission Line and Expansion of Dixieland Substation project (project). A portion of the project is proposed on public lands managed by the Bureau of Land Management (BLM) in Imperial County, California, and the Applicant has submitted an application to BLM for a right-of-way (ROW) grant.

Three alignments are under evaluation, including a preferred alignment and two alternative alignments. The transmission line will consist of monopole structures. Depending on the final route chosen, span lengths will generally be 650 feet or 800 to 900 feet. In addition to a new transmission line, IID would construct a new 230-kV substation approximately 400 feet north of the IV Substation (proposed Liebert Substation) and expand the existing Dixieland Substation.

This Biological Resources Technical Report (BRTR) was prepared to support analysis under the Californian Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The lead agency for CEQA compliance is IID. The lead agency for NEPA compliance is BLM. A new 140-foot-wide ROW across BLM land is needed, in accordance with typical requirements for constructing transmission lines. This BRTR will also support project permitting from state and federal biological resources agencies (e.g., U.S. Fish and Wildlife Service [USFWS] and the California Department of Fish and Game [CDFG]).

A major focus of the biological investigation was potential impacts on 35 special-status animal species and 12 special-status plant species that were identified as having the potential to occur on or near the biological survey area (BSA). The BSA encompasses the three proposed alignments (16-foot-wide access road, pole foundations, and laydown areas), construction of the Liebert Substation, and expansion of the Dixieland Substation. These species are listed in Table S-1.

During spring and summer 2009, surveys were conducted in the BSA to map vegetation communities and general wildlife species. Rare plant species surveys were conducted in spring 2010. Protocol surveys for western burrowing owl (WBO) and flat-tailed horned lizard (FTHL) were conducted in spring and summer 2009. A survey for mountain plover (MOPL) using USFWS interim guidelines was conducted in winter 2011.These surveys were conducted in accordance with applicable regulations and in accordance with established survey protocols for various special-status species.

Table S-1
Special-Status Species

Common Name	Species Name	Sensitivity Status[1]	Habitat
Flat-tailed horned lizard	*Phrynosoma mcallii*	CDFG SSC, BLM sensitive, currently proposed for listing as threatened under the ESA	Typically occurs within sandy flats and valleys associated with creosote and white bursage Sonoran desert scrub.
Swainson's hawk	*Buteo swainsoni*	CESA threatened – however, migratory only on-site	Forages in grassland, shrubland, and agricultural areas. Nests in trees bordering agricultural fields, in wetland borders, and on abandoned farms.
Bald eagle	*Haliaeetus leucocephalus*	CESA endangered, CDFG fully protected, Bald and Golden Eagle Protection Act	Prefers habitats near bodies of open water with an abundance of fish, including seacoasts, rivers, large lakes, and oceans.
American peregrine falcon	*Falco peregrinus anantum*	CESA endangered, CDFG fully protected	Nests in a scrape, normally on cliff edges and on tall buildings or bridges.
California black rail	*Laterallus jamaicensis coturniculus*	CESA threatened, CDFG fully protected	Tidal emergent wetlands dominated by pickleweed, or in brackish marshes supporting bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass.
Yuma clapper rail	*Rallus longirostris yumanensis*	ESA endangered, CESA threatened, CDFG fully protected	Requires regenerating marsh for foraging, and mature stands of cattail and bulrush for nesting.
Southwest willow flycatcher	*Empidonax traillii extimus*	ESA endangered, CESA endangered	Nesting restricted to willow thickets. Also occupies other woodlands. Rare spring and fall migrant. Extremely localized breeding.
Mountain plover	*Charadrius montanus*	CDFG SSC, currently proposed for listing as threatened under the ESA	Heavily grazed native rangelands and use burned fields for night roosting.
Gila woodpecker	*Melanerpes uropygialis*	CESA endangered, WECO	Saguaro desert, riparian woodland, and residential areas.

Common Name	Species Name	Sensitivity Status[1]	Habitat
Colorado desert fringe-toed lizard	*Uma notate*	CDFG SSC, BLM sensitive	Restricted to areas containing fine, loose sand. Habitats include wind-blown sand dunes, desert washes, sandy riverbanks, sparse desert scrub, and dry lakes.
Least bittern	*Ixobrychus exilis*	CDFG SSC	Breed in emergent vegetation in freshwater marshes and are occasionally found in saltwater or brackish marshes.
Wood stork	*Mycteria americana*	CDFG SSC	Forage in shallow bays, marshy backwaters, canals, and drains.
Golden eagle	*Aquila chrysaetos*	CDFG fully protected, Bald and Golden Eagle Protection Act	Rolling foothills, mountain areas, sage-juniper flats, and desert.
Ferruginous hawk	*Buteo regalis*	CDFG SSC	Requires large foraging areas, grassland, agricultural fields. Uncommon winter resident.
Northern harrier	*Circus cyaneus*	CDFG SSC	Breed in marshes and grasslands and forage in grasslands, agricultural fields, wetlands, and open coastal sage scrub.
White-tailed kite	*Elanus leucurus*	CDFG fully protected	Open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands.
Lesser sandhill crane	*Grus canadensis canadensis*	CDFG SSC	Open fresh water wetlands.
Western burrowing owl	*Athene cunicularia hypugaea*	CDFG SSC, BLM sensitive	Found mainly in grassland and open scrub from the seashore to foothills. Also found in deserts, scrublands, and desert washes with suitable burrows. Requires open ground around burrow for foraging, with minimal vegetation covering burrow entrance.
Vermillion flycatcher	*Pyrocephalus rubinus*	CDFG SSC	Arid scrub, farmlands, parks, golf courses, desert, savanna, cultivated lands, and riparian woodland; usually found near water.

Common Name	Species Name	Sensitivity Status[1]	Habitat
Loggerhead shrike	*Lanius ludovicianus*	CDFG SSC	Occurs in semi-open country with utility posts, wires, and trees to perch on. Forages within open desert scrub, dry desert wash woodland, and rocky outcrops. Visual predator that prefers open ground for catching insects, small mammals, and lizards.
Crissal thrasher	*Toxostoma crissale*	CDFG SSC	Riparian scrub or woodland at lower elevations, and the low, dense scrub associated with arroyos.
Le Conte's thrasher	*Toxosstoma lecontei lecontei*	CDFG SSC	Desert washes, creosote bush scrub. Uncommon resident.
Yellow warbler	*Dendroica petechia*	CDFG SSC	Breeding restricted to riparian woodland. Spring and fall migrant, localized summer resident, rare winter visitor.
Yellow-breasted chat	*Icteria virens*	CDFG SSC	Early successional riparian habitats with a well-developed shrub layer and an open canopy. Nesting habitat is usually restricted to the narrow border of streams, creeks, sloughs, and rivers, and seldom forms extensive tracts.
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	CDFG SSC	Breed in marshes with tall emergent vegetation generally in open areas and edges over relatively deep water.
American badger	*Taxidea taxus*	CDFG SSC	Coastal sage scrub, mixed chaparral, grassland, oak woodland, chamise chaparral, mixed conifer, pinyon-juniper, desert scrub, desert wash, montane meadow, open areas, and sandy soils.
Desert kit fox	*Vulpes macrotis arsipus*	State Protected Fur-Bearing Mammal (PFM, per California Code of Regulations)	Arid open areas, shrub grassland, and desert ecosystems.

Common Name	Species Name	Sensitivity Status[1]	Habitat
California leaf-nosed bat	*Macrotus californicus*	CDFG SSC, BLM sensitive	Sonoran desert regions and roosts within warm caves, mines, and buildings. Forages within desert wash vegetation.
Pallid bat	*Antrozous pallidus*	CDFG SSC, BLM sensitive	Rocky arid deserts and canyonlands, grasslands, and coniferous forests. Roosts in crevices of rocky outcrops, caves, cliffs, mines, trees cavities, bridges, and vacant buildings.
Townsend's big-eared bat	*Corynorhinus townsendii*	CDFG SSC, BLM sensitive	Coniferous forests, deserts, prairies, riparian communities, active agricultural areas, and other habitat types. Roosts in caves, cavity-forming rock, abandoned mines, bridges, buildings, and hollow trees.
Yuma myotis	*Myotis yumanensis*	BLM sensitive	Riparian, arid scrublands, deserts, and forests. Roosts in bridges, buildings, caves, mines, and cliff crevices. Forages on aquatic emergent insects by bodies of water.
Western mastiff bat	*Eumops perotis*	CDFG SSC, BLM sensitive	Desert scrub, chaparral, oak woodlands, and conifer forests. Roosts under exfoliating rock slabs and in similar crevices of boulders and buildings. Forages over dry desert washes, flood plains, woodlands, forests, grasslands, and agricultural areas. Known to forage over agricultural fields in the Imperial Valley.
Pocketed-free-tailed bat	*Nyctinomops femorosaccus*	CDFG SSC	Crevices of rugged cliffs, high rocky outcrops, and slopes. Roosts include buildings, caves, and under roof tiles. Forages over desert scrub and pine-oak forests.

Common Name	Species Name	Sensitivity Status[1]	Habitat
Jacumba little pocket mouse	*Perognathus longimbris internationalis*	CDFG SSC	Desert riparian, desert scrub, desert wash, coastal scrub, and sagebush.
Southern grasshopper mouse	*Onchomys torridus Ramona*	CDFG SSC	Alkali desert scrub and desert scrub. Can also occur in succulent shrub, wash and riparian areas; coastal sage shrub, mixed chaparral sagebush, low sage, and bitterbush. Low to moderate shrub cover preferred.
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	CNPS 1B.1	Sandy areas in desert dunes, chaparral, and coastal scrub from 80–1,600 meters elevation.
Harwood's milkvetch	*Astragalus insularis* var. *harwoodii*	CNPS 2.2	Sandy areas in desert dunes and desert scrub from 0–710 meters elevation.
Pink fairy-duster	*Calliandra eriophylla*	CNPS 2.3	Sandy or rocky Sonoran desert scrub from 120–1,500 meters elevation.
Emory's crucifixion-thorn	*Castela emoryi*	CNPS 2.3	Playas and Sonoran and Mojavean desert scrub from 90–670 meters elevation.
Flat-seeded spurge	*Chamaesyce platysperma*	CNPS 1B.2	Desert dunes and sandy areas in Sonoran desert scrub from 65–100 meters elevation.
Annual rock-nettle	*Eucnide rupestris*	CNPS 2.2	Sonoran desert scrub from 500–600 meters elevation.
Baja California ipomopsis	*Ipomopsis effusa*	CNPS 2.1	Chaparral, Sonoran desert scrub in sandy areas, and alluvial fans from 0–100 meters elevation.
Brown turbans	*Malperia tenuis*	CNPS 2.3	Sandy areas in Sonoran desert scrub from 15–335 meters elevation.
Slender cottonheads	*Nemacaulis denudata* var. *gracilis*	CNPS 2.2	Coastal dunes, desert dunes, Sonoran desert scrub from 50–400 meters elevation.
Dwarf germander	*Teucrium cubense ssp. depressum*	CNPS 2.2	Desert dunes, playas, Sonoran desert scrub from 45–400 meters.
Thurber's pilostyles	*Pilostyles thurberi*	CNPS List 4.3	Sonoran desert scrub from 0–365 meters elevation.

Common Name	Species Name	Sensitivity Status[1]	Habitat
Ribbed cryptantha	*Cryptantha costata*	CNPS List 4.3	Desert dunes and sandy areas Mojavean and Sonoran deserts 60–500 meters elevation.

[1] Sensitivity Status Key
Federal Endangered Species Act (ESA)
State California Department of Fish and Game (CDFG)
California Endangered Species Act (CESA)
Species of Special Concern (SSC)
BLM Sensitive
California Native Plant Society (CNPS):
List 1B.1 Rare, threatened, or endangered in California and elsewhere. Fairly endangered in California.
List 2.1 Rare, threatened, or endangered in California, but more common elsewhere. Seriously endangered in California.
List 2.2 Rare, threatened, or endangered in California, but more common elsewhere. Fairly endangered in California.
List 2.3 Rare, threatened, or endangered in California, but more common elsewhere. Not very endangered in California.
List 4.3 Limited distribution (Watch List). Not very endangered in California.

Eleven vegetation communities and other cover types were identified within the BSA associated with each of the three proposed alignments: arrow weed scrub, desert dry wash woodland, desert saltbush scrub, mesquite bosque, Sonoran creosote bush scrub, tamarisk scrub, eucalyptus woodland, agricultural fields, developed, disturbed, and open water areas (Table 3 and Figure 3). The majority of the BSA is composed of Sonoran creosote bush scrub. Agricultural areas occur at the eastern side of the BSA. Two of the 11 vegetation communities are considered sensitive: desert dry wash woodland and mesquite bosque. These communities are considered sensitive and a high priority for inventory in the California Natural Diversity Database per CDFG's Vegetation and Mapping Program (CDFG 2003).

To date, no official jurisdictional delineation has been conducted within the BSA. A formal delineation will be conducted by an experienced delineator to determine impacts so that IID can apply for permits from the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and CDFG. Areas with potential to be subject to ACOE jurisdiction would include those "non-isolated" areas dominated by hydrophytic vegetation and exhibiting visible aboveground hydrology indicators. Wetland hydrology would be determined based on the presence of visible aboveground indicators. Presence of hydric soils would be assumed for areas that support hydrophytic vegetation and wetland hydrology. ACOE unvegetated Waters of the U.S. would be assumed for all areas of a defined water feature that lack wetland indicators yet exhibit ordinary high water marks. Areas with potential to be subject to CDFG jurisdiction would include

areas with wetland vegetation and/or evidence of stream flow. CDFG can also take jurisdiction over riparian/lacustrine vegetation and vernal swales.

Two special-status plant species were detected during the survey: Thurber's pilostyles (*Pilostyles thurberi*) (California Native Plant Society [CNPS] List 4.3) and ribbed cryptantha (*Cryptantha costata*) (CNPS List 4.3).

Thurber's pilostyles was detected as a parasitic plant on indigo bush (*Psorothamnus emoryii*) at two locations within the BSA. One of these sites was located to the southeast of the existing Imperial Valley Substation (IV) within the buffer area. The other site was located within the footprint of the preferred Alignment and Route Alternative 1, where the two alignments share the same BSA. Indigo bush is only present in some small stands, mostly in remnant desert wash habitats. Ten host plants were observed to have Thurber's pilostyles, fewer than half of the indigo bushes that were observed.

Ribbed crypthantha was detected as relatively common in loose drifting sandy areas of the southern portion of the BSA, north of the existing IV Substation and in the area of the proposed Liebert substation (common to all three alternatives). It is also located within the BSA for the preferred Alignment and Alternative 1 where the BSA for these two alignments diverge from Alternative 2. It occurs in association with loose sand plant species such as sand verbena (*Abronia villosa*), Spanish needle (*Palafoxia arida*), and primrose (*Oenothera deltoides*).

An FTHL individual and scat were detected within the buffer area for Route Alternative 1, and one unidentified horn lizard species was detected southwest of the Dixieland Substation. Thus, this species is present within the BSA. Two additional FTHLs were detected during Phase II WBO surveys within the Yuha Desert Management Area, and FTHL scat was found throughout suitable habitat within the management area (MA), further confirming FTHL presence.

The FTHL is currently proposed for listing under the federal Endangered Species Act (ESA) as a threatened species per an Arizona court ruling on November 3, 2009. This ruling reinstated the 1993 proposal (58 Federal Register [FR] 62624) to list the species and is currently undergoing a comment period, after which a final determination will be issued (75 FR 9377).

The FTHL is a CDFG designated Species of Special Concern and BLM Federal Sensitive Species.

According to the Flat-tailed Horned Lizard Rangewide Management Strategy (FTHLRMS), a multiplier is used to determine mitigation required to offset impacts by a project within an FTHL

MA (ICC 2003). The mitigation multiplier for impacts for this project would equal 6. Transmission line poles may attract birds, particularly providing perch sites for raptors and shrikes, which prey on FTHL, the long span of transmission lines would result in a fewer number of poles and so fewer and farther spaced poles for perching. The construction of the power lines, transmission towers, and dirt access roads may provide off-road enthusiasts access to other areas of the habitat, the long-term presence of the transmission poles and sporadic use of the maintenance road would have a lasting impact on the FTHL and its habitat. Currently, there is very little disturbance in the area because the proposed project bisects pristine FTHL habitat and does not follow existing dirt access roads. The project is expected to be in place for more than 10 years.

Therefore, habitat within the 140-foot ROW that occurs within the FTHL MA would be compensated at a ratio of 6:1. Compensation for habitat lost outside an FTHL MA would be compensated at a 1:1 ratio (ICC 2003). Indirect impacts to FTHL habitat outside the 140-foot ROW and inside the 1,000-foot survey buffer were also calculated based on a 6:1 ratio.

Surveys were conducted to detect the presence of wintering MOPL within the BSA. Surveys were conducted using the interim guidelines provided by the USFWS to the BLM. No MOPL were detected within the BSA. A regional survey conducted by the Natural History Museum of Los Angeles County (NHMLAC) reported that there were no detections of MOPL south of Interstate 8.

The MOPL was proposed for listing by the USFWS in 1999 and again in 2002. The USFWS withdrew its proposed listing on September 9, 2003 on the conclusion that the threats to the plover were not as significant as previously believed. On July 31, 2010, the USFWS issued a notice to open public comment for federal listing as threatened. The final listing determination for the mountain plover will occur no later than May 1, 2011. The mountain plover is a CDFG designated species of special concern and a BLM Sensitive Species.

Due to the lack of MOPL on the site it is anticipated that there would be no direct impact to the species.

A southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) has been recorded as occurring within the BSA foraging during spring migration.

The SWFL is federally listed as endangered, and all willow flycatchers in California, including the southwestern and two other subspecies (*E. t. brewsteri* and *E. t. adastus*) are state-listed as

endangered. Critical habitat was designated for the SWFL on October 19, 2005 in San Diego County, California, and in Arizona (USFWS 2005). No critical habitat was designated within Imperial County, California. USFWS published a recovery plan for SWFL in 2002, which includes within its recovery criteria an increase in the total known population to a minimum of 1,950 territories (equating to approximately 3,900 individuals), geographically distributed to allow proper functioning as meta-populations (USFWS 2002).

Implementation of the project within the 140 foot ROW would not have a direct impacts on the SWFL. Indirect impacts to the species are not likely to adversely affect SWFL with the implementation of avian avoidance and minimization measures.

At least 21 WBO (including at least three family groups and three unpaired resident WBO) were detected within 500-foot survey buffer surrounding the project site. Most WBO were detected along the eastern portion of the project site along Route Alternative 2 in areas bordering canals and agricultural fields. The locations of the WBOs detected during Phase II and III surveys can be found in Figures 5 and 6.

Mitigation measures to minimize impacts to WBO include preconstruction surveys that would be conducted at least 1 month before any ground-disturbing activities commence. The entire transmission line route would be walked and surveyed for WBO. Suitable burrow habitat within 150 meters of the ROW line would also be surveyed, and active burrows would be flagged. Additionally, a preconstruction survey would be conducted no more than 3 days before ground-disturbing activities are scheduled to commence; any additional active burrows found during this survey would be staked. If preconstruction surveys indicate the possibility of direct impacts to active burrows, construction practices and/or pole placement would be modified such that no direct impact occurs, or owls occupying these burrows would be passively relocated during the nonbreeding season before construction begins. All burrows within 100 feet of pole placements would be barricaded with hay bales to a distance of 10 feet on either side of the burrow and stacked to a height of two bales as a noise/disturbance mitigation barrier. If it is not feasible to avoid direct impact to an active burrow, construction in the area of active burrows would be delayed until owls using these burrows can be passively relocated during the nonnesting season (February 1 to September 1). All burrows that are located within 200 feet of a pole placement or are barricaded as a mitigation measure would be monitored weekly for activity or signs of owls vacating burrows. Owl numbers and locations of burrows known to have been vacated during construction, as well as any owls that are passively relocated as mitigation for project impacts, would be reported to CDFG. Status reports, including all burrowing owl survey reports, owl mitigation actions, and monitoring results, would be submitted to CDFG.

Three additional special-status wildlife species were incidentally detected during focused WBO and FTHL surveys: Gila woodpecker (*Melanerpes uropygialis*, state endangered), loggerhead shrike (*Lanius ludovicianus*, CDFG species of special concern), and northern harrier (*Circus cyaneus*, CDFG species of special concern). Targeted surveys were not conducted for these species. Gila woodpeckers were detected on numerous surveys using, and most likely breeding in (a pair and dispersing juveniles), trees in a private residence just south of the Dixieland Substation. They were noticed using wooden utility poles in the surrounding areas. Loggerhead shrikes were detected in various locations throughout the project site and are known to breed in surrounding habitat, primarily desert dry wash woodland. One northern harrier was observed flying over the southern portion of the project site toward agricultural fields and is not likely to breed on-site. The project's impact on special-status wildlife species would be mitigated to less-than-significant levels through implementation of avoidance, minimization, and mitigation measures.

No USFWS designated critical habitat for any plant or wildlife species occurs in the BSA.

Conference between BLM and USFWS will be necessary under Section 7 of the ESA to analyze potential impacts from the proposed project to FTHL and MOPL, both candidate federal listed species, and will involve preparation of a Biological Assessment. BLM will then issue a Conference Opinion for the proposed project.

This report addresses permanent, temporary, direct, and indirect impacts to biological resources in the BSA. The proposed project has the potential to have direct and indirect, permanent and temporary impacts to sensitive vegetation communities depending on the alternative chosen. Based on analyses conducted to date, impacts on biological resources would be significant, but, through implementation of avoidance, minimization, and mitigation measures, would be reduced to below a level of significance for most species.

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CHAPTER 1
INTRODUCTION

AECOM performed biological resources studies for the Imperial Irrigation District (IID) and the Bureau of Land Management (BLM), El Centro Field Office to analyze the potential impacts to biological resources associated with constructing a 230-kilovolt (kV) Imperial Valley (IV) Substation to the Dixieland Substation transmission line (referred to as the ID Line) and substation improvements between the IV Substation and Dixieland Substation. These combined components involving the 230-kV transmission line and substation improvements will be referred to as the proposed project. This proposed project would be located in unincorporated Imperial County, southwest of El Centro, California (Figures 1 and 2). The ID Line would be located within a 140-foot-wide right-of-way (ROW) through both federal and nonfederal lands.

Three alignments are under evaluation for the ID Line: a Preferred Alignment and two alternative alignments (Route Alternative 1 and Route Alternative 2). The transmission line would consist of single-monopole structures. Depending on the final route chosen, span lengths would generally be 650 feet or 800 to 900 feet. In addition to a new transmission line, IID would construct a new 230-kV substation approximately 400 feet north of the IV Substation (proposed Liebert Substation) and expand the existing Dixieland Substation. All three alignments that are under evaluation would connect to the Dixieland Substation to the north and then run south to connect to the IV Substation.

1.1 PROJECT LOCATION

The proposed project is located in Imperial County, California, southwest of El Centro. The alignments under consideration extend from the north end of the IV Substation northward through the proposed Liebert Substation. From that point, the alignments follow different tracks to the north and west, crossing Interstate 8 (I-8), and eventually reaching the Dixieland Substation north of I-8. The alignments cross federal lands managed by BLM, IID lands, and private property.

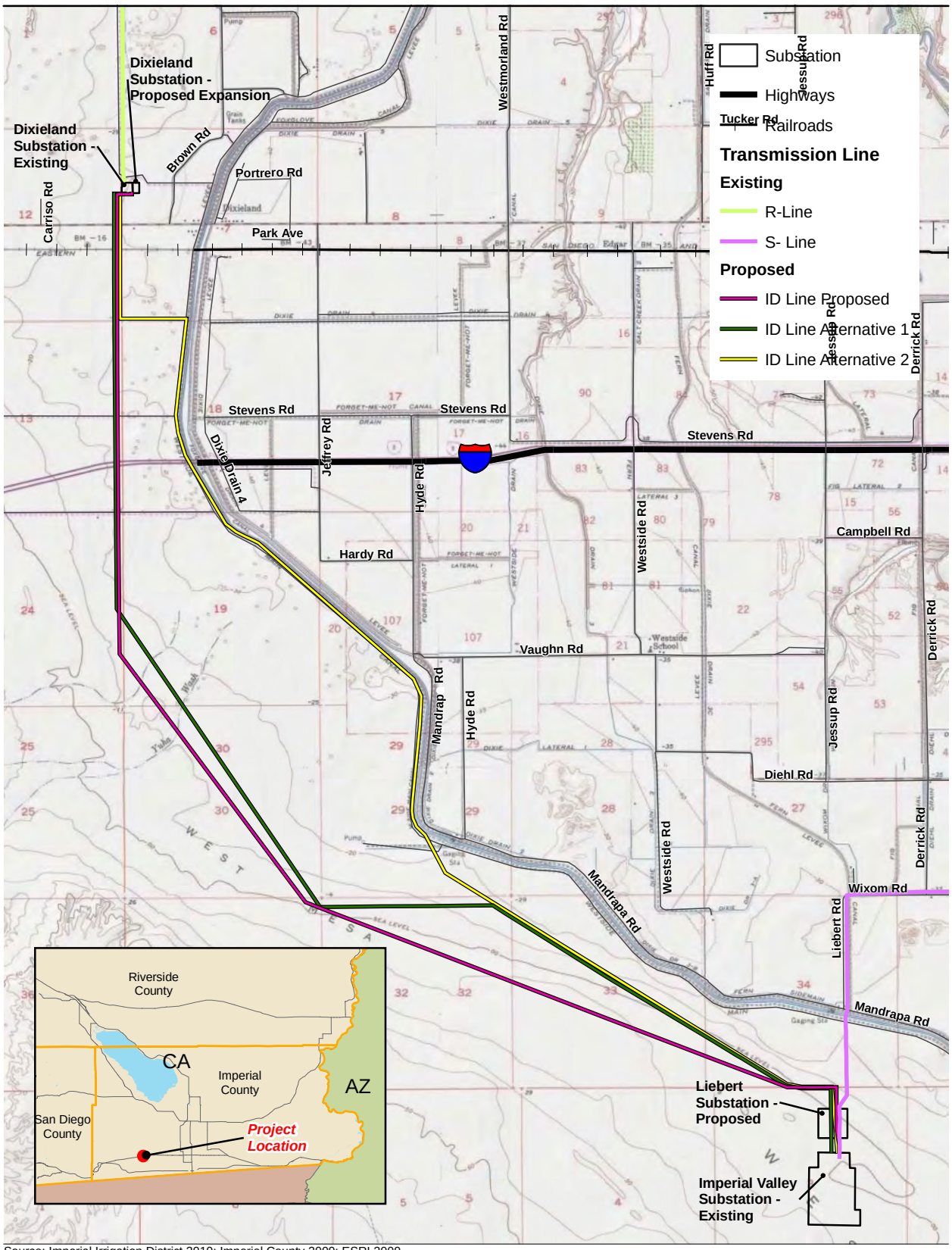
Source: Imperial Irrigation District 2010; ESRI 2009

Figure 1

20 10 0 20 Miles

Scale: 1 = 1,266,786.8; 1 inch = 20 miles

Regional Map



Source: Imperial Irrigation District 2010; Imperial County 2009; ESRI 2009

4,000 2,000 0 4,000 Feet

Scale: 1 = 48,000; 1 inch = 4,000 feet

Figure 2

Vicinity Map

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BTR\Fig2_BTR_Vicinity_Topo.mxd, 11/15/10, ShahS2

1.2 SITE AND PROJECT DESCRIPTION

1.2.1 Site Description

The proposed project would be constructed in an area that skirts the western edges of a large area of irrigated agricultural cropland that extends farther to the east of the transmission line corridor. The edges of the cultivated lands generally comprise the eastern boundary of the Yuha Basin, which consists primarily of federal lands managed by BLM. The cultivated lands are irrigated via a system of irrigation canals and laterals maintained by IID to convey water to agricultural users in the Imperial Valley.

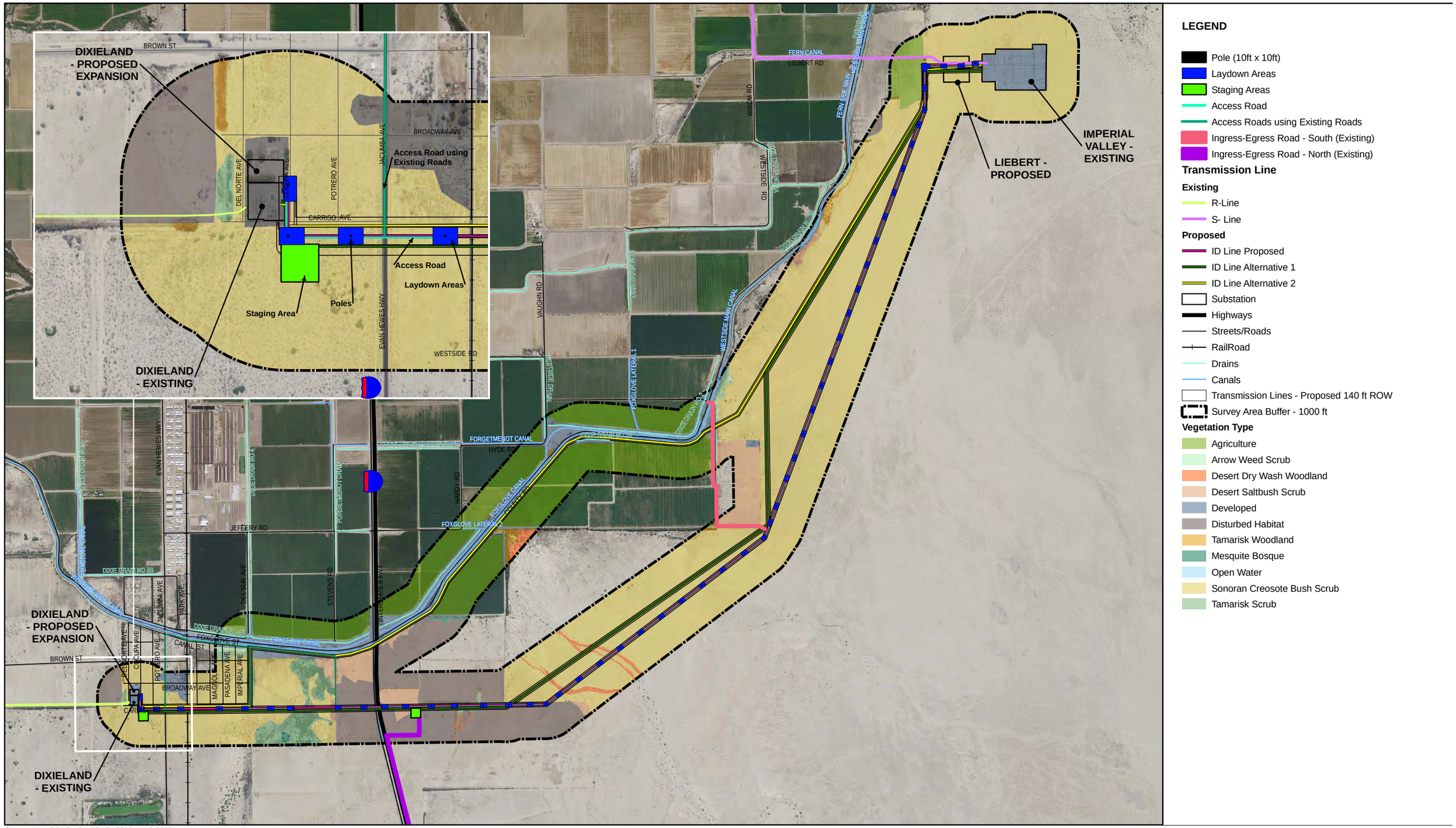
The Yuha Basin is a BLM Area of Critical Environmental Concern (ACEC) that is managed by BLM to protect sensitive cultural and wildlife resources and for certain compatible public uses such as camping. This area consists primarily of undeveloped open space. The Yuha Basin ACEC includes the Yuha Desert Management Area specifically designated by BLM for the flat-tailed horned lizard (*Phrynosoma mcallii*; FTHL), as outlined in the Flat-Tailed Horned Lizard Rangewide Management Strategy (FTHLRMS) (ICC 2003).

1.2.2 Project Description

The proposed project would be implemented to improve interconnection of the electrical transmission system in the Imperial Valley by constructing a 230-kV transmission line (ID Line) between the IV and Dixieland substations. In addition to the ID Line, the new Liebert Substation would be constructed along the ID Line route just north of the IV Substation, and the Dixieland Substation would be expanded. Three potential ID Line routes are under consideration by IID.

For the purpose of biological surveys conducted in support of the proposed project, a 140-foot-wide right-of-way (ROW) was surveyed for each of the three potential ID Line routes; an additional 500-foot and 1,000-foot buffer on either side of the 140-foot ROW was surveyed for biological resources. The 140-foot ROW and buffers will be referred to as the Biological Study Area (BSA) for this report. The BSA includes the three potential ID Line routes plus the substation expansion (Figure 3).

The proposed project is described below in additional detail. The first section describes the components that are common to each of the action alternatives being considered. The next sections describe the routing alternatives that are under consideration. Figure 3 shows the proposed project area and proposed ID Line components.



Source: Imperial Irrigation District 2010; NAIP 2009

3,000 1,500 0 3,000 Feet

Scale: 1 = 36,000; 1 inch = 3,000 feet

Figure 3

Vegetation Communities

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BTR\Fig3_BTR_VegatationComm.mxd, 02/21/11, ShahS2

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1.2.2.1 Project Components Common to Each Action Alternative

Substation Improvements

Substation improvements would be constructed at two locations in the project vicinity. The new Liebert Substation would be constructed on BLM land approximately 400 feet north of the existing IV Substation. The Liebert Substation would measure 800 by 800 feet, covering approximately 14.38 to 14.4 acres in addition to the access road located with the footprint depending on alternative.

At the northern terminus of the proposed project, IID would expand the existing Dixieland Substation to accommodate the new transmission line connection. The existing substation would be expanded by 180 feet to the east, adding approximately 1.20 acres to the total substation footprint. The expansion of the Dixieland Substation would occur on existing developed land that would be either private property with an IID easement or IID property.

Transmission Line Structures and Right-of-Way

The ID Line would require construction of new single-pole steel transmission structures.

The transmission line would extend over a distance of approximately 7.36 miles and would be supported by approximately 53 pole structures. The pole structures would have an average height of 120 feet above ground. The poles would be designed to support a double circuit, 230 kV, two conductors per phase, two three-phase electrical circuits, one optical ground wire, and one 3/8-inch static or overhead ground wire. To avoid identified resources, the distance between poles was increased up to 1,500 feet in certain locations. To achieve these increased distances, poles up to 150 feet tall would be used. The pole structures would range in diameter from 6 to 10 feet. The 53 proposed poles would occupy approximately 0.12 acre. The diameter of the poles would be the same under all alternatives. The distance between pole structures for Route Alternative 1 would be approximately 800 to 900 feet. For Route Alternative 2, the distance between pole structures would generally be 650 feet because of the narrower ROW available along the canal edge. The necessary new ROW width for the transmission line is 140 feet.

Construction Sequence

Construction of the transmission line would occur in the following sequence of operations: ROW acquisition, access road identification, site clearing, construction staging, foundation installation,

structure assembly and erection, area clearing, grounding installation (including ground rods and tying grounding between poles), and cleanup and site reclamation. Various phases of construction may occur at the same time at different locations throughout the construction process. This would require several construction crews operating simultaneously in different locations.

Access

The construction, operation, and maintenance of the proposed transmission line would require that heavy vehicles access structure sites along the ROW. A 16-foot-wide maintenance road would extend along the transmission line route inside the new 140-foot ROW. The 16-foot-wide maintenance road would disturb approximately 14.34 acres. Spur roads may be used to minimize disturbances.

Construction Work Areas

Staging areas would be sited inside the ROW and would be approximately 300 by 300 feet in size. Material would be transported to the proper station for construction, assembly, and erection. Each pole would be constructed within the 140-foot proposed ROW. Work areas would be necessary to ensure that the poles can be laid on the ground prior to installation and that the necessary equipment can maneuver to lift and install the poles. These areas would be approximately 140 by 200 feet around each proposed pole location, with a minimum of 16 feet required on all sides of the pole. The total temporary disturbance area needed for 53 poles would vary between approximately 31.66 and 34.36 acres depending on which alternative is chosen.

Foundation Installation

Installation of foundations (drilled shafts, drilled piers, and/or caissons) would require appropriate drilling equipment. Trucks with augers, cranes, bucket trucks, material trucks, and ready mix trucks are typical equipment that would be used for construction of foundations. Foundations would be excavated with a 2.5- to 3-foot auger. Various types of foundations would be used, depending on structure type and soil conditions.

Foundations for tangent and light angle structures would range in diameter from 6 to 10 feet. Excavation depths would vary from 15 to 30 feet for tangent and light angle structures. For these types of structures, a drill shaft foundation would most likely be used. Construction of foundations consists of the following:

- Excavating the foundation.
- Placing the steel caisson to prevent collapsing.
- Installing the anchor bolt cage.
- Filling the foundation with concrete, encasing the anchor bolt cage.

Conductor Installation and Grounding

After the structures are erected, new insulators and hardware would be installed to each structure. The structures would be rigged with insulator strings to install conductor wires, optical ground wire (OPGW), and static wire in position.

Installation of all required structure grounding would be completed promptly following structure erection.

Operational Characteristics

The nominal voltage for the transmission line would be a 230-kV alternating current. There may be minor variations of up to 5% above the nominal level depending on load flow.

Maintenance

Maintenance of the transmission line would be the responsibility of IID and would be performed in accordance with existing IID guidelines and procedures. Access for maintenance would be accomplished using the proposed 16-foot-wide maintenance road.

Construction Schedule

The tentative construction schedule would occur over an 8-month period during 2011.

Personnel

All personnel, before entering the work site, would be required to complete a worker environmental education program (WEEP). The WEEP training would include information on the potential biological and cultural impacts from the construction activities and methods required to avoid or minimize impacts to these resources as well as reporting requirements.

An approved designated biologist would be appointed to provide and track WEEP training, provide monitoring of construction activities, and ensure compliance with required mitigation measures.

Post-Construction Activities

Upon completion of the proposed project, areas disturbed (with the exception of the 16-foot-wide maintenance road and pole footprints within the ROW) by project construction would be restored to as natural condition as possible to allow for passive regrowth of native fauna. All disturbed soil surfaces would be contoured and raked to match the surrounding terrain. Any rocks that were removed would be scattered over the disturbed area.

1.2.2.2 Preferred Alignment

The transmission line within the Preferred Alignment route would exit the IV Substation on the north side and run in a north direction for about 0.5 mile through the proposed Liebert Substation. The line would then make a 90 degree westward turn and run for approximately 0.25 mile before turning in a west-northwest direction. The line would stay on this northwest alignment for approximately 2.5 miles before turning again in a north-northwest direction and running for approximately 1.5 miles before turning north. The line would run north for approximately 2 miles, crossing I-8 and State Highway 80 before terminating at the Dixieland Substation (Figure 3). Approximately 53 poles would be installed to achieve the Preferred Alignment.

1.2.2.3 Route Alternative 1

The transmission line for Route Alternative 1 would initially follow the same route from the IV Substation as the Preferred Alignment, exiting the IV Substation on the north side and running north for about 0.5 mile through the proposed Liebert Substation. The line would then make a 90 degree westward turn and run for approximately 0.25 mile before turning in a northwest direction. The alignment would then continue for approximately 1.8 miles before turning west and continuing in that direction for 0.9 mile. At this point, the alignment would turn to the north-northwest, continuing for about 1.9 miles before matching the Preferred Alignment and continuing northward to the Dixieland Substation (Figure 3). No pole locations have been determined for Route Alternative 1. The distance between poles would be similar to those of the Preferred Alignment, and the number of poles would also be approximately the same.

1.2.2.4 Route Alternative 2

The transmission line for Route Alternative 2 would initially follow the same route from the IV Substation as the Preferred Alignment, exiting the IV Substation on the north side and running north for about 0.5 mile through the proposed Liebert Substation. The line would then make a 90 degree westward turn and run for approximately 0.25 mile before turning in a northwest direction. The alignment would continue for approximately 2.1 miles in a northwesterly direction, then turn north-northwest and continue for approximately 0.2 mile until the alignment is adjacent to the west side of the Foxglove Canal. Route Alternative 2 would follow the western edge of the canal northward until it reaches a point about 0.7 mile north of I-8. At this point the alignment would run west for about 0.3 mile until it again matches the Preferred Alignment and Route Alternative 1.

Because the available ROW width is narrower along the canal, Route Alternative 2 would require single-pole structures that must be constructed with shorter spans (650 feet) between pole structures. No specific pole locations have been determined for this alternative. Based on the average spacing of the poles, approximately 59 poles would be needed to implement this alternative.

1.2.2.5 Comparison of Alternatives

Table 1 provides a summary comparison of the proposed project features associated with each of the alternative alignments. The total temporary disturbance includes the temporary laydown areas. The total permanent disturbance includes the 16-foot-wide maintenance road within the 140-foot ROW, the Liebert Substation footprint, the Dixieland Substation Expansion footprint, and the pole footprints.

Table 1
Comparison of Features for Each Alternative

Features	Preferred Alignment	Route Alternative 1	Route Alternative 2
Total Length (miles)	7.38	7.36	7.17
Total Area within ROW (acres)	125	124.8	121.6
ROW Area within BLM Land (acres)	87.9	90.6	48.7
ROW Area outside BLM Land (acres)	37.1	34.2	72.9
Number of Structures (estimated)	53	50	51
Structure Spacing (feet)	800 to 900	750 to 1,400	500 to 1,400
Estimated Permanent Impact Footprint			
Total Structure Footprints (acres)	0.12	0.11	0.13
Liebert Substation Footprint (acres)	14.38	14.4	14.4
16-foot-wide Maintenance Road (acres)	14.33	14.24	7.48
Dixieland Substation Expansion Footprint (acres)	1.20	1.20	1.20
Temporary Laydown and Staging Areas (acres)	33.47	31.68	33.79
Total Estimated Permanent Disturbance Area (acres)	30.03	29.95	23.20
Total Estimated Temporary Disturbance Area (acres)	33.47	31.66	33.80
Total Impact Area (acres)	**63.50**	**61.61**	**57.00**

* Not including 16 foot access road

CHAPTER 2
METHODOLOGY

This section describes the methodologies, protocols, and limitations for the various plant and wildlife surveys conducted for the BSA during spring and summer 2009 and 2010.

2.1 DATABASE RESEARCH

For the purposes of this report, species are considered to have special status if they meet at least one of the following criteria:

- Covered under the federal or California Endangered Species Act (ESA and CESA, respectively) (CDFG 2009a))(USFWS 2010, 2010a)
- California Department of Fish and Game (CDFG) Species of Special Concern (SSC) (CDFG 2009d)
- CDFG fully protected species (CDFG 2009c)
- BLM sensitive species (BLM sensitive) (BLM 2009)
- Covered as a State Protected Furbearing Mammal (PFM) (California Code of Regulations [CCR] 14 Section 460)
- Listed by the California Native Plant Society (CNPS) as List 1A (presumed extinct in California), 1B (rare, threatened, and endangered in California and elsewhere), or 2 (rare, threatened, or endangered in California, but more common elsewhere). CNPS List 1A, 1B, and 2 species are considered special-status plant species if they fall within any of these categories as defined in the Native Plant Protection Act (NPPA), California Fish and Game Code (CFGC) Section 1901 2050 through 2098, or the CESA.

Prior to beginning field surveys, AECOM biologists consulted the CDFG California Natural Diversity Database (CNDDB) (RareFind Version 3.1.0; CDFG 2009), the CNPS Inventory of Rare and Endangered Plants (CNPS 2009), and the Natural Resources Conservation Service Web Soil Survey (USDA 2009). These resources, along with the Special Animals list (CDFG 2009d) and range maps, were consulted to determine historic occurrence of special-status plant and wildlife species and other natural resources within the BSA. The San Diego Natural History

Museum (SDNHM) was also consulted to provide information on potential for different mammalian species, specifically bats, that might occur in the general area (SDNHM 2010).

The FTHLRMS, 2003 Revision (ICC 2003), was reviewed to assess if the BSA or portions of it overlapped with designated FTHL management areas. Portions of the BSA occur within the Yuha Desert FTHL management area and, therefore, the regulations spelled out in the FTHLRMS apply.

The Wildlife Research Institute (WRI) was consulted to provide information on the potential for golden eagle nesting within a 10-mile radius of the project site (WRI 2010).

Habitat conditions for special-status species were evaluated with respect to conditions in the BSA. The following 49 special-status species were identified as having the potential to occur on or near the BSA (Table 2).

Table 2
Special-Status Species Evaluated for Potential to Occur On-Site

Common Name	Species Name	Sensitivity Status[1]	Habitat
Flat-tailed horned lizard	*Phrynosoma mcallii*	CDFG SSC, BLM sensitive, currently proposed for listing as threatened under the ESA	Typically occurs within sandy flats and valleys associated with creosote and white bursage Sonoran desert scrub.
Swainson's hawk	*Buteo swainsoni*	CESA threatened – however, migratory only on-site	Forages in grassland, shrubland, and agricultural areas. Nests in trees bordering agricultural fields, in wetland borders, and on abandoned farms.
Bald eagle	*Haliaeetus leucocephalus*	CESA endangered, CDFG fully protected, Bald and Golden Eagle Protection Act	Prefers habitats near bodies of open water with an abundance of fish, including seacoasts, rivers, large lakes, and oceans.
American peregrine falcon	*Falco peregrinus anantum*	CESA endangered, CDFG fully protected	Nests in a scrape, normally on cliff edges and on tall buildings or bridges.
California black rail	*Laterallus jamaicensis coturniculus*	CESA threatened, CDFG fully protected	Tidal emergent wetlands dominated by pickleweed, or in brackish marshes supporting bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass.

Common Name	Species Name	Sensitivity Status[1]	Habitat
Yuma clapper rail	*Rallus longirostris yumanensis*	ESA endangered, CESA threatened, CDFG fully protected	Requires regenerating marsh for foraging, and mature stands of cattail and bulrush for nesting.
Gila woodpecker	*Melanerpes uropygialis*	CESA endangered,	Saguaro desert, riparian woodland, and residential areas.
Southwest willow flycatcher	*Empidonax traillii extimus*	ESA endangered, CESA endangered	Nesting restricted to willow thickets. Also occupies other woodlands. Rare spring and fall migrant.
Mountain plover	*Charadrius montanus*	CDFG SSC, currently proposed for listing as threatened under the ESA	Heavily grazed native rangelands and use burned fields for night roosting.
Colorado desert fringe-toed lizard	*Uma notate*	CDFG SSC, BLM sensitive	Restricted to areas containing fine, loose sand. Habitats include wind-blown sand dunes, desert washes, sandy riverbanks, sparse desert scrub, and dry lakes.
Least bittern	*Ixobrychus exilis*	CDFG SSC	Breed in emergent vegetation in freshwater marshes and are occasionally found in saltwater or brackish marshes.
Wood stork	*Mycteria americana*	CDFG SSC	Forage in shallow bays, marshy backwaters, canals, and drains.
Golden eagle	*Aquila chrysaetos*	CDFG fully protected, Bald and Golden Eagle Protection Act	Rolling foothills, mountain areas, sage-juniper flats, and desert.
Ferruginous hawk	*Buteo regalis*	CDFG SSC	Requires lard foraging areas, grassland, agricultural fields. Uncommon winter resident.
Northern harrier	*Circus cyaneus*	CDFG SSC	Breed in marshes and grasslands and forage in grasslands, agricultural fields, wetlands, and open coastal sage scrub.
White-tailed kite	*Elanus leucurus*	CDFG fully protected	Open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands.
Lesser sandhill crane	*Grus canadensis canadensis*	CDFG SSC	Open fresh water wetlands.
Western burrowing owl	*Athene cunicularia hypugaea*	CDFG SSC, BLM sensitive	Found mainly in grassland and open scrub from the seashore to foothills. Also found in deserts, scrublands, and desert washes with suitable burrows. Requires open ground around burrow for foraging, with minimal

Common Name	Species Name	Sensitivity Status[1]	Habitat
			vegetation covering burrow entrance.
Vermillion flycatcher	*Pyrocephalus rubinus*	CDFG SSC	Arid scrub, farmlands, parks, golf courses, desert, savanna, cultivated lands, and riparian woodland; usually found near water.
Loggerhead shrike	*Lanius ludovicianus*	CDFG SSC	Occurs in semi-open country with utility posts, wires, and trees to perch on. Forages within open desert scrub, dry desert wash woodland, and rocky outcrops. Visual predator that prefers open ground for catching insects, small mammals, and lizards.
Crissal thrasher	*Toxostoma crissale*	CDFG SSC	Riparian scrub or woodland at lower elevations, and the low, dense scrub associated with arroyos.
LeConte's thrasher	*Toxostoma lecontei lecontei*	CDFG SSC	Desert washes, creosote bush scrub. Uncommon resident.
Yellow Wabler (nesting)	*Dendroica petechia*	CDFG SSC	Breeding restricted to riparian woodland. Spring and fall migrant, localized summer resident, rare winter visitor.
Yellow-breasted chat	*Icteria virens*	CDFG SSC	Early successional riparian habitats with a well-developed shrub layer and an open canopy. Nesting habitat is usually restricted to the narrow border of streams, creeks, sloughs, and rivers, and seldom forms extensive tracts.
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	CDFG SSC	Breed in marshes with tall emergent vegetation generally in open areas and edges over relatively deep water.
American badger	*Taxidea taxus*	CDFG SSC	Coastal sage scrub, mixed chaparral, grassland, oak woodland, chamise chaparral, mixed conifer, pinyon-juniper, desert scrub, desert wash, montane meadow, open areas, and sandy soils.
Desert kit fox	*Vulpes macrotis arsipus*	State Protected Fur-bearing Mammal (PFM, per California Code of Regulations)	Arid open areas, shrub grassland, and desert ecosystems.

Common Name	Species Name	Sensitivity Status[1]	Habitat
California leaf-nosed bat	*Macrotus californicus*	CDFG SSC, BLM sensitive	Sonoran desert regions and roosts within warm caves, mines, and buildings. Forages within desert wash vegetation.
Pallid bat	*Antrozous pallidus*	CDFG SSC, BLM sensitive	Rocky arid deserts and canyonlands, grasslands, and coniferous forests. Roosts in crevices of rocky outcrops, caves, cliffs, mines, trees cavities, bridges, and vacant buildings.
Townsend's big-eared bat	*Corynorhinus townsendii*	CDFG SSC, BLM sensitive	Coniferous forests, deserts, prairies, riparian communities, active agricultural areas, and other habitat types. Roosts in caves, cavity-forming rock, abandoned mines, bridges, buildings, and hollow trees.
Yuma myotis	*Myotis yumanensis*	BLM sensitive	Riparian, arid scrublands, deserts, and forests. Roosts in bridges, buildings, caves, mines, and cliff crevices. Forages on aquatic emergent insects by bodies of water.
Western mastiff bat	*Eumops perotis*	CDFG SSC, BLM sensitive	Desert scrub, chaparral, oak woodlands, and conifer forests. Roosts under exfoliating rock slabs and in similar crevices of boulders and buildings. Forages over dry desert washes, flood plains, woodlands, forests, grasslands, and agricultural areas. Known to forage over agricultural fields in the Imperial Valley.
Pocketed-free-tailed bat	*Nyctinomops femorosaccus*	CDFG SSC	Crevices of rugged cliffs, high rocky outcrops, and slopes. Roosts include buildings, caves, and under roof tiles. Forages over desert scrub and pine-oak forests.
Jacumba little pocket mouse	*Perognathus longimembris internationalis*	CDFG SSC	Desert riparian, desert scrub, desert wash, coastal scrub, and sagebush.
Southern grasshopper mouse	*Onychomys torridus Ramona*	CDFG SSC	Alkali desert scrub and desert scrub. Can also occur in succulent shrub, wash and riparian areas; coastal sage scrub, mixed chaparral

Common Name	Species Name	Sensitivity Status[1]	Habitat
			sagebush, low sage, and bitterbush. Low to moderate shrub cover preferred.
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	CNPS 1B.1	Sandy areas in desert dunes, chaparral, and coastal scrub from 80–1,600 meters elevation.
Harwood's milkvetch	*Astragalus insularis* var. *harwoodii*	CNPS 2.2	Sandy areas in desert dunes and desert scrub from 0–710 meters elevation.
Pink fairy-duster	*Calliandra eriophylla*	CNPS 2.3	Sandy or rocky Sonoran desert scrub from 120–1,500 meters elevation.
Emory's crucifixion-thorn	*Castela emoryi*	CNPS 2.3	Playas and Sonoran and Mojavean desert scrub from 90–670 meters elevation.
Flat-seeded spurge	*Chamaesyce platysperma*	CNPS 1B.2	Desert dunes and sandy areas in Sonoran desert scrub from 65–100 meters elevation.
Annual rock-nettle	*Eucnide rupestris*	CNPS 2.2	Sonoran desert scrub from 500–600 meters elevation.
Baja California ipomopsis	*Ipomopsis effusa*	CNPS 2.1	Chaparral, Sonoran desert scrub in sandy areas, and alluvial fans from 0–100 meters elevation.
Brown turbans	*Malperia tenuis*	CNPS 2.3	Sandy areas in Sonoran desert scrub from 15–335 meters elevation.
Slender cottonheads	*Nemacaulis denudata* var. *gracilis*	CNPS 2.2	Coastal dunes, desert dunes, Sonoran desert scrub from 50–400 meters elevation.
Dwarf germander	*Teucrium cubense* ssp. *depressum*	CNPS 2.2	Desert dunes, playas, Sonoran desert scrub from 45–400 meters.
Thurber's pilostyles	*Pilostyles thurberi*	CNPS List 4.3	Sonoran desert scrub from 0–365 meters elevation.
Ribbed cryptantha	*Cryptantha costata*	CNPS List 4.3	Desert dunes and sandy areas Mojavean and Sonoran deserts 60–500 meters elevation.

[1] Sensitivity Status Key

Federal Endangered Species Act (ESA)

State California Department of Fish and Game (CDFG)
California Endangered Species Act (CESA)
Species of Special Concern (SSC)

BLM Sensitive

California Native Plant Society (CNPS):

List 1B.1 Rare, threatened, or endangered in California and elsewhere. Fairly endangered in California.
List 2.1 Rare, threatened, or endangered in California, but more common elsewhere. Seriously endangered in California.
List 2.2 Rare, threatened, or endangered in California, but more common elsewhere. Fairly endangered in California.
List 2.3 Rare, threatened, or endangered in California, but more common elsewhere. Not very endangered in California.
List 4.3 Limited distribution (Watch List). Not very endangered in California.

2.2 SURVEY PROTOCOLS

Comprehensive biological resource surveys designed to meet all applicable BLM and CDFG requirements were initiated in spring 2009. Surveys were conducted within the BSA for the western burrowing owl (*Athene cunicularia hypugaea*; WBO) and followed California Burrowing Owl Consortium (CBOC) guidelines from 1993 (CBOC 1993). Surveys were also conducted within suitable habitat in the BSA for the FTHL and followed BLM guidelines outlined in the FTHLRMS (2003 revision) and revised per BLM guidance for this project (ICC 2003). In 2011 surveys for the mountain plover (*Charadrius montanus*; MOPL) were conducted following the interm guidelines provided by the USFWS (2011 via BLM ECFO).

Qualifications of field biologists involved in surveys for the proposed project are presented in Appendix A.

2.2.1 Vegetation Communities

AECOM botanists Fred Sproul and Lance Woolley conducted vegetation community mapping within the BSA on June 23 and 24, 2009.

Vegetation communities were classified based on Holland (1986). CNDDB (CDFG 2003) classifications were used to provide additional detail, such as denoting special vegetation communities that are either known or believed to be of high priority for inventory in the CNDDB due to significance or rarity. Field biologists used 200-foot scale ortho-topo maps for vegetation mapping and rare plant points or polygons.

The minimum mapping unit was 0.01 acre for riparian areas and 1.0 acre for all other cover types within the disturbance area. Within the buffer, the minimum mapping unit for all land cover types, including riparian, was 1.0 acre. Vegetation mapping within the project area was conducted by walking transects ranging from 10 to 100 feet apart. The buffer was surveyed by pedestrian transect within native habitat. However, developed and agricultural vegetation areas were surveyed by a combination of walking transects and selecting key vantage points from existing dirt access roads.

Dominant plant species for the various riparian and upland vegetation communities were recorded using the 50/20 dominance rule. According to this, dominant plant species are defined as those that, when ranked in order of abundance, collectively make up 50% relative cover. Each dominant species individually makes up at least 20% relative cover or is needed to surpass the 50% relative cover threshold. Once the dominant plant species were identified according to this

method, they were grouped according to relative cover: species below 20%, species ranging from 20% to 50% cover, and species exceeding 50% cover (USACE 1987).

An observation number was recorded on the map and keyed to the field notes for representative locations. A description of the vegetation community was written in field notes and included disturbance, special soils, and habitat suitability for sensitive species.

Invasive species on the California Invasive Plant Council's (Cal-IPC) List A and B were noted when occurring in high concentrations (10 square meters) and nearly monotypic stands. Examples of invasive plant species relevant to this report include tamarisk (*Tamarix* spp.), Saharan mustard (*Brassica tournefortii*), and Mediterranean grass (*Schismus* sp.).

Survey Limitations

Due to constraints on access, vegetation mapping within the buffer was conducted from strategic vantage points whenever direct access was not feasible.

2.2.2 State Waters Streambed Delineation

No formal jurisdiction delineation was conducted by AECOM biologists. A delineation will be conducted by an experienced delineator to determine impacts so that IID can apply for permits from the ACOE, Regional Water Quality Control Board (RWQCB), and CDFG. Areas with potential to be subject to ACOE jurisdiction would include those "non-isolated" areas dominated by hydrophytic vegetation and exhibiting visible aboveground hydrology indicators. Wetland hydrology would be determined based on the presence of visible aboveground indicators. Presence of hydric soils would be assumed for areas that support hydrophytic vegetation and wetland hydrology. ACOE unvegetated Waters of the U.S. would be assumed for all areas of a defined water feature that lack wetland indicators yet exhibit ordinary high water marks. Areas with potential to be subject to CDFG jurisdiction would include areas with wetland vegetation and/or evidence of stream flow. CDFG can also take jurisdiction over riparian/lacustrine vegetation and vernal swales.

2.2.3 Rare Plant Surveys

Rare plant surveys were conducted on March 31 and April 1, 5, and 19, 2010, by AECOM botanists Fred Sproul, Lance Woolley, and Bonnie Hendricks. Survey results are provided herein. Transects were walked every 35 feet within the project footprint and every 100 feet within the buffer. All plant species were documented and sensitive species documented using a

Global Positioning System (GPS) unit, noting relevant ecological data for preparation of a CNDDB form.

Survey Limitations

Rainfall patterns and totals can be a limiting factor in detecting rare plant species in desert environments. Often yearly precipitation totals are not indicative of annual plant growth and blooming; rainfall totals during and after germination are key indicators of growth and flowering. The closest precipitation data to the project are from El Centro, approximately 10 miles northeast of the BRSA. Monthly precipitation totals have been recorded at El Centro since 1932 (WRCC 2009). The majority of Sonoran Desert annual plants grow in the winter for a spring blooming period. Monthly rainfall totals between November 2008 and February 2009 reflect this key period and were below the historical mean rainfall totals. Late-season rain fall in March and April 2009 was also below the historical mean.

Site conditions observed by field staff early in the 2009 season indicated that both annual and perennial species were detectable when the surveys were conducted, suggesting that growth of annual plant species was not likely substantially depressed during 2009. As a result of these observations on site, conditions during spring 2009 were likely suitable for the detection of a representative suite of plant species during focused rare plant surveys, including special-status species, within the BRSA.

2.2.4 General Wildlife Surveys and Habitat Assessment

A general wildlife survey and habitat assessment was conducted by AECOM biologists Barbra Calantas and Lindsey Teunis on June 9, 2009, to determine the potential for various wildlife species to occur within the BSA. Mapping of potentially suitable WBO and FTHL habitat was conducted at this time to determine acreages of habitat to be surveyed for WBO and FTHL.

General wildlife surveys were conducted concurrently with protocol wildlife surveys (WBO and FTHL surveys) and vegetation mapping to document all wildlife species observed and to assess the suitability of the site to support special-status wildlife species. General wildlife surveys were conducted from June through August 2009. Wildlife sign and sightings were recorded and special-status species were mapped using GPS units.

2.2.5 Special-Status Wildlife Surveys

Focused protocol surveys conducted in spring and summer 2009 for the WBO and FTHL and winter 2011 for MOPL are described below. Incidental sightings for all other special-status species were recorded during protocol surveys.

Western Burrowing Owl

WBO surveys were performed according to the protocol established by the CBOC (1993) and accepted by CDFG. The CBOC protocol requires that the disturbance area and a 500-foot (150-meter) buffer surrounding the disturbance area be surveyed according to the CBOC protocol. The CBOC protocol involves three phases of surveys: Phase I is a habitat assessment to determine if suitable habitat for the WBO exists on-site; Phase II involves mapping all potential WBO burrows; Phase III involves four repeat presence/absence focused WBO surveys during the breeding season, and, if there are no detections, during the wintering season as well.

The habitat assessment Phase I WBO survey was conducted by AECOM biologists during detailed vegetation mapping and habitat assessment surveys in the project site and buffer zones (Phase I of the CBOC protocol). Southern Nevada Environmental biologists (on behalf of AECOM) conducted Phase II WBO surveys by walking through the entire project site and a 150-meter (500-foot) buffer zone using 100% visual coverage and north/south transects focusing on visual signs of WBO (burrows, pellets, owl splash, etc.). Distance between transects was no greater than 30 meters (100 feet). All data were recorded with a GPS Garmin 60 CSx in UTM NAD 83. Phase II WBO surveys were conducted according to the CBOC Survey Protocol and Mitigation Guidelines (CBOC 1993). Phase II burrow surveys were conducted by surveyors walking slowly and systematically along and, when visibility was limited, between transects, while visually searching for WBOs, their sign (e.g., pellets, whitewash, feathers, bones), and burrows potentially suitable for use by WBO. All WBO observations, WBO sign, and burrows potentially suitable for use by WBO (regardless of sign presence) were mapped using GPS units and recorded on datasheets. Phase II burrow data also included the type of burrow, if known (e.g., kit fox), a GPS identity code, and the type of WBO sign observed.

AECOM biologists Andrew Fisher and James McMorran conducted Phase III presence/absence surveys for WBOs between July 6 and July 9, 2009. Andrew Fisher has 4 years of experience as a wildlife biologist in Southern California, and regularly conducts habitat assessments and focused surveys for various wildlife species, including raptors, WBO, and various federally threatened and endangered song birds. James McMorran has 6 years of experience as a wildlife

biologist conducting avian surveys throughout the United States, primarily in the desert southwest.

Phase III WBO surveys were performed according to the protocol established by CBOC (1993) and accepted by CDFG. To locate WBOs, surveyors drove established paved and dirt roads, stopping at observation points that provided a wide view, and scanned for owls and burrows with 10 x 42, and 8 x 42 power binoculars. Vehicles were used as blinds, when possible, to minimize disturbance to owls. If burrows with sign were not visible from established roads, surveyors approached the burrows on foot, carefully verifying presence or absence of WBOs at the burrows. Burrows, perches, or other areas where WBOs might live and forage were searched during each survey for new WBO sign. All WBO locations were mapped using GPS units.

All Phase III survey data were recorded on data forms. Data recorded included survey visit number (1 to 4), weather conditions (temperature, wind, precipitation, cloud cover), dimensions and characteristics of all burrows surveyed (height, width, estimated depth, single burrow or complex), presence or absence of owl sign (feathers, prey remains, pellets, whitewash, etc.), burrow occupancy status (active, inactive), notes on any WBO detections (e.g., abundance, age, sex, behavior), and other wildlife species observed.

All WBO observations and old or fresh WBO sign were recorded on datasheets and mapped with GPS units. “Old” sign was defined as pellets that were bleached, desiccated, and disintegrated, and whitewash remnants that were sparse and partially eroded. In several cases, whether old whitewash remnants were from WBO or other bird species was unknown; those signs were recorded as potential WBO sign.

Survey Limitations

Protocol surveys for WBO were conducted in the disturbance area and 492-foot (150-meter) buffers during the 2009 breeding season only. However, owl abundance and patterns of use in the disturbance area during the nonbreeding season cannot be determined from these survey results. The WBO population in the southern desert region is primarily resident (i.e., present year-round); however, some migration from northern populations to this area occurs during winter. Seasonal nonmigration movements and shifts in burrow use by juveniles and adults within a region also occur. Also, as recommended in the CBOC protocol and by CDFG, Phase III surveys were initiated on July 6. However, WBO breeding can be initiated as early as February, particularly in desert populations. Therefore, WBO nesting attempts could have been initiated and not detected in 2009 before Phase III surveys began.

Flat-Tailed Horned Lizard

Based on a habitat assessment conducted by AECOM, more than 3 miles of the proposed ID Line occurs outside of, and directly adjacent to, the Yuha Desert FTHL management area; approximately 1.5 miles of that linear distance is suitable FTHL habitat. AECOM biologists Mike Anguiano, Andrew Fisher, and James McMorran conducted focused surveys for FTHL throughout these areas of suitable FTHL habitat. The AECOM biologists mentioned above have been trained and authorized by the El Centro office of BLM to conduct surveys for FTHL and are on the approved list of individuals for CDFG (Attachment A). Surveys were conducted following the current FTHL survey protocol, as published within Appendix 6 of the Flat-tailed Horned Lizard Interagency Coordinating Committee's 2003 revision of the FTHLRMS (ICC 2003).

The four protocol surveys were conducted between June 24 and August 12, 2009, when air temperatures were between 75 and 100 degrees Fahrenheit (°F) (25 and 37° Centigrade [C]). Given the temperature restrictions and the area to be surveyed, 2 consecutive days of surveying by two biologists were required to complete each survey. Survey 1 was conducted on June 24 and 25, 2009; Survey 2 was conducted on July 7 and 8, 2009; Survey 3 was conducted on August 4 and 5, 2009; and Survey 4 was conducted on August 11 and 12, 2009. Any FTHL, desert horned lizard, and horned lizard scat found during walking or road surveys were mapped and recorded with a GPS unit (Garmin GPSmap 60CSx in NAD 83). Incidental detections of horned lizard scat were also recorded within the survey area. Date and time observed and sex were recorded for any horned lizard found. A digital color photograph with the horned lizard filling at least half of the frame was taken. A qualitative assessment of the habitat was conducted, including listing dominant perennial and annual plants, substrate types, and level of disturbance (roads, off-highway vehicle tracks, vegetation removal, etc.), and the habitat was documented with digital color photographs.

Survey dates, beginning and ending times, and temperatures of each survey were recorded. Any blocks of time not actually spent conducting the surveys were subtracted from the total survey time. Data collected during walking surveys were recorded on a standard FTHL survey form similar to that provided in the current revision of the survey protocol. Survey results included within the FTHL survey report are attached (Appendix D).

Four survey transects were placed at even distances within suitable FTHL habitat paralleling both sides of the proposed ID Line and Dixieland Substation out to 1,000 feet. The extreme northeast portion of transects near the Dixieland Substation is on California State Prison Land (Centinela State Prison), and surveyors had to acquire permission on each survey to access this

area. Project sites require a minimum of four, 1-hour presence/absence surveys for projects of 62 acres or less (ICC 2003). The FTHL survey area on this project is approximately 329.06 acres, and AECOM conducted 23 hours and 55 minutes of walking surveys among these transects. This survey method for linear projects was approved by BLM in a previous survey protocol. Additionally, AECOM conducted driving surveys along the existing access routes between sequential sites to check for any FTHL along the dirt access roads. The driving surveys do not count toward the survey time required for surveys.

Survey Limitations

The only survey limitations for FTHL were temperature related. Surveys could only commence once ambient air temperatures were between 75 and 100°F (25 and 37°C). This limited the amount of time that surveys could last and restricted when surveys needed to start. Surveyors had to walk slowly, as FTHL are cryptic species, often do not move when approached, and may bury in sand or dive into vegetation. FTHL are difficult species to detect and occasionally dense vegetation hindered surveyors' ability to see the ground.

Mountain Plover

Mountain Plover surveys were performed according to the interm protocol established by the USFWS and provided by the BLM El Centro field office. The protocol requires three surveys spaced a minimum of five days apart will be conducted between December 1 and February 28 by biologists who are experienced in the detection and identification of birds and are familiar with mountain plover calls. Surveys were conducted between 8AM and 4PM on days with suitable conditions (winds less than 10 miles per hour, no inclement weather). Surveyors scanned all mountain plover habitat. Habitat was defined by the protocol as abandoned, idle and active agricultural fields with bare ground or vegetation shorter than 25 centimeters.

AECOM biologists Andrew Fisher and James McMorran conducted surveys for WBOs between February and February, 2011. Andrew Fisher has 4 years of experience as a wildlife biologist in Southern California, and regularly conducts habitat assessments and focused surveys for various wildlife species, including raptors, WBO, and various federally threatened and endangered song birds. James McMorran has 6 years of experience as a wildlife biologist conducting avian surveys throughout the United States, primarily in the desert southwest.

Survey Limitations

Protocol surveys for mountain plover were conducted in the BSA during February 2011 wintering season (Appendix F). Seasonal movements of the plover from their breeding grounds to the wintering grounds have typically led to large populations in the Imperial Valley however the population varies from year to year.

CHAPTER 3
EXISTING CONDITIONS

The existing conditions presented in this chapter represent findings within the BSA (as defined in Section 2.2). The following sections describe existing conditions present on-site in spring and summer 2009 for vegetation communities, and special-status plant and wildlife species. During spring 2009, only biological surveys for WBO and FTHL were conducted. Vegetation community mapping and rare plant surveys were conducted in spring 2010. No jurisdictional wetlands or waters were identified on-site. Based on IID's prior experience with similar site conditions, IID does not anticipate that jurisdictional waters would be associated with the project.

3.1 VEGETATION COMMUNITIES

Eleven vegetation communities and other cover types were identified within the BSA during the surveys, including upland, riparian, and other cover types (Table 3 and Figure 3). The acreages of each vegetation community within the BSA are provided in Table 3. Vegetation communities are described in detail below and based on a classification system by R. Holland (1986) and the List of Natural Communities Recognized by the California Natural Diversity Database (CDFG 2003).

Table 3
Vegetation Communities and Cover Types (Acres)

Vegetation Communities and Other Cover Types	Proposed Alternative	Route Alternative 1	Route Alternative 2
Riparian			
Arrow Weed Scrub	0	0	16.11
Desert Dry Wash Woodland	16.58	13.75	6.12
Upland			
Desert Saltbush Scrub	47.08	75.98	47.47
Mesquite Bosque	1.66	1.97	2.46
Sonoran Creosote Bush Scrub	1,543.92	1,542.30	1,033.73
Tamarisk Scrub	55.29	56.67	29.52
Tamarisk Woodland	9.42	13.57	20.73
Other Cover Types			
Agriculture	35.74	36.90	477.07
Developed	81.82	83.16	260.15
Disturbed Habitat	271.86	253.67	76.67
Open Water	0	0	53.56
Total	**2,064.08**	**2,077.98**	**2,023.57**

Two of the vegetation communities are considered sensitive: desert dry wash woodland and mesquite bosque. These communities are considered sensitive and a high priority for inventory in the CNDDB per CDFG's Vegetation and Mapping Program (CDFG 2003).

The project would be implemented within a variety of vegetation communities: agriculture, arrow weed scrub, desert dry wash woodland, desert saltbrush scrub, developed, disturbed habitat, eucalyptus woodland, mesquite bosque, open water, Sonoran creosote bush scrub, and tamarisk scrub (Figure 3). A complete list of plant species detected within the project site is listed in Appendix B.

Sonoran creosote bush scrub is the most dominant native habitat type in the project area. The single dominant plant for this habitat type is creosote bush (*Larrea tridentata*). Additional plant species that occur include burro-weed (*Ambrosia dumosa*), Mormon tea (*Ephedra trifurca*), dot-seed plantain (*Plantago ovata*), and dune evening-primrose (*Oenothera deltoides*). In some areas, Sonoran creosote bush scrub is intergraded into wetland-associated plant communities with honey mesquite (*Prosopis glandulosa* var. *torreyana*), four-wing saltbush (*Atriplex canescens*), and tamarisk (*Tamarix* spp.) (Table 3).

Agriculture fields dominate the eastern portions of the project area and are the most common nonnative habitat type. Alfalfa, sorghum, and corn were the most common crops being grown at the time of habitat mapping.

Sensitive Vegetation Communities and Special-Status Plants

Sensitive vegetation communities associated with wetland features such as desert dry wash woodland and mesquite bosque were detected primarily in the northern and eastern portions of the project area. Sensitive plant species with the potential to occur in the project vicinity include the species listed in Table 4 below. In accordance with CDFG's California Natural Diversity Database (RareFind v.3.1.0), a nine-quad search centered on the town of Dixieland was performed to obtain data contained in this table.

3.1.1 Riparian Vegetation Communities

Arrow Weed Scrub

Arrow weed scrub is designated by Holland (1986) as Code 63820 and by the CNDDB as Alliance 63.700.00 (CDFG 2003). This vegetation community is less a natural wetland habitat

Table 4
Historical Detections and Optimal Survey Period Special-Status Plant Species Known to Occur within or near the Project Area

Common Name	Scientific Name	Status[1]	Most Recent Detection	Optimal Survey Period
chaparral sand-verbena	*Abronia villosa* var. *aurita*	CNPS List 1B.1	1949	Jan to Sep
Baja California ipomopsis	*Ipomopsis effusa*	CNPS List 2.1	1987	Apr to June
Harwood's milk vetch	*Astragalus insularis* var. *harwoodii*	CNPS List 2.2	1922	Jan to May
annual rock nettle	*Eucnide rupestris*	CNPS List 2.2	Not Avail.	Dec to Apr
slender cottonheads	*Nemcaulis denudata* var. *gracilis*	CNPS List 2.2	Not Avail.	Apr to May
dwarf germander	*Teucrium cubense* ssp. *Depressum*	CNPS List 2.2	1986	Mar to May
pink fairy duster	*Calliandra eriophylla*	CNPS List 2.3	1970	Jan to Mar
Emory's crucifixion-thorn	*Castela emoryi*	CNPS List 2.3	1956	June to July
brown turbans	*Malperia tenuis*	CNPS List 2.3	1903	Mar to Apr
hairy stickleaf	*Mentzelia hirsutissima*	CNPS List 2.3	1961	Mar to May
Thurber's pilostyles	*Pilostyles thurberi*	CNPS List 4.3	1966	January
ribbed cryptantha	*Cryptantha costata*	CNPS List 4.3	2010	Mar to May

[1] California Native Plant Society (CNPS):
List 1B.1 Rare, threatened, or endangered in California and elsewhere. Fairly endangered in California.
List 2.1 Rare, threatened, or endangered in California, but more common elsewhere. Seriously endangered in California.
List 2.2 Rare, threatened, or endangered in California, but more common elsewhere. Fairly endangered in California.
List 2.3 Rare, threatened, or endangered in California, but more common elsewhere. Not very endangered in California.
List 4.3 Limited distribution (Watch List). Not very endangered in California.

and more a function of a high water table and seepage in low and disturbed areas near irrigation canals. The dominant and indicator plants of this community within the BSA are arrow weed (*Pluchea sericea*), also with honey mesquite (*Prosopis glandulosa*), salt-cedar (*Tamarix ramosissima*), cattail (*Typha* sp.), and ravennagrass (*Saccharum ravennae*). Screw bean mesquite (*Prosopis pubescens*) occurs along one portion of a canal that may have been introduced as a barrier planting.

Desert Dry Wash Woodland

Desert dry wash woodland is designated by Holland (1986) as Code 62200. The desert dry wash woodland within the BSA most closely resembles the CNDDB mesquite woodland Alliance 61.510.00, which is considered sensitive by the CNDDB (CDFG 2003). This vegetation

community occupies the sandy desert dry washes that traverse the central portion of the project area. This community has an open over story of honey mesquite (*Prosopis glandulosa*), with a scattered understory of creosote bush (*Larrea tridentata*), cheesebush (*Hymenoclea salsola*), burro-weed (*Ambrosia dumosa*), and galleta grass (*Pleuraphis rigida*). Smoke tree (*Psorothamnus spinosus*) occurs in a small open patch within the desert dry wash woodland in the central western portion of the project area.

3.1.2 Upland Vegetation Communities

Sonoran Creosote Bush Scrub

Sonoran creosote bush scrub is designated by Holland as Code 33100 and by the CNDDB as Alliance 33.010.00 (CDFG 2003). This community is characterized within the BSA by sandy well drained soils, and in limited areas an underlying shallow caliche layer. The single dominant plant for this community is creosote bush (*Larrea tridentata*). Other associates that are mostly confined to this community are burro-weed (*Ambrosia dumosa*), Mormon tea (*Ephedra trifurca*), dot-seed plantain (*Plantago ovata*), and dune evening-primrose (*Oenothera deltoides*), which is mostly restricted to the southern part of the BSA. This plant community is intergraded into the wetland-associated plant communities with honey mesquite (*Prosopis glandulosa*), four-wing saltbush (*Atriplex canescens*), and tamarisk (*Tamarix* spp.).

Mesquite Bosque

Mesquite Bosque occurs in areas where honey mesquite form larger woodlands that are not directly associated with artificial irrigation system and are designated by Holland as Code 61820. This community is considered sensitive by the CNDDB and is designated as Alliance 61.510.05 (CDFG 2003). One area was mapped within the BSA that occurs west of the Westside Main Canal where honey mesquite is the dominant tree and there is relatively little Tamarisk.

Tamarisk Woodland

Tamarisk Woodland is not described in Holland, but is classified by the CNDDB as Alliance 63.810.00 tamarisk scrubs and woodlands (CDFG 2003). The tamarisk woodland within the BSA consists of rows of shelter belt trees planted on the edges of agricultural fields, which occur mostly in the northern portion of the BSA. It differs from Tamarisk scrub as it is described below because these are intentional plantings rather than occurring as an invasive plant that has become naturalized within some other native plant community.

Tamarisk has been planted in most of the length of these narrow gallery woodlands, although some sections have been planted to Eucalyptus (*Eucalyptus* spp.) and some other exotic plant species. Where Tamarisk has become more extensively widespread and is mixed with other native wetland species such as honey mesquite, such areas are mapped as Tamarisk scrub.

Tamarisk Scrub

Tamarisk scrub is designated by Holland as 63810 and by the CNDDB as Alliance 63.810.00 (CDFG 2003). The one area where this was mapped in the BSA may have been formerly dominated by honey mesquite. Other common associates include quail brush (*Atriplex lentiformis*) and arrow weed.

Desert Saltbush Scrub

Desert Saltbush Scrub is designated by Holland as 36110 and by the CNDDB as Alliance 36.301.00 (CDFG 2003). This community occupies low areas with denser soils possibly affected by caliche, and occur on the dry edges of arrow weed scrub, which is dominated by two saltbush species (*Atriplex lentiformis* and *A. canescens*) and *Isocoma acradenia* var. *eremophila*. It also occurs as an early successional phase in some old fallow agricultural fields.

3.1.3 Other Cover Types

Agriculture

The majority of the lands mapped as agriculture within the BSA are for hay production, mainly alfalfa. Also included are sorghum, Bermuda grass, and corn. Large fields were recently cleared at the time of vegetation mapping or had been temporarily fallow but did not support any substantial emergent native vegetation.

Developed

The developed land within the BSA consists of roads, transmission lines and substations, commercial agricultural buildings, and residences.

Disturbed Habitat

The disturbed habitat within the BSA consists of previously graded areas that are either devoid of vegetation or dominated by Asian mustard (*Brassica tournefortii*).

Open Water

Open water is mapped within the BSA only within the systems of canals and drains that carry irrigation water. This consists of the Westside Main Canal, Foxglove Canal, Forgetmenot Canal, and the Dixie Drains.

Invasive and Noxious Weeds

A number of invasive and noxious weeds were detected during vegetation community mapping within the project site. They are listed and explained below.

Russian thistle (*Salsola tragus*) – Also known as tumbleweed, this annual or biennial plant is widespread in the project area, especially in developed sites that receive supplemental water near agricultural areas and canals.

Sahara mustard (*Brassica tournfortii*) – This annual plant is widespread throughout the project area in developed areas, such as agricultural/canal, and natural habitats.

Crystalline iceplant (*Mesembryanthemum crystallinum*) – This perennial plant was found in only one location, just north of I-8 in the project area.

London Rocket (*Sisymbrium irio*) – Is an annual plant that is abundant in abandoned agricultural fields throughout the project area.

Tamarisk or salt cedar (*Tamarix aphylla* and *T. ramosissima*) – This tree was planted for shelter belts and for shade associated with agriculture and residential areas. It has also become established in wetland areas that were formerly dominated by native desert trees such as mesquite. It occurs in long narrow plantings adjacent to agricultural fields and has invaded one natural wetland area approximately 1 mile south of the Dixieland Substation west of the Foxglove Canal.

Giant cane (*Arundo donax*) – This tall perennial grass is common along canals and natural wetlands where it forms large thickets of dense vegetation. It is also used as an ornamental and hedge plant in residential settings. It is most abundant along the edges of the Westside Main Canal in the project area.

Ravennagrass (*Saccharum ravennae*) – This perennial grass of medium height is known in both natural wetland habitats and as an invasive plant along canals. It has invaded parts of the margins of the Westside Main Canal throughout its length.

Mediterranean schismus and Arabian schismus (*Schismus arabicus* and *S. barbatus*) – These annual grasses are common throughout desert areas in both natural plant communities and disturbed or cultivated areas. They pose a fire hazard after growing thick during especially wet years and then drying out. Schismus species occur throughout the project area.

3.2 WATERS OF THE STATE

To date, no official jurisdictional delineation has been conducted within the BSA. A delineation will be conducted by an experienced delineator to determine impacts so that IID can apply for permits from the ACOE, Regional Water Quality Control Board (RWQCB), and CDFG. Areas with potential to be subject to ACOE jurisdiction would include those "non-isolated" areas dominated by hydrophytic vegetation and exhibiting visible aboveground hydrology indicators. Wetland hydrology would be determined based on the presence of visible aboveground indicators. Presence of hydric soils would be assumed for areas that support hydrophytic vegetation and wetland hydrology. ACOE unvegetated Waters of the U.S. would be assumed for all areas of a defined water feature that lack wetland indicators yet exhibit ordinary high water marks. Areas with potential to be subject to CDFG jurisdiction would include areas with wetland vegetation and/or evidence of stream flow. CDFG can also take jurisdiction over riparian/lacustrine vegetation and vernal swales.

3.3 FLORA

This section discusses plant species detected within the BSA or with potential to occur on-site. In total, 77 plant species (68 native, nine nonnative) were detected in the BSA during vegetation mapping and sensitive plant surveys (Attachment B). There are 12 special-status plant species that are known to occur within the vicinity of the BSA (Table 5). Of these, 11 are considered to have some potential to occur within the BSA. Special-status plant surveys were conducted in spring 2010. Two special-status plant species were detected during the survey: Thurber's pilostyles (*Pilostyles thurberi*) and ribbed cryptantha (*Cryptantha costata*).

Table 5
Special-Status Plant Species Detected or Potentially Occurring in the BSA of the Proposed Project

Common Name Scientific Name	Sensitivity Status [a]	Habitat Requirements (CNDDB)	Plant Habit, Flowering Period	Habitat suitability	Potential to Occur within Preferred Alignment[b]	Potential to Occur within Route Alternative 1[b]	Potential to Occur within Route Alternative 2[b]
chaparral sand-verbena (*Abronia villosa* var. *aurita*)	CNPS List: 1B.1	Sandy areas in desert dunes, chaparral, and coastal scrub from 80–1,600 meters elevation.	Annual herb, blooms January to September	Marginally suitable habitat is present within the sandy areas in the southern portion of the BSA.	Low Potential	Low Potential	Low Potential
Harwood's milkvetch (*Astragalus insularis* var. *harwoodii*)	CNPS List: 2.2	Sandy areas in desert dunes and desert scrub from 0–710 meters elevation.	Annual herb, blooms January to May	Suitable habitat is present within the sandy areas in the southern portion of the BSA.	High Potential	High Potential	High Potential
pink fairy-duster (*Calliandra eriophylla*)	CNPS List: 2.3	Sandy or rocky Sonoran desert scrub from 120–1,500 meters elevation.	Deciduous shrub, blooms January to March	Suitable habitat is present within the sandy areas in the southern portion of the BSA.	Moderate Potential	Moderate Potential	Moderate Potential
Emory's crucifixion-thorn (*Castela emoryi*)	CNPS List: 2.3	Playas and Sonoran and Mojavean desert scrub from 90–670 meters elevation.	Deciduous shrub, blooms June to July	Suitable habitat is present within the sandy areas in the southern portion of the BSA.	Moderate Potential	Moderate Potential	Moderate Potential
flat-seeded spurge (*Chamaesyce platysperma*)	CNPS List: 1B.2	Desert dunes and sandy areas in Sonoran desert scrub from 65–100 meters elevation.	Annual herb, blooms February to September	Suitable habitat is present within the sandy areas in the southern portion of the BSA.	Moderate Potential	Moderate Potential	Moderate Potential
ribbed cryptantha (*Cryptantha costata*)	CNPS List: 4.3	Desert dunes and sandy areas Mojavean and Sonoran deserts 60–500 meters elevation	Annual herb blooms February to May	Suitable habitat is present within the sandy areas in the southern portion of the BSA.	Detected	Detected	Detected
annual rock-nettle (*Eucnide rupestris*)	CNPS List: 2.2	Sonoran desert scrub from 500–600 meters elevation.	Annual herb, blooms December to April	The BSA is below the typical elevation range for this species.	Low Potential	Low Potential	Low Potential
Baja California ipomopsis (*Ipomopsis effusa*)	CNPS List: 2.1	Chaparral, Sonoran desert scrub in sandy areas and alluvial fans from 0–100 meters elevation.	Annual herb, blooms April to June	Suitable habitat is present within the sandy areas in the southern portion of the BSA.	Moderate Potential	Moderate Potential	Moderate Potential

Common Name Scientific Name	Sensitivity Status [a]	Habitat Requirements (CNDDB)	Plant Habit, Flowering Period	Habitat suitability	Potential to Occur within Preferred Alignment[b]	Potential to Occur within Route Alternative 1[b]	Potential to Occur within Route Alternative 2[b]
brown turbans (*Malperia tenuis*)	CNPS List: 2.3	Sandy areas in Sonoran desert scrub from 15–335 meters elevation.	Annual herb, blooms March to April	Suitable habitat is present within the sandy areas in the southern portion of the BSA.	Moderate Potential	Moderate Potential	Moderate Potential
Slender cottonheads (*Nemacaulis denudata* var. *gracilis*)	CNPS List: 2.2	Coastal dunes, desert dunes, Sonoran desert scrub from 50–400 meters elevation.	Annual herb, blooms April to May	Suitable habitat is present within the sandy areas in the southern portion of the BSA.	Moderate Potential	Moderate Potential	Moderate Potential
Thurber's pilostyles (*Pilostyles thurberi*)	CNPS List: 4.3	Sonoran desert scrub from 0–365 meters elevation.	Perennial herb parasite on dyebush (*Psorothamnus emoryi*), blooms January.	The host plant for this species is scarce within the BSA.	Detected	Detected	Not observed; Moderate Potential
dwarf germander (*Teucrium cubense* ssp. *depressum*)	CNPS List: 2.2	Desert dunes, playas, Sonoran desert scrub from 45–400 meters.	Annual herb, blooms March to May	Suitable habitat is present within the sandy areas in the southern portion of the BSA.	Moderate Potential	Moderate Potential	Moderate Potential

[a] Sensitivity Status Key

CNPS California Native Plant Society Lists:
1B: Considered rare, threatened, or endangered in California and elsewhere.
2: Plants rare, threatened, or endangered in California, but more common elsewhere.
LIST 3: More information needed (Review List).
LIST 4: Limited distribution (Watch List).

Decimal notations: .1 - Seriously endangered in California, .2 – Fairly endangered in California, .3 – Not very endangered in California

[b] Species Potential for Occurrence

Not Expected – Species not detected during project surveys and not expected to occur
Low Potential – Species not detected during project surveys, but has low potential to occur because suitable habitat present, but of marginal quality
Moderate Potential – Species not detected during project surveys, but has moderate potential to occur because suitable habitat present
High Potential – Species not detected during project surveys, but has high potential to occur because suitable habitat present, and species known to occur within the vicinity

3.3.1 Federally Listed Plant Species

Based on regional databases, no federally listed plant species were determined to have potential to occur within the BSA. Based on site-specific habitat evaluations conducted by AECOM and literature review, including a CNDDB record search, it was determined that no federally listed plant species have been recorded near the BSA or have potential to occur in the BSA.

3.3.2 State-Listed Plant Species

Based on regional databases, no state-listed plant species were determined to have potential to occur within the BSA. Based on site-specific habitat evaluations conducted by AECOM and literature review, including a CNDDB record search, it was determined that no state-listed plant species have been recorded near the BSA or have potential to occur in the BSA.

3.3.3 Other Special-Status Plant Species

Habitat suitability and the potential for occurrence for 12 CNPS List 1, 2, and 4 special-status plant species known to occur within the vicinity of the BSA were evaluated (Table 5). Of these 12 species, 11 were determined to have potential to occur within the BSA on the presence of suitable habitat:

- chaparral sand-verbena (*Abronia villosa* var. *aurita*)
- Harwood's milkvetch (*Astragalus insularis* var. *harwoodii*)
- pink fairy-duster (*Calliandra eriophylla*)
- Emory's crucifixion-thorn (*Castela emoryi*)
- flat-seeded spurge (*Chamaesyce platysperma*)
- annual rock-nettle (*Eucnide rupestris*)
- Baja California ipomopsis (*Ipomopsis effusa*)
- brown turbans (*Malperia tenuis*)
- slender cottonheads (*Nemacaulis denudata* var. *gracilis*)
- dwarf germander (*Teucrium cubense* ssp. *depressum*)
- Thurber's pilostyles (*Pilostyles thurberi*)

Hairy stickleaf (*Mentzelia hirsutissima* was determined to not have potential to occur within the BSA due to the absence of potential habitat. Habitat evaluations were based on habitat descriptions provided by the Inventory of Rare and Endangered Plants of California (CNPS 2009) and the CDFG RareFind 3 database (CDFG 2009).

Two special-status plant species were detected during the survey: Thurber's pilostyles (*Pilostyles thurberi*) and ribbed cryptantha (*Cryptantha costata*).

Thurber's pilostyles (*Pilostyles thurberi*) was detected as a parasitic plant on indigo bush (*Psorothamnus emoryii*) at two locations within the BSA. One of these sites was located within the buffer area of the Preferred Alignment and the other site was located southeast of the IV Substation. Indigo bush is only present in some small stands, mostly in remnant desert wash habitats. Ten host plants were observed to have Thurber's pilostyles, fewer than one-third of the indigo bushes that were observed.

Thurber's pilostyles is known from Imperial, Riverside, and San Diego counties in California; it also occurs in Arizona, Nevada, Sonora, and Baja California, Mexico. There are 23 records of California occurrences documented in the Consortium of California Herbaria. Its CNPS status 4.3 indicates that it has "limited distribution," and that it is "not very endangered" in California.

Ribbed crypthantha (*Cryptantha costata*) was detected as relatively common in loose drifting sandy areas in the southern portion of the Preferred Alignment and Route Alternative 1. It occurs in association with loose sand plant species such as sand verbena (*Abronia villosa*), Spanish needle (*Palafoxia arida*), and primrose (*Oenothera deltoides*).

Ribbed cryptantha is known from Imperial, Inyo, Riverside, San Bernardino, and San Diego counties in California; it also occurs in Arizona and Baja California, Mexico. There are 55 records of California occurrences documented in the Consortium of California Herbaria. Its CNPS status 4.3 indicates that is has "limited distribution," and that it is "not very endangered" in California.

3.4 FAUNA

This section discusses wildlife species detected within the BSA or with potential to occur on-site. In total, 61 wildlife species were detected during general reconnaissance and protocol wildlife surveys (Appendix C). Of these, six special-status wildlife species were observed or sign was detected within the BSA (Table 6 and Figures 4 through 7):

- Western burrowing owl
- Loggerhead shrike
- Northern harrier

Table 6
Special-Status Wildlife Species Relevant to the Proposed Project or Evaluated as Potentially Occurring in the BSA

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
Reptiles								
Flat-tailed horned lizard (*Phrynosoma mcallii)*	CDFG: Species of Special Concern BLM: Sensitive ESA: Currently proposed for listing as threatened under the 1993 proposed rule	Typically occurs within sandy flats and valleys associated with the creosote (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) series of Sonoran desert scrub (Turner and Brown 1982).	**Present** on-site. Suitable habitat exists on-site.	**Present** on-site. Suitable habitat exists on-site.	**Present** on-site. Suitable habitat exists on-site.	**Present** on-site. Suitable habitat exists on-site.	**Present** on-site. Suitable habitat exists on-site.	**Present** on-site. Suitable habitat exists on-site.
Colorado desert fringe-toed lizard (*Uma notate*)	CDFG: Species of Special Concern BLM: Sensitive	Restricted to areas containing fine, loose sand. Habitats include wind-blown sand dunes, desert washes, sandy riverbanks, sparse desert scrub, and dry lakes (CDFG 1988).	**Not expected** to occur on-site. Lack of suitable habitat.	**Not expected** to occur on-site. Lack of suitable habitat.	**Not expected** to occur on-site. Lack of suitable habitat.	**Not expected** to occur on-site. Lack of suitable habitat	**Not expected** to occur on-site. Lack of suitable habitat.	**Not expected** to occur on-site. Lack of suitable habitat.
Barefoot banded gecko (*Coleonyx switaki)*	CESA; Threatened	Rock outcrops on arid hillsides and canyons in desert scrub vegetation types.	**Not expected** to occur on-site. Lack of suitable habitat.	**Not expected** to occur on-site. Lack of suitable habitat.	**Not expected** to occur on-site. Lack of suitable habitat.	**Not expected** to occur on-site. Lack of suitable habitat.	**Not expected** to occur on-site. Lack of suitable habitat.	**Not expected** to occur on-site. Lack of suitable habitat.
Birds								
Least bittern (*Ixobrychus exilis*)	CDFG: Species of Special Concern (nesting)	Bitterns breed in emergent vegetation in freshwater marshes and are occasionally found in saltwater or	**Not expected** to occur on-site. Not detected, and not expected	**Not expected to** occur on-site. Not detected, and not expected	**Not expected** to occur on-site. Not detected, and not expected	**Not expected to** occur on-site. Not detected, and not expected	**Not expected** to occur on-site. Although water in the canals and	**Not expected** to occur on-site. Although there is water in the canals,

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
		brackish marshes.	due to lack of suitable habitat.	due to lack of suitable habitat.	due to lack of suitable habitat.	due to lack of suitable habitat.	vegetation on the edges may provide cover, typical suitable habitat does not exist on-site.	and vegetation on the edges may provide cover, typical suitable habitat does not exist on-site.
Wood stork (*Mycteria americana*)	CDFG: Species of Special Concern (post breeding)	At the Salton Sea, wood storks forage in shallow bays, marshy backwaters, canals, and drains (Garrett and Dunn 1981). Several accounts from the first half of the 20th century described storks in the hundreds or even low thousands foraging in irrigated alfalfa or other damp fields in the Seeley–El Centro–Calexico area of the southern Imperial Valley (Howell 1920; Abbott 1931, 1938; Hill and Wiggins 1948)	**Not expected** to occur on-site. Not detected, and not expected due to lack of suitable habitat.	**Not expected** to occur on-site. Not detected, and not expected due to lack of suitable habitat.	**Not expected** to occur on-site. Not detected, and not expected due to lack of suitable habitat.	**Not expected** to occur on-site. Not detected, and not expected due to lack of suitable habitat.	**Not expected** to occur on-site. Not detected not expected due to lack of suitable habitat.	**Not expected** to occur on-site. Not detected not expected due to lack of suitable habitat.
Golden eagle (*Aquila chrysaetos*)	CDFG: Fully Protected (nesting and nonbreeding/winter) BLM: Sensitive	Habitat typically consists of rolling foothills, mountain areas, sage-juniper flats, and desert (California Wildlife	**Not expected** to nest on the site due to lack of habitat, but has potential to forage.	**Not expected** to nest on the site due to lack of habitat, but has potential to forage.	**Not expected** to nest on the site due to lack of habitat, but has potential to forage.	**Not expected** to nest on the site due to lack of habitat, but has potential to forage**.**	**Not expected** to nest on the site due to lack of habitat, but has potential to forage.	**Not expected** to nest on the site due to lack of habitat, but has potential to forage**.**

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
		Habitat Relationship Systems; CDFG).						
Swainson's hawk (*Buteo swainsoni*)	CESA: Threatened (nesting)	This hawk inhabits grassland, shrubland, and agricultural areas where it has open areas to forage for its small prey and where roost sites are available. In breeding season, also requires nesting trees, usually trees bordering agricultural fields, in wetland borders, and on abandoned farms (Audubon 2010).	**Not expected** to nest on-site, not known to nest in Imperial County, may migrate and forage.	**Not expected** to nest on-site, not known to nest in Imperial County, may migrate and forage**.**	**Not expected** to nest on-site, not known to nest in Imperial County, may migrate and forage**.**	**Not expected** to nest on-site, not known to nest in Imperial County, may migrate and forage.	**Not expected** to nest on-site, not known to nest in Imperial County, may migrate and forage.	**Not expected** to nest on-site, not known to nest in Imperial County, may migrate and forage.
Northern harrier (*Circus cyaneus*)	CDFG: Species of Special Concern (breeding)	Harriers breed in marshes and grasslands and forage in grasslands, agricultural fields, wetlands, and open coastal sage scrub.	**Not expected** to nest on-site due to lack of habitat; however, it is likely that species will forage on-site.	**Not expected** to nest on-site due to lack of habitat; however, it is likely that species will forage on-site.	**Not expected** to nest on-site due to lack of habitat; however, it is likely that species will forage on-site.	**Present** on-site. One individual was observed. However, no potential nesting habitat exists on-site.	**Not expected** to nest on-site due to lack of habitat; however, it is likely that species will forage on-site.	**Present** on-site. One individual was observed. However, no potential nesting habitat exists on-site.
White-tailed kite (*Elanus leucurus*)	CDFG: Fully Protected (nesting)	White-tailed kite inhabits low elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands (Dunk 1995).	**Not expected** to occur due to lack of foraging habitat.	**Not expected** to occur due to lack of foraging habitat.	**Not expected** to occur due to lack of foraging habitat.	**Not expected** to occur due to lack of foraging habitat.	**Not expected** to occur on-site. Suitable foraging habitat exists on-site.	**Not expected** to occur on-site. Suitable foraging habitat exists on-site.

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
Bald eagle (*Haliaeetus leucocephalus*)	CESA: Endangered CDFG: Fully Protected (nesting and nonbreeding/winter)	Bald eagle prefers habitats near bodies of open water with an abundance of fish, including seacoasts, rivers, large lakes, and oceans (Sibley 2000).	**Not expected** to occur on-site. Suitable foraging habitat does not exist on-site.	**Not expected** to occur on-site. Suitable foraging habitat does not exist on-site.	**Not expected** to occur on-site. Suitable foraging habitat does not exist on-site.	**Not expected** to occur on-site. Suitable foraging habitat does not exist on-site.	**Not expected** to occur on-site. Although there is water in the canals and potential prey items may be present, typical suitable habitat does not exist on-site.	**Not expected** to occur on-site. Although there is water in the canals and potential prey items may be present, typical suitable habitat does not exist on-site.
American peregrine falcon (*Falco peregrinus anatum*)	CESA: Endangered CDFG: Fully Protected (nesting)	Peregrine falcon nests in a scrape, normally on cliff edges and on tall buildings or bridges. It is one of the most widely distributed species in the world. It is found on every continent except Antarctica. It can survive in a wide variety of habitats including urban cities, the tropics, deserts, and the tundra (Defenders of Wildlife 2010).	**Not expected** to nest on-site, potentially may forage in area.	**Not expected** to nest on-site, potentially may forage in area.	**Not expected** to nest on-site, potentially may forage in area.	**Not expected** to nest on-site, potentially may forage in area.	**Not expected** to nest on-site, potentially may forage in area.	**Not expected** to nest on-site, potentially may forage in area.

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
California black rail (*Laterallus jamaicensis coturniculus*)	CESA: Threatened CDFG: Fully Protected	Occurs most commonly in tidal emergent wetlands dominated by pickleweed, or in brackish marshes supporting bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass (California Wildlife Habitat Relationship Systems; CDFG).	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site and not expected. Although there is water in the canals, and vegetation on the edges may provide cover, typical suitable habitat does not exist on-site.	**Not expected** to occur on-site and not expected. Although there is water in the canals, and vegetation on the edges may provide cover, typical suitable habitat does not exist on-site.
Yuma clapper rail (*Rallus longirostris yumanensis*)	ESA: Endangered CESA: Threatened CDFG: Fully Protected	This rail requires regenerating marsh for foraging, and mature stands of cattail and bulrush for nesting. Mature cattail and bulrush stands provide materials for nest building and cover for the nests; these stands grow near areas of open water and drier upland habitat (CDPR).	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Although there is water in the canals, and vegetation on the edges may provide cover, typical suitable habitat does not exist on-site	**Not expected** to occur on-site. Although there is water in the canals, and vegetation on the edges may provide cover, typical suitable habitat does not exist on-site.

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
Lesser sandhill crane (*Grus canadensis canadensis*)	CDFG: Species of Special Concern (nonbreeding/winter)	Sandhill cranes are primarily birds of open fresh water wetlands, but the different subspecies use habitats that range from bogs, sedge meadows, and fens to open grasslands, pine savannas, and cultivated lands. Roost sites are in a variety of wetland habitats where cranes spend the night standing in shallow water. Sites in California have included rain-pooled agricultural fields, shallow freshwater lakes and ponds, alkaline lakes, and channels of shallow rivers.	**Not expected** to occur on-site. Appropriate foraging and roosting habitats do not exist on-site.	**Not expected** to occur on-site. Appropriate foraging and roosting habitats do not exist on-site.	**Not expected** to occur on-site. Appropriate foraging and roosting habitats do not exist on-site.	**Not expected** to occur on-site. Appropriate foraging and roosting habitats do not exist on-site.	**Moderate** potential to occur on-site. Suitable foraging and roosting habitats occur on-site.	**Moderate** potential to occur on-site. Suitable foraging and roosting habitats occur on-site.
Mountain plover (*Charadrius montanus*)	CDFG: Species of Special Concern (nonbreeding/winter), ESA: Currently proposed for listing as threatened	Mountain plovers are being pressured to use cultivated lands. They show a liking for heavily grazed native rangelands and use burned fields basically for night roosting (Knopf and Rupert 1995).	**Not expected** to occur on-site. Appropriate foraging and roosting habitats do not exist on-site.	**Not expected** to occur on-site. Appropriate foraging and roosting habitats do not exist on-site.	**Not expected** to occur on-site. Appropriate foraging and roosting habitats do not exist on-site.	**Not expected** to occur on-site. Appropriate foraging and roosting habitats do not exist on-site.	**Moderate** potential to occur on-site. Suitable foraging and roosting habitats occur on-site.	**Moderate** potential to occur on-site. Suitable foraging and roosting habitats occur on-site.

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
Western burrowing owl (*Athene cunicularia hypugaea*)	CDFG: Species of Special Concern BLM: Sensitive	Found mainly in grassland and open scrub from the seashore to foothills. Also found in deserts, scrublands, and desert washes with suitable burrows. Requires open ground around burrow for foraging, with minimal vegetation covering burrow entrance.	**High** potential to occur on-site. Multiple detections of this species were adjacent to the ROW.	**Present** on-site. Multiple detections of this species were on-site.	**High** potential to occur on-site. Multiple detections of this species were adjacent to the ROW.	**Present** on-site. Multiple detections of this species were on-site.	**Present** on-site. This species was detected on-site.	**Present** on-site. Multiple detections of this species on-site.
Gila woodpecker (*Melanerpes uropygialis*)	CESA: Endangered	Habitats include saguaro desert, riparian woodland, and residential areas (Bancroft 1929; Price et al. 1995).	**Not expected** to occur on-site; typical foraging habitat does not exist on-site.	**Present** on-site. This species was detected on multiple occasions.	**Not expected** to occur on-site; typical foraging habitat does not exist on-site.	**Present** on-site. This species was detected on multiple occasions.	**Not expected** to occur on-site; typical foraging habitat does not exist on-site.	**Present** on-site. This species was detected on multiple occasions.
Southwestern willow flycatcher (*Empindonax traillii extrimus)*	ESA: Endangered CESA: Endangered	Nesting restricted to willow thickets. Also occupies other woodlands. Rare spring and fall migrant. Extremely localized breeding.	**Not expected** to occur on-site; typical foraging habitat does not exist on-site.	**Not expected** to occur on-site; typical foraging habitat does not exist on-site.	**Not expected** to occur on-site; foraging habitat does not exist on-site.	**Not expected** to occur on-site; foraging habitat does not exist on-site.	**Moderate** observed by RECON within tamarisk scrub, Not expected to nest on-site.	**Moderate** observed by RECON within tamarisk scrub, Not expected to nest on-site.
Vermilion flycatcher (*Pyrocephalus rubinus*)	CDFG: Species of Special Concern (Breeding)	Arid scrub, farmlands, parks, golf courses, desert, savanna, cultivated lands, and riparian woodland;	**Moderate** potential to occur on-site. Appropriate foraging and	**Moderate** potential to occur on-site. Appropriate foraging and	**Moderate** potential to occur on-site. Appropriate foraging and	**Moderate** potential to occur on-site. Appropriate foraging and	**Moderate** potential to occur on-site. Appropriate foraging and	**Moderate** potential to occur on-site. Appropriate foraging and

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
		usually found near water (Sutton 1967; Oberholser 1974; Ellison et al. 2006).	breeding habitat exists on-site.	breeding habitat exists on-site.	breeding habitat exists on-site.	breeding habitat exists on-site.	breeding habitat exists on-site.	breeding habitat exists on-site.
Loggerhead shrike (*Lanius ludovicianus*)	CDFG: Species of Special Concern	Occurs in semi-open country with utility posts, wires, and trees to perch on. Forages within open desert scrub, dry desert wash woodland, and rocky outcrops. Visual predator that prefers open ground for catching insects, small mammals, and lizards.	**High** potential to occur on-site. Habitat exists for this species.	**Present** on-site. This species was detected throughout the site.	**High** potential to occur on-site. Habitat exists for this species.	**Present** on-site. This species was detected throughout the site.	**High** potential to occur on-site. Habitat exists for this species.	**Present** on-site. This species was detected throughout the site.
Crissal thrasher (*Toxostoma crissale*)	CDFG: Species of Special Concern	In California, this thrasher occupies predominately riparian scrub or woodland at lower elevations (e.g., Colorado River Valley), and the low, dense scrub associated with arroyos at higher elevations in the Mojave Desert, normally at or near the upper reaches of desert scrub vegetation and below the piñon-juniper	**Moderate** potential to occur on-site. Although on the western limit of this species' range, isolated pockets of suitable habitat may support this species.	**Moderate** potential to occur on-site. Although on the western limit of this species' range, isolated pockets of suitable habitat may support this species.	**Moderate** potential to occur on-site Although on the western limit of this species' range, isolated pockets of suitable habitat may support this species.	**Moderate** potential to occur on-site. Although on the western limit of this species' range, isolated pockets of suitable habitat may support this species.	**Moderate** potential to occur on-site. Although on the western limit of this species' range, isolated pockets of suitable habitat may support this species.	**Moderate** potential to occur on-site. Although on the western limit of this species' range, isolated pockets of suitable habitat may support this species.

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
		foothill woodland of the slopes above (Garrett and Dunn 1981; Cody 1999).						
Le Conte's Thrasher (*Toxostoma lecontei lecontei)*	CDFG: Species of Special Concern	Desert washes, creosote bush scrub. Uncommon resident.	**Moderate** potential to occur on-site. Isolated pockets of suitable habitat may support this species	**Moderate** potential to occur on-site. Isolated pockets of suitable habitat may support this species	**Moderate** potential to occur on-site. Isolated pockets of suitable habitat may support this species	**Moderate** potential to occur on-site. Isolated pockets of suitable habitat may support this species	**Moderate** potential to occur on-site. Isolated pockets of suitable habitat may support this species	**Moderate** potential to occur on-site. Isolated pockets of suitable habitat may support this species
Yellow-breasted chat (*Icteria virens*)	CDFG: Species of Special Concern (Breeding)	Nesting yellow-breasted chats occupy early successional riparian habitats with a well-developed shrub layer and an open canopy. Nesting habitat is usually restricted to the narrow border of streams, creeks, sloughs, and rivers, and seldom forms extensive tracts (Grinnell and Miller 1944).	**Not expected** to occur on-site. Typical breeding habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.	**Not expected** to occur on-site. Suitable habitat does not exist on-site.
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)	CDFG: Species of Special Concern (Nesting Colony)	Yellow-headed blackbirds breed almost exclusively in marshes with tall emergent vegetation	**Not expected** to occur on-site. Typical breeding habitat does	**Not expected** to occur on-site. Typical breeding habitat does	**Not expected** to occur on-site. Typical breeding habitat does	**Not expected** to occur on-site. Typical breeding habitat does	**Not expected** to occur on-site. Typical breeding habitat does	**Not expected** to occur on-site. Typical breeding habitat does

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
		such as tules (*Scirpus* spp.) or cattails (*Typha* spp.), generally in open areas and edges over relatively deep water (Orians and Willson 1964).	not exist on-site.	not exist on-site.	not exist on-site.	not exist on-site.	not exist on-site.	not exist on-site.
Mammals								
American badger (*Taxidea taxus*)	CDFG: Species of Special Concern	Coastal sage scrub, mixed chaparral, grassland, oak woodland, chamise chaparral, mixed conifer, pinyon-juniper, desert scrub, desert wash, montane meadow, open areas, and sandy soils.	**Moderate** potential to occur on-site. Suitable habitat exists on-site.	**Moderate** potential to occur on-site. Suitable habitat exists on-site.	**Moderate** potential to occur on-site. Suitable habitat exists on-site.	**Moderate** potential to occur on-site. Suitable habitat exists on-site.	**Moderate** potential to occur on-site. Suitable habitat exists on-site.	**Moderate** potential to occur on-site. Suitable habitat exists on-site.
Desert kit fox *(Vulpes macrotis arsipus)*	California Code of Regulations: PFM	Suitable habitat for this fossorial mammal consists of arid open areas, shrub grassland, and desert ecosystems.	**Moderate** potential to occur on-site. A complex of burrows exists on-site.	**Moderate** potential to occur on-site. A complex of burrows exists on-site.	**Moderate** potential to occur on-site. A complex of burrows exists on-site.	**Moderate** potential to occur on-site. A complex of burrows exists on-site.	**Moderate** potential to occur on-site. A complex of burrows exists on-site.	**Moderate** potential to occur on-site. A complex of burrows exists on-site.
California leaf-nosed bat (*Macrotus californicus*)	CDFG: Species of Special Concern; BLM: Sensitive	Inhabits Sonoran desert regions and roosts within warm caves, mines, and buildings. Forages within desert wash vegetation (Brown 2005).	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
Pallid bat (*Antrozous pallidus*)	CDFG: Species of Special Concern; BLM: Sensitive	Inhabits rocky arid deserts and canyonlands, grasslands, and coniferous forests. Most abundant in dry environments such as the Mojave and Sonoran deserts. Roosts in crevices of rocky outcrops, caves, cliffs mines, tree cavities, bridges, and vacant buildings. Forages over a variety of habitats (Rambaldini 2005).	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected;** potential to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.
Townsend's big-eared bat (*Corynorhinus townsendii*)	CDFG: Species of Special Concern; BLM: Sensitive	Inhabits coniferous forests, deserts, prairies, riparian communities, active agricultural areas, and other habitat types. Roosts in caves, cavity-forming rock, abandoned mines, bridges, buildings, and hollow trees. Forages along edge habitats along streams adjacent to wooded habitat (Piaggio 2005).	**Moderate** potential to occur on-site. Suitable foraging and roosting habitat is limited on-site.	**Moderate** potential to occur on-site. Suitable foraging and roosting habitat is limited on-site.	**Moderate** potential to occur on-site. Suitable foraging and roosting habitat is limited on-site.	**Moderate** potential to occur on-site. Suitable foraging and roosting habitat is limited on-site.	**Moderate** potential to occur on-site. Suitable foraging and roosting habitat is limited on-site.	**Moderate** potential to occur on-site. Suitable foraging and roosting habitat is limited on-site.

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
Yuma myotis (*Myotis yumanensis*)	BLM: Sensitive	Inhabits riparian, arid scrublands, deserts, and forests. Roosts in bridges, buildings, caves, mines, and cliff crevices. Forages on aquatic emergent insects by bodies of water (Bogan et al. 2005).	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential Foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.
Western mastiff bat (*Eumops perotis*)	CDFG: Species of Special Concern; BLM: Sensitive	Inhabits desert scrub, chaparral, oak woodlands, and conifer forests. Roosts under exfoliating rock slabs and in similar crevices of boulders and buildings. Forages over dry desert washes, flood plains, woodlands, forests, grasslands, and agricultural areas. Known to forage over agricultural fields in the Imperial Valley (Siders 2005).	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.	**Not expected** to breed on-site. Potential foraging habitat exists on-site.
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	CDFG: Species of Special Concern	Inhabits crevices of rugged cliffs, high rocky outcrops, and slopes. Roosts include buildings, caves, and under roof tiles. Forages over desert	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.	**Not expected** to occur on-site. Suitable foraging and roosting habitat is not present on-site.

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Potential to Occur within Proposed Alignment[2]		Potential to Occur within Route Alternative 1[2]		Potential to Occur within Route Alternative 2[2]	
			140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer	140-Foot ROW	1,000-Foot Buffer
		scrub and pine-oak forests (Navo 2005).						
Peninsular bighorn sheep (*Ovis Canadensis nelson)*	ESA: Endangered CESA: Threatened	Open, rocky habitat, sparse vegetated desert slopes, rocky ridges. San Bernardinos and desert ranges.	**Not expected** to occur on-site. No suitable habitat on-site.	**Not expected** to occur on-site. No suitable habitat on-site.	**Not expected** to occur on-site. No suitable habitat on-site.	**Not expected** to occur on-site. No suitable habitat on-site.	**Not expected** to occur on-site. No suitable habitat on-site.	**Not expected** to occur on-site. No suitable habitat on-site.

[1] Sensitivity Status Key

Federal Endangered Species Act (ESA)

State California Department of Fish and Game (CDFG)
California Endangered Species Act (CESA)
State Protected Fur-Bearing Mammal (PFM)

BLM Sensitive

[2] Species Potential for Occurrence

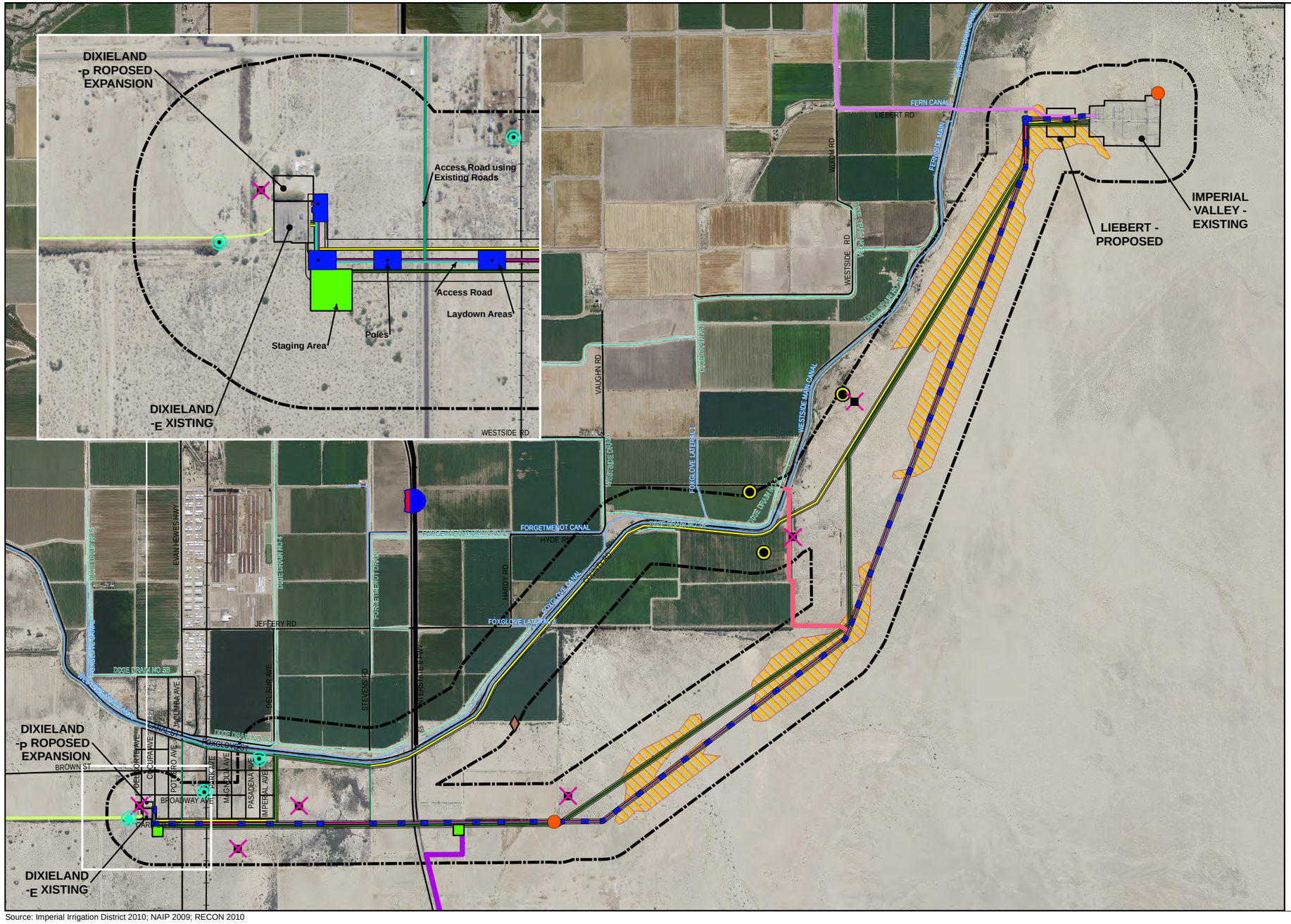
Not expected – Species not detected during project surveys and not expected to occur.

Low potential – Species not detected during project surveys, but has low potential to occur because suitable habitat present, but of marginal quality.

Moderate potential – Species not detected during project surveys, but has moderate potential to occur because suitable habitat present.

High potential – Species not detected during project surveys, but has high potential to occur because suitable habitat present, and species known to occur within the vicinity.

Present – Species detected during project surveys.



Source: Imperial Irrigation District 2010; NAIP 2009; RECON 2010

LEGEND

- Pole (10ft x 10ft)
- Laydown Areas
- Staging Areas
- Access Road
- Access Roads using Existing Roads
- Ingress-Egress Road - North (Existing)
- Ingress-Egress Road - South (Existing)

Transmission Line

Existing

- R-Line
- S-L ine

Proposed

- ID Line Proposed
- ID Line Alternative 1
- ID Line Alternative 2
- Substation
- Highways
- Streets/Roads
- RailRoad
- Drains
- Canals
- Transmission Lines -P roposed 140 ft ROW
- Survey Area Buffer - 1000 ft

Sensitive Wildlife Species

- Gila Woodpecker
- Foraging Willow Flycatcher (RECON 2010)
- Loggerhead Shrike
- Northern Harrier

Rare Plant Species

- *Pilostyles Thurberi*
- Areas with *Cryptantha Costa*

3,000 1,500 0 3,000 Feet

Scale: 1 = 36,000; 1 inch = 3,000 feet

Figure 4

Rare Plants and Sensitive Wildlife Species Detected

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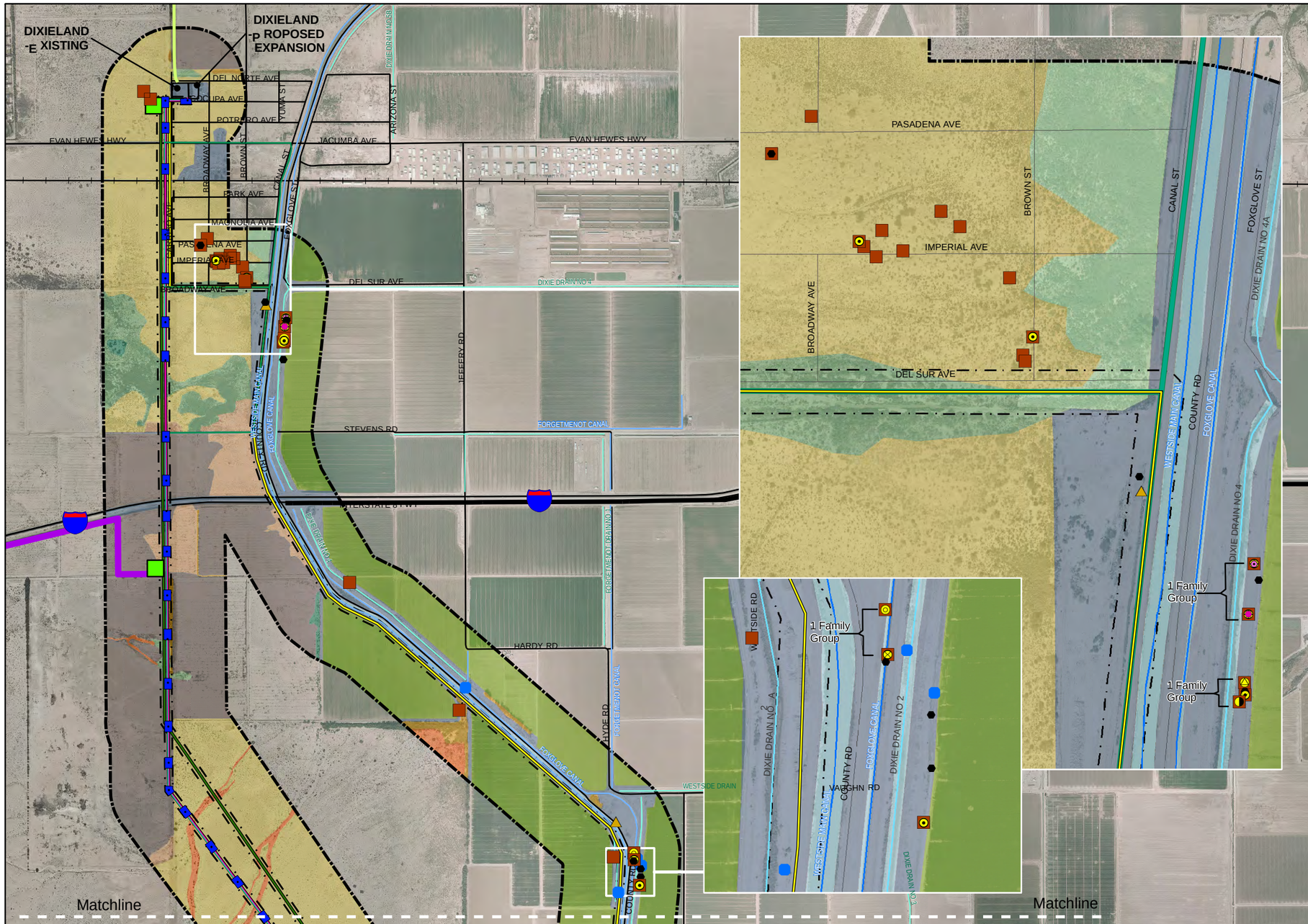

Source: Imperial Irrigation District 2010; NAIP 2009

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

LEGEND

- Pole (10ft x 10ft)
- Laydown Areas
- Staging Areas
- Access Road
- Access Roads using Existing Roads
- Ingress-Egress Road - North (Existing)
- Ingress-Egress Road - South (Existing)

Transmission Line

Existing

- R-Line
- S- Line

Proposed

- ID Line Proposed
- ID Line Alternative 1
- ID Line Alternative 2
- Substation
- Highways
- Streets/Roads
- RailRoad
- Drains
- Canals
- Transmission Lines - Proposed 140 ft ROW
- Survey Area Buffer - 1000 ft

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Tamarisk Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Burrowing Owl Resources

- Burrow
- Cough Pellet
- Pellet
- Perch

Burrowing Owl, Phase II

- 1 Burrowing Owl

Burrowing Owl, Phase III

- 1 Burrowing Owl
- 2 Burrowing Owls
- 3 Burrowing Owls
- 4 Burrowing Owls
- 6 Burrowing Owls
- Fresh Sign, No Burrowing Owl present

Burrowing Owl Detected during Mountain Plover Survey

- 1 Burrowing Owl
- 5 Burrowing Owls

Figure 5

Burrowing Owl Locations - North

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BTR\Fig5_BTR_BUOWLocations_North.mxd, 02/21/11, ShahS2

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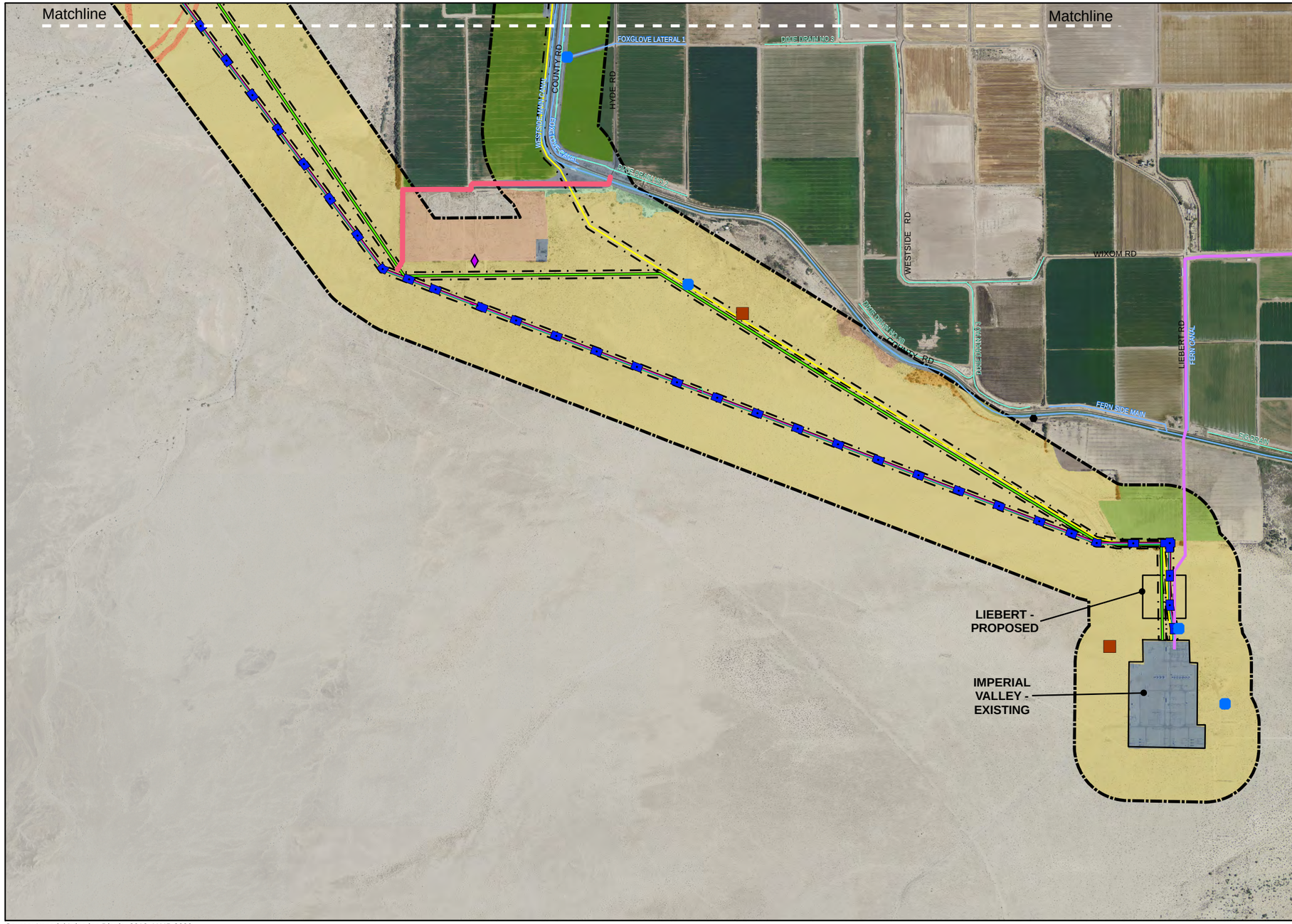

LEGEND

- Pole (10ft x 10ft)
- Laydown Areas
- Staging Areas
- Access Road
- Access Roads using Existing Roads
- Ingress-Egress Road - North (Existing)
- Ingress-Egress Road - South (Existing)

Transmission Line

Existing

- R-Line
- S- Line

Proposed

- ID Line Proposed
- ID Line Alternative 1
- ID Line Alternative 2
- Substation
- Highways
- Streets/Roads
- RailRoad
- Drains
- Canals
- Transmission Lines - Proposed 140 ft ROW
- Survey Area Buffer - 1000 ft

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Tamarisk Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Burrowing Owl Resources

- Burrow
- Cough Pellet
- Pellet
- Perch

Burrowing Owl, Phase II

- 1 Burrowing Owl

Burrowing Owl, Phase III

- 1 Burrowing Owl
- 2 Burrowing Owls
- 3 Burrowing Owls
- 4 Burrowing Owls
- 6 Burrowing Owls
- Fresh Sign, No Burrowing Owl present

Burrowing Owl Detected during Mountain Plover Survey

- 1 Burrowing Owl
- 5 Burrowing Owls

Source: Imperial Irrigation District 2010; NAIP 2009

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 6

Burrowing Owl Locations - South

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BTR\Fig6_BTR_BUOWLocations_South.mxd, 02/21/11, ShahS2

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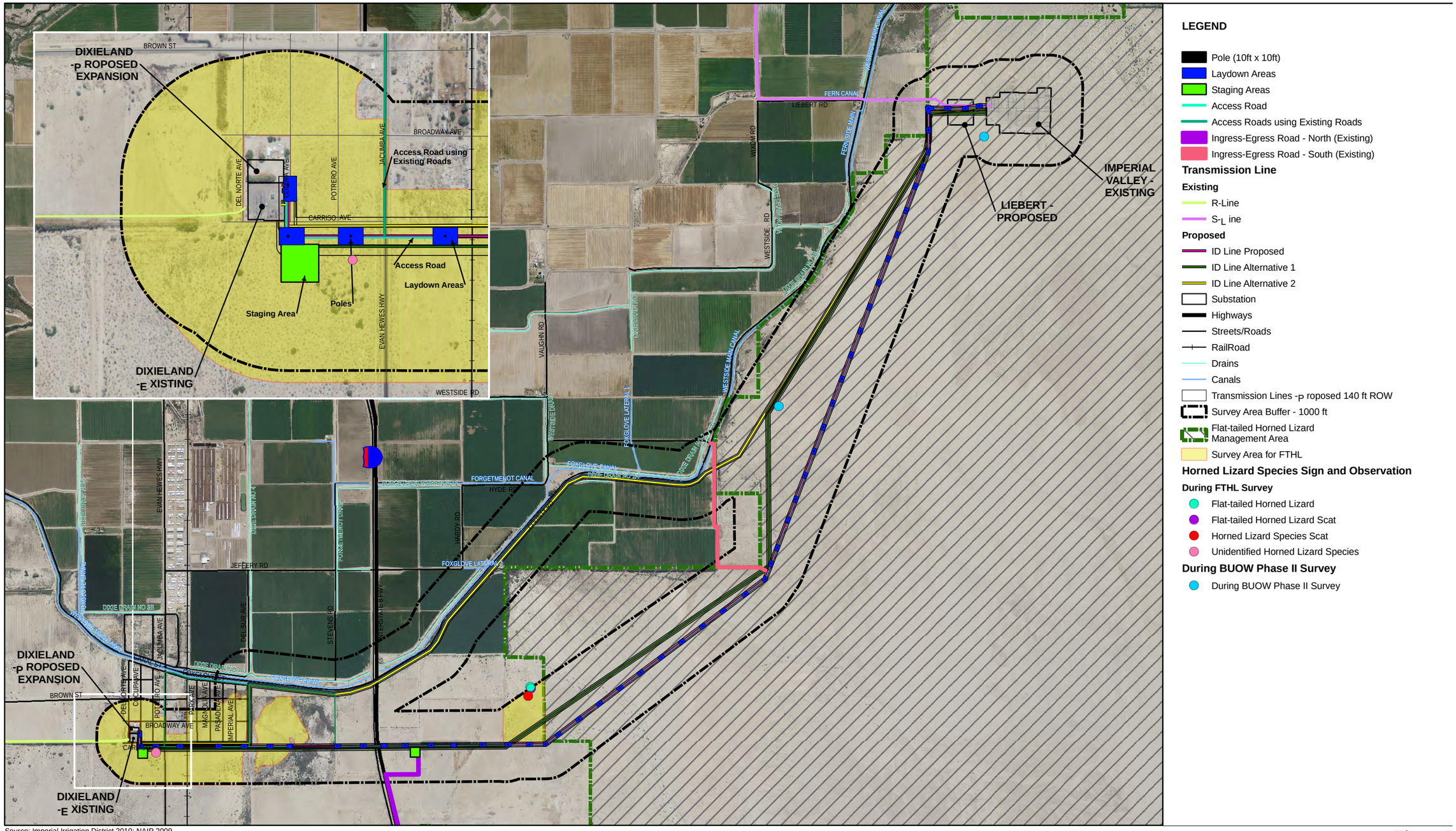

LEGEND

- Pole (10ft x 10ft)
- Laydown Areas
- Staging Areas
- Access Road
- Access Roads using Existing Roads
- Ingress-Egress Road - North (Existing)
- Ingress-Egress Road - South (Existing)

Transmission Line

Existing

- R-Line
- S-L ine

Proposed

- ID Line Proposed
- ID Line Alternative 1
- ID Line Alternative 2
- Substation
- Highways
- Streets/Roads
- RailRoad
- Drains
- Canals
- Transmission Lines -P roposed 140 ft ROW
- Survey Area Buffer - 1000 ft
- Flat-tailed Horned Lizard Management Area
- Survey Area for FTHL

Horned Lizard Species Sign and Observation

During FTHL Survey

- Flat-tailed Horned Lizard
- Flat-tailed Horned Lizard Scat
- Horned Lizard Species Scat
- Unidentified Horned Lizard Species

During BUOW Phase II Survey

- During BUOW Phase II Survey

Source: Imperial Irrigation District 2010; NAIP 2009

3,000 1,500 0 3,000 Feet

Scale: 1 = 36,000; 1 inch = 3,000 feet

Figure 7

Flat-tailed Horned Lizard Survey Area and Observations

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BTR\Fig7_BTR_FTHLSurveyAreasObs.mxd, 02/21/11, ShahS2

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- Gila woodpecker
- Flat-tailed horned lizard
- Desert kit fox

The following species have been recorded near the BSA by RECON environmental for the C Solar West project that has been proposed adjacent to the IID project (RECON 2010).

- Southwestern willow flycatcher

An additional three special-status species have a high potential to occur, eleven special-status species have a moderate potential to occur (Table 6). A discussion of non-special-status wildlife species is provided below, followed by detailed discussions of each special-status species detected within the BSA.

3.4.1 Non-Special-Status Species

Reptiles

Reptile species observed during biological surveys during spring 2009 in the BSA are desert banded gecko (*Coleonyx variegatus variegates*), side-blotched lizard (*Uta stansburiana*), western whiptail (*Cnemidophorus tigris*), zebra-tailed lizard (*Callisaurus draconoides*), and sidewinder (*Crotalus cerastes*). A full list of the reptile species detected during spring 2009 biological surveys is located in Appendix C.

Birds

A number of resident and migrant bird species were recorded within the BSA during biological surveys in spring 2009. Most resident species were detected within Sonoran creosote bush scrub, desert dry wash woodland, or similar native habitat. The most common species observed were Gambel's quail (*Callipepla gambelii*), cattle egret (*Bubulcus ibis*), great-blue heron (*Ardea Herodias*), prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), horned lark (*Eremophila alpestris*), Abert's towhee (*Pipilo aberti*), western kingbird (*Tyrannus verticalis*), red-winged blackbird (*Agelaius phoeniceus*), loggerhead shrike (*Lanius ludovicianus*), lesser nighthawk (*Chordeiles acutipennis*), verdin (*Auriparus flaviceps*), and black-tailed gnatcatcher (*Polioptila melanura*).

Additional bird species detected are red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo lineatus*), killdeer (*Charadrius vociferus*), white-winged dove (*Zenaida asiatica*), greater roadrunner (*Geococcyx californianus*), great horned owl (*Bubo virginianus*), Say's phoebe (*Sayornis saya)*, western tanager (*Piranga ludoviciana*), and many others. A full list of the bird species detected during spring 2009 biological surveys is located in Appendix C.

Mammals

A few mammal species were detected within the BSA during spring 2009 surveys. Numerous small mammal tracks and burrows were detected. They include common desert species such as desert kangaroo rat (*Dipodomys deserti*) burrows, Merriam's kangaroo rat (*Dipodomys merriami)* tracks and burrows, and burrows likely used by several *Chaetodipus* pocket mouse species. Sign of Audubon's cottontail (*Sylvilagus audubonii*) and black-tailed jackrabbit (*Lepus californicus*) were also observed. Numerous round-tailed ground squirrel (*Spermophilus tereticaudus*) burrows are present across the BSA.

Large mammalian predator activity was very limited across the BSA during spring 2009. The majority of predator activity in the BSA appears to be from desert kit fox (*Vulpes macrotis arsipus*) and coyote (*Canis latrans*). Both species were detected by the presence of scat and digs primarily within the Yuha Desert portions of the BSA. A striped skunk (*Mephitis mephitis)* was observed foraging along one of the irrigation canals within the BSA. A full list of the mammal species detected during spring 2009 biological surveys is located in Appendix C.

3.4.2 Special-Status Species

Federally Listed Wildlife Species

No federally listed species were detected within or immediately adjacent to the BSA during surveys conducted by AECOM. One species currently being proposed for listing was detected within the BSA during surveys conducted by AECOM.

Flat-Tailed Horned Lizard (*Phrynosoma mcallii*)

The FTHL is currently proposed for listing under the federal ESA as a threatened species per an Arizona court ruling on November 3, 2009. This ruling reinstated the 1993 proposal (58 Federal Register [FR] 62624) to list the species and is currently undergoing a comment period after which a final determination will be issued (75 FR 9377).

A FTHL individual and scat was detected within the buffer area for Route Alternative 2 approximately 0.9 mile south of I-8, and one unidentified horn lizard species was detected approximately 0.1 mile southwest of Dixieland Substation. Thus, this species is present within the BSA.

FTHL was proposed for listing by the U.S. Fish and Wildlife Service (USFWS) on November 23, 1993. Due in part to data documenting no significant trends in encounter rates with FTHL in areas of concern (Wright 2002) and the implementation of the FTHLRMS, USFWS withdrew proposed listing on January 3, 2003. On March 2, 2010, USFWS issued a notice to open public comment notice period for federal listing as threatened under the ESA. FTHL is a CDFG designated species of special concern and BLM federal sensitive species.

The FTHL inhabits areas of fine sand in desert washes and flats in the desert areas of San Diego, Imperial, and Riverside counties in California, southwestern Arizona, and northern Baja California and Sonora in Mexico. Approximately 50% of FTHL habitat within the historic distribution has been converted to urban and agriculture uses and is, therefore, uninhabitable. FTHL are suffering habitat loss from urban and agricultural development and recreation, including off-road-vehicle use. The FTHLRMS is intended to provide conservation and management guidance.

This lizard typically occurs on sandy flats and valleys associated with the creosote (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) series of Sonoran Desert Scrub (Turner and Brown 1982). However, FTHL has also been found in the badlands of Yuha Basin, Borrego Valley, saltbush flats, and other areas with little to no windblown sand. In addition, FTHL has been recorded in mixed scrub habitat and gravelly soils in Anza Borrego State Park (ICC 2003). In California, FTHL presence was found to correlate with white bursage and indigo bush (Muth and Fisher 1992), and an association with senita cactus has been suggested in Sonora (ICC 2003).

Harvester ants (*Veromessor pergandei*, *Polonomyrex californicus* and *P. magnacantha*, and *Conomyrma insane)* constituted 97% of FTHL diet (Pianka and Parker 1975; Turner and Medica 1982), although the species has been documented to take advantage of outbreaks of other insect species such as sphinx moth larvae (ICC 2003). As an adaptation to the desert environment, FTHLs do not use free-standing water such as dew, but instead receive water through ingestion of prey. FTHLs have relatively low reproduction in comparison to other horned lizard species. Nests are in burrows in the ground just a few centimeters below the strata where soil becomes dry. FTHLs produce small clutches of three to seven eggs, one to two times per year, depending on environmental conditions. Hatchlings of early clutches emerge in July and second clutches in

September, although, in unfavorable conditions, only the September emerging clutch will be produced (ICC 2003). THL activity varies by both circadian and seasonal cycles. THLs are obligatory hibernators, typically remaining dormant in burrows as shallow as 5 centimeters from mid-November through mid-February, although there may be limited winter activity, particularly in juveniles in California (Mayhew 1968; Muth and Fisher 1992; Sester 2001; ICC 2003).

Mountain Plover (*Charadrius montanus*)

The mountain plover was proposed for listing by the USFWS in 1999 and 2002, the USFWS withdrew its proposed listing on September 9, 2003 on the conclusion that the threats to the plover were not as significant as previously believed. On July 31, 2010, the USFWS issued a notice to open public comment for federal listing as threatened. The final listing determination for the mountain plover will occur no later than May 1, 2011. The mountain plover is a CDFG designated species of special concern and a BLM Sensitive Species.

A member of the family Charadriidae, the mountain plover is small terrestrial shorebird which averages 8 inches in length. Mountain plovers are light brown above and white below, and are distinguished from other plovers by the lack of a contrasting dark breast band. Mountain plovers are migratory, wintering in California, southern Arizona, Texas, and Mexico, and breeding primarily in Colorado and Montana from April through June. Breeding also occurs in Arizona, Utah, Wyoming, Nebraska, Kansas, Oklahoma, Texas, and New Mexico. The Sacramento, San Joaquin, and Imperial valleys of California are thought to support the greatest number of wintering mountain plovers (USFWS 2010).

Throughout their range, mountain plovers are found within sparsely vegetated areas such as xeric shrublands, shortgrass prairie, and barren agricultural fields, but rarely near water. They are a diurnal species, foraging during daylight hours for ants, beetles, and crickets, and grasshoppers with a series of short runs and stops.

Mountain plovers nest in areas with short vegetation and bare ground, including near livestock watering tanks. Nests are constructed as a depression in the ground and lined with organic debris in areas with at least 30-percent bare ground and with nearby conspicuous objects such as rocks or forb clumps. Vegetation at nest sites is typically less than 4 inches in height and slope is less than 5 percent. Nest sites are typically dominated by needle-and-thread (*Sitpa comata*), blue gamma (*Bouteloua gracilis*), buffalo grass (*Buchloe dactyloides*), plains prickly pear cactus (*Opuntia polycantha*), June grass (*Koeleria cristata*), and sagebrush (*Artemisia* sp.; USFWS 1999). Mountain plovers have historically nested on black-tailed prairie dog (*Cynomys ludovisianis*) towns. Clutch size ranges from 1–4 eggs.

Mountain plovers use non-breeding (wintering) habitats that are similar to those they use on breeding grounds: heavily grazed pastures, burned fields, fallow fields, and tilled fields (Hunting et al. 2001 as cited in Andres and Stone 2009; Knopf and Wunder 2006 as cited in Andres and Stone 2009). Mountain plovers were historically associated with kangaroo rat (*Dipodomys*) precincts and California ground squirrel (*Spermophilus beecheyi*) colonies within the Central Valley of California (U.S. Fish and Wildlife Service 2003 as cited in Andres and Stone 2009). In California's Imperial Valley, they preferentially use alfalfa fields that have been harvested and grazed by domestic sheep, as well as Bermuda grass fields that have been burned post-harvest (Wunder and Knopf 2003 as cited in Andres and Stone 2009).

Mountain plovers are considered to have been historically common in western and central Kansas; between Fort Supply, Oklahoma, and Dodge City, Kansas; western South Dakota; and they may have bred in northern Mexico (USFWS 1999). Information from the Breeding Bird Survey and Christmas Bird Count data shows a decline in the mountain plover at a rate of 2.7–2.8 percent per year from 1966 to 2007, although the data are characterized as having deficiencies (Andres and Stone 2009).

The most crucial conservation threats facing Mountain Plovers, not necessarily in priority order, include: 1) the inability to manage agricultural lands in the Imperial Valley, California, to provide consistent winter habitat, and the loss or inadequate management of other known wintering areas in California; 2) the lack of comprehensive information on the wintering distribution of Mountain Plovers and the threats plovers face in these areas; 3) information gaps on the factors responsible for apparent low Mountain Plover survival during migration and the ability to define and identify stopover habitat; 4) an historically reduced number of active black-tailed, Gunnison, and Mexican prairie dog colonies in the United States, México, and Canada, which results in less high-quality Mountain Plover habitat; 5) the inability to comprehensively mange landscape components (prairie dog colonies, native grasslands, and agricultural fields) that support breeding Mountain Plovers; and 6) the lack of understanding how large-scale landscape changes brought about by energy development and climate change will affect Mountain Plover habitats (WHSRN 2009).

The Western Hemisphere Shorebird Reserve Network (WHSRN) prepared the *Conservation Plan for the Mountain Plover* (2009). This plan was prepared to synthesize information known to date about the status and needs of the Mountain Plover, and identify the most appropriate conservation actions to take in the near term.

Mountain plovers are known to over-winter in the Imperial Valley, foraging within the large agricultural complex that surrounds El Centro and spans from Mexico to the Salton Sea. In 2009, the Imperial County Agricultural Crop and Livestock Report (Imperial County 2009) reported approximately 353,128 acres of field crops to be grown within this large agricultural complex, including primarily alfalfa hay, Bermuda grass hay, Kleingrass hay, pastured crops, Sudan grass hay, and wheat. An additional 62,237 acres of primarily alfalfa and Bermuda grass were grown as seed crops (Imperial County 2010), totaling over 415,365 acres of alfalfa and grass crops.

Additional grass crop fields are present south of the border in Mexico. Mountain plovers forage in the fields at various stages of the crop rotation, including when soils are freshly tilled prior to planting; when the crops are young and vegetative growth is still under 25 centimeters in height; after the crops have been harvested, and short stubble is present; and after the fields have been burned to prepare them for the next crop.

The Point Reyes Bird Observatory (PRBO) collected data in 1999 during a comprehensive survey of waterbirds at the Salton Sea, this data included mountain plover surveys (Shuford 200). The Los Angeles Museum of Natural History has since spearheaded survey efforts in the Imperial Valley. Volunteers have been conducting semi-annual surveys to determine the extent of the wintering population of the mountain plover within the Imperial Valley. These surveys have found that the populations are concentrated to the east of the west side canal within the agricultural areas of the valley.

A more recent survey, coordinated by the Natural History Museum of Los Angeles County (NHMLAC), was conducted throughout the Imperial Valley on January 21–23, 2011. This survey recorded 877 mountain plovers within approximately 20 percent of the 23 search areas; no mountain plovers were detected south of Interstate 8 (K. Molina, pers. comm. 2011). This study shows a marked decline in population numbers from previous surveys coordinated by the NHMLAC in 2007 (which yielded 4,687 birds within 86 percent of areas surveyed), and 2008 (which yielded 2,955 birds within 74 percent of the search areas).

This decline in population numbers does not appear to relate directly to the amount of foraging habitat available in the Imperial Valley. Acreage of agricultural fields fluctuated by tens of thousands of acres between 2005 and 2009, but the fluctuations in acreage remained within ±15 percent of the average acreage every year (Imperial County 2006, 2007, 2008, 2009, 2010). The population numbers of mountain plover decreased from 2007 to 2008 (K. Molina, pers. comm. 2011), while the acreage of field crops increased from 2007 to 2008.

Mountain Plover surveys were conducted according to the interim guidelines provided by the USFWS (2011 via BLM ECFO). All habitats that coincided with the potential habitat for the species were surveyed (Figure 8).

Three surveys were conducted between January 26 and February 17, 2011. No mountain plovers were observed within the survey area.

Due to the lack of Mountain Plover occurring onsite and the availability of wintering habitat throughout the Imperial Valley the project is not likely to affect the species.

Yuma Clapper Rail (*Rallus longirostris yumanensis*)

There were no detections of Yuma clapper rail at or adjacent to the proposed alternatives. Though this species is known to occur in areas within Imperial County, Yuma clapper rail is not expected to occur within the proposed alternatives, as suitable habitat is not present within the BSA.

Yuma clapper rail is designated as endangered by the federal ESA, threatened by the CESA, and is fully protected by CDFG (CDFG 2009). Clapper rails are the largest rails in North America. In general, the clapper rail is a coastal species; however, the Yuma clapper rail occurs inland in the southwestern United States. It is found throughout the Gulf of California south to La Paz, Baja California Sur on the west side, and Nayarít, Mexico, on the east side. Part of this population extends northward (mostly in summer) into the interior in the Lower Colorado River Valley and around the Salton Sea. This subspecies is partially migratory, with many birds wintering in brackish marshes along the Gulf of California (Banks and Tomlinson 1974). Some remain on their breeding grounds throughout the year; for example, the Salton Sea (south) Christmas Bird Count frequently records this species in the fresh water marshes in and around the Imperial Wildlife Area (Wister Unit). The clapper rail is generally associated with tidal marshes; however, the Yuma clapper rail is unique among the clapper rails in being the only one that occupies fresh water marshes during the breeding seasons, yet largely winters in brackish marshes south of the United States (Anderson and Ohmart 1985). This subspecies breeds in heavily vegetated fresh water marshes, with cover ranging from moderately dense stands of cattail (*Typha domingensis*) and bulrush (*Scirpus* spp.) along the Colorado River (Smith 1975; Anderson and Ohmart 1985) to dense, near-monotypic stands of *Typha* at the Salton Sea (Bennett and Ohmart 1978). Coastal populations of clapper rails experience predation pressure from some nonnative species such as the red fox (*Vulpes vulpes*; Zembal 1993); however, predation effects on the Yuma clapper rail are unknown. Draining and alteration of fresh water

marsh habitat is probably the most serious threat to the Yuma clapper rail, but information is lacking in this regard.

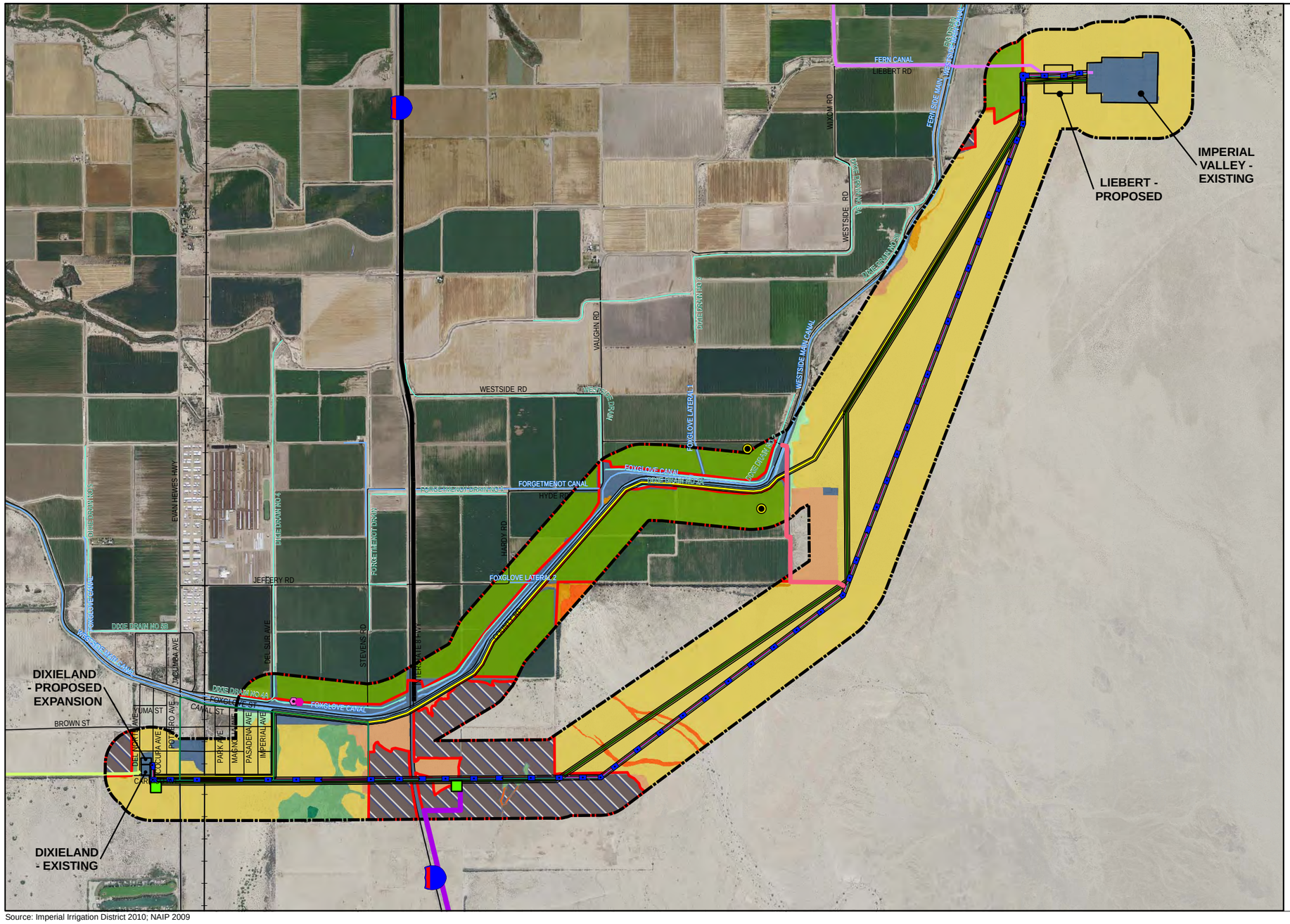
Southern Willow Flycatcher (*Empindonax traillii extrimus)*

The southwestern willow flycatcher is federally listed as endangered, and all willow flycatchers in California, including the southwestern and two other subspecies (*E. t. brewsteri* and *E. t. adastus*) are state-listed as endangered. Critical habitat was designated for the southwestern willow flycatcher on October 19, 2005 in San Diego County, California and in Arizona (USFWS 2005). No critical habitat was designated within Imperial County, California.

Willow flycatchers are in the Tyrannidae family and are one of ten species of *Empidonax* flycatchers in the United States. *Empidonax* flycatchers are difficult to distinguish visually but have distinctive songs. The southwestern willow flycatcher is generally paler than other willow flycatcher subspecies and also differs in morphology. Southwestern willow flycatchers are migrants, arriving on their breeding grounds in mid-May to early June (Garrett and Dunn 1981; Unitt 2004). The southwestern willow flycatcher migrates from its breeding range in August or September. Several subspecies of willow flycatcher migrate through southern California, with the most common migrant being *E. t. brewsteri* (Unitt 2004). It is virtually impossible to differentiate between subspecies of willow flycatcher during migration. The southwestern willow flycatcher requires riparian habitat with willow (*Salix* spp.) thickets (Grinnell and Miller 1944). Understory species include mule fat (*Baccharis* sp.) and arrow weed (*Pluchea* sp.). Southwestern willow flycatchers also nest in areas with tamarisk (*Tamarix* spp.) and Russian olive (Eleagnus *angustifolia*) in areas where these species have replaced the native willow. Surface water is required at nesting sites. Estimated nesting habitat patch size varies from 0.2 to 1.5 acres. Nests are constructed in densely vegetated thickets with trees between 13 and 23 feet in height (Tibbitts et al. 1994).

Threats in the United States include loss of riparian habitat due to water diversion, flood control, urbanization, grazing, and invasion of non-native species. Parasitism by brownheaded cowbirds has been a significant factor in the decline of this species in California and Arizona and elsewhere (Sedgwick 2000). Tropical deforestation may also contribute to the decline of this species, but the effects are not known.

The southwestern willow flycatcher breeds in southern California, Arizona, New Mexico, southern Nevada, southern Utah, western Texas, northwestern Mexico, and possibly southwestern Colorado and winters in Mexico, Central America, and possibly northern South



LEGEND

- Pole (10ft x 10ft)
- Laydown Areas
- Staging Areas
- Access Road
- Access Roads using Existing Roads
- Ingress-Egress Road - South (Existing)
- Ingress-Egress Road - North (Existing)

Transmission Line

Existing

- R-Line
- S- Line

Proposed

- ID Line Proposed
- ID Line Alternative 1
- ID Line Alternative 2
- Substation
- Highways
- Streets/Roads
- RailRoad
- Drains
- Canals
- Transmission Lines - Proposed 140 ft ROW
- Survey Area Buffer - 1000 ft
- Mountain Plover Survey Area
- Fallow Agriculture

Sensitive Wildlife Species

Detected during Mountian Plover Survey

- Northern Harrier
- 1 Burrowing Owl
- 5 Burrowing Owls

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Tamarisk Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Source: Imperial Irrigation District 2010; NAIP 2009

3,000 1,500 0 3,000 Feet

Scale: 1 = 36,000; 1 inch = 3,000 feet

Figure 8

Mountain Plover Survey Area and Sensitive Species Observed

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BTR\Fig8_BTR_MOPLSurveyAreas_Obs.mxd, 02/21/11, ShahS2

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America. Historically common in all the lower-elevation riparian areas of southern California, the southwestern willow flycatcher was found in the Los Angeles Basin, San Bernardino/Riverside County area, and San Diego County (Unitt 2004). Southwestern willow flycatcher persists in the Colorado, Owens, Kern, Mojave, Santa Ana, Santa Margarita, San Luis Rey, Santa Clara, Santa Ynez, Sweetwater, and San Dieguito river systems and in San Timeteo, Pilgrim, and Temecula Creeks.

Southwestern willow flycatchers are not expected to nest within the survey area due to lack of suitable habitat.

During focused burrowing owl surveys in early June 2010, at least five willow flycatchers were observed foraging in a wind-row composed of mesquite and tamarisk trees along the southeastern boundary of R-1 by RECON, this area is within the BSA for Route 2. In order to determine subspecies and migratory status of this species, a USFWS protocol survey for southwestern willow flycatcher was initiated by RECON.

RECON conducted four focused surveys for southwestern willow flycatcher, these took place June 13 and 23, and July 7 and 13, 2010. On June 13, no willow flycatchers were observed within the ISEC West survey area. One willow flycatcher was observed approximately 6 miles south of the project, adjacent to the survey area for the ISEC South project (RECON 2010). Prior to this observation, a recording of the southwestern willow flycatcher vocalization was played in order to elicit a response. The individual willow flycatcher did not respond to the vocalization for the southwestern subspecies, but did respond to the vocalization of the northern subspecies *E. t. brewsteri*. During the subsequent surveys for both the ISEC South and West projects in late June and July 2010, no willow flycatchers were detected.

Based on these data, the willow flycatchers observed in early June are likely *E. t. brewsteri*, utilizing the mesquite vegetation for foraging during migration. Based on all available data of southwestern willow flycatcher habits, known populations, and habitat requirements, no willow flycatchers, including the southwestern subspecies, are expected to nest within the survey area, but may forage within the mesquite and arrow weed vegetation adjacent to the Westside Main Canal during migration.

Peninsular Bighorn Sheep (*Ovis Canadensis nelson)*

Peninsular bighorn sheep (*Ovis canadensis nelsoni* [=*cremnobates*]) (distinct vertebrate population segment) was federally listed endangered on March 18, 1998, and statelisted

threatened on June 27, 1971 (USFWS 2001). The Peninsular bighorn sheep is similar in appearance to other desert bighorn sheep. The coat is pale brown, and the permanent horns, which become rough and scarred with age, vary in color from yellowish brown to dark brown. The horns are massive and coiled in males; in females, they are smaller and not coiled. In comparison to other desert bighorn sheep, the Peninsular bighorn sheep is generally described as having paler coloration and having horns with very heavy bases (Cowan 1940). Previously, this subspecies was considered to be distinct from the other subspecies of *Ovis canadensis*. However, new DNA analysis has concluded that the Peninsular bighorn sheep are synonymous with Nelson's bighorn sheep (*Ovis canadensis nelsoni*); *O. c. cremnobates* was placed into the same subspecies as Nelson's bighorn sheep. The distinct vertebrate population segment that occurs within the Peninsular Ranges is the population of this subspecies that is listed as federally endangered (USFWS 2000). Critical habitat was designed in 2009 and includes portions of western Imperial County, approximately 20 miles west of the survey area.

Peninsular bighorn sheep occur on steep, open slopes, canyons, and washes in hot and dry desert regions where the land is rough, rocky, and sparsely vegetated. Open terrain with good visibility is critical, because bighorn primarily rely on their sense of sight to detect predators (USFWS 2001). Most Peninsular bighorn sheep live between 300 and 4,000 feet in elevation, where average annual precipitation is less than four inches and daily high temperatures average 104 degrees Fahrenheit in the summer. Caves and other forms of shelter (e.g., rock outcrops) are used during inclement weather and for shade during the hotter months. In the Peninsular Ranges, bighorn sheep use a wide variety of plant types as food sources, including shrubs, forbs, cacti, and grasses (USFWS 2001). Although steep escape route terrain is closely associated with bighorn sheep, low rolling and flat terrain including foothills and washes provide an alternative source of high quality browse forage during times when resources become limited (USFWS 2001). Lambing areas are associated with ridge benches or canyon rims adjacent to steep slopes or escarpments. Alluvial fans (sloping deposits of gravel, sand, clay, and other sediments that spread fanlike at the base of canyons and washes) are also used for breeding, feeding, and movement (USFWS 2001).

Historically, bighorn sheep have been documented in the Peninsular Ranges since early explorers such as Anza observed them in the 1700s (Bolton 1930, as cited in USFWS 2001). The distribution of Peninsular bighorn sheep has become more fragmented in the recent past, possibly due to the construction of roads that bisect ancestral bighorn trails and restrict bighorn movement (USFWS 2001). Bighorn sheep exhibit a natural patchy distribution as a result of natural breaks in mountainous habitat (Schwartz et al. 1986 and Bleich et al. 1990a, 1996, as cited in USFWS 2001). Currently, the Peninsular bighorn is distributed in fragmented populations from the

Jacumba Mountains in San Diego County near the U.S.–Mexico border to the San Jacinto Mountains in Riverside County (USFWS 2001).

Prior to 2009, the nearest recorded location for this species was approximately 17 miles west of the survey area, in the rocky hills southwest of Ocotillo, California (State of California 2010b). In March 2009, biologists observed a small herd (five ewes and/or juveniles) on the Imperial Valley Solar Project, located northwest of the proposed ISEC West solar field (BLM 2010). This sighting was approximately 4 miles east of designated critical habitat, and was considered an unusual occurrence as the habitat on the Imperial Valley Solar project site is not optimal for the sheep due to lack of cover, escape routes, human recreational OHV use, and distance from typical habitat (BLM 2010).

The survey area does not contain the steep, rocky terrain that typically provides cover and habitat for the Peninsular bighorn sheep. The Coyote, In-Ko-Pah, and Jacumba mountains, peninsular ranges that provide suitable year-round habitat for this species, are located 11 to 21 miles from the proposed project. The project is situated adjacent to the large agricultural complex that surrounds El Centro and does not function as a movement corridor for Peninsular bighorn sheep between the peninsular mountain ranges in the Imperial Valley. While it is possible that the Peninsular bighorn sheep may on the rare occasion move into the survey area for foraging, the site is too far from shelter and cover to be a regular source for foraging or water (USFWS 2000). The proximity of the proposed project to continuous agricultural activities also reduces the likelihood of use by Peninsular bighorn sheep, who are sensitive to human activity and disturbance (USFWS 2010f).

Peninsular bighorn sheep were not detected in the survey area during various biological surveys. Given the distance from suitable rocky terrain; sparse vegetation within the survey area; lack of detection within the survey area; and the unlikelihood of the survey area to function as a corridor for this species, Peninsular bighorn sheep are not likely to occur within the survey area. Therefore, Peninsular bighorn sheep are not expected to be impacted by the proposed project.

State-Listed Wildlife Species

Golden Eagle (*Aquila chrysaetos*)

Although no golden eagles were detected within or adjacent to the BSA, appropriate foraging habitat exists within the BSA, and breeding habitat exists in the mountains and foothills to the

west of the BSA. Therefore, this species is not expected to nest within the BSA, but there is moderate potential for this species to forage within the BSA.

AECOM communicated with the WRI to determine the potential for golden eagle (*Aquila chrysaetos canadensis*) nesting within a 10-mile radius around the Imperial Valley to Dixieland "ID" Double Circuit 230-kilovolt (kV) Transmission Line and Expansion of Dixieland Substation project (project site). After a review of WRI's existing data, they replied on August 12 and 26, 2010 (WRI 2010 pers. comm. Appendix G) and determined that there were no known golden eagles nesting within a 10-mile radius of the project site north of the California/Mexico international border. The 10-mile radius extends into Mexico, since the southern portion of the project site (the Imperial Valley Substation) is approximately 4.6 miles north of the international border. The 10-mile radius area within Mexico has not been surveyed and includes the Cerro Centinela Mountains. Based on WRI's data, the mountains to the west of the project site and within a 10-mile radius on the U.S. side of the border are not known to currently have nesting golden eagles.

WRI did not provide any information regarding golden eagles foraging within the project site. During wildlife surveys for WBO, FTHL, and other biological surveys, no golden eagles were observed flying over or foraging within the project site. These biological surveys occurred during the peak of the breeding season for golden eagles (March through June) when adults would be actively foraging to support young. There have been no biological surveys conducted during the winter/nonbreeding season, and therefore it is not possible to determine any effects on migrating golden eagles.

The golden eagle is a federally protected species under the Bald and Golden Eagle Protection Act, is a CDFG species of special concern, and is fully protected by the State of California (CDFG 2009). This eagle occurs throughout the United States and is an uncommon winter resident in Imperial County. Golden eagles nest on cliffs or boulders, or in large trees. This species requires vast foraging areas to prey on small mammals. Ideal foraging habitat includes grasslands, deserts, open chaparral, and coastal sage scrub. Several golden eagle territories in the coastal lowland have been eliminated by urbanization, agricultural development, and other human disturbances (Unitt 1984).

Swainson's Hawk (*Buteo swainsoni*)

Although no Swainson's hawks were detected within or adjacent to the BSA, this species may occur and forage within the BSA during fall and spring migration between North America and Central America. Swainson's hawks are known to migrate through portions of Imperial County,

as the Borrego Valley Hawkwatch counts more Swainson's hawks during spring migration than any site in North America (Anza Borrego Foundation 2009). This species is not expected to nest on-site; however, there is a moderate potential for this species to forage within the BSA during migrations.

Swainson's hawk is designated as threatened by CESA (CDFG 2009). This raptor formerly nested throughout most of the state and was once described as the most common breeding hawk in the coastal lowlands. Its breeding range in California is currently limited to the Central Valley, the Modoc Plateau, and small isolated patches of the high desert. Swainson's hawks nest in sycamores and cottonwoods in riparian areas. Food items include caterpillars, grasshoppers, crickets, mice, rabbits, lizards, frogs, toads, and occasionally game birds (Alsop 2001). The main threat to Swainson's hawk populations is pesticide use in agricultural fields and loss of habitat.

Bald Eagle (*Haliaeetus leucocephalus*)

Bald eagle is a rare visitor within Imperial County, and appropriate nesting or foraging habitat does not exist within or adjacent to the BSA. Therefore, this species is not expected to occur within the BSA.

The bald eagle is a federally protected species under the Bald and Golden Eagle Protection Act, a CDFG state endangered species, and is fully protected by the State of California (CDFG 2009). This eagle occurs throughout the United States and is a rare, yet annual, winter resident to Imperial County (mainly found in the immediate vicinity of the Salton Sea). It frequents large bodies of water, especially along the coast, and large inland lakes with mature trees nearby for roosting and hunting. Bald eagles are primarily fish eaters and often perch in matures trees near water to hunt for fish. Bald eagles will eat a variety of other animals based primarily on prey availability. Other prey items may include ungulate carrion, waterfowl and other birds, rabbits, ground squirrels, and other mammals. Bald eagles typically nest in large mature trees near lakes. In the past, bald eagles became nearly extinct due to pesticides (DDT and related compounds), poisons, and contaminants in the environment, and have since rebounded. Presently, the primary human threat to bald eagles is power lines, which accounts for two-thirds of accidental deaths. While harassment and killing of these eagles is now relatively rare, accidental shooting, trapping, and poisoning still take their toll (Drisdelle 2008).

American Peregrine Falcon (*Falco peregrinus anatum*)

Although peregrine falcon was not observed at or adjacent to the proposed alternatives, this falcon regularly occurs within the region and has a moderate potential to forage within the BSA; however, this species is not expected to nest on-site.

The American peregrine falcon is designated as endangered under the CESA, and is fully protected by the State of California (CDFG 2009). Historically, peregrine falcons nested on cliffs, although recent nesting has been documented in abandoned common raven (*Corvus corax*) nests, electric utility poles, and buildings (White et al. 2002), among other unconventional sites such as bridges and buildings. This falcon feeds almost exclusively on medium sized birds such as doves, waterfowl, songbirds, waders, and pigeons. Peregrine falcons are frequently found along shorelines and large bodies of water, and they forage in open landscapes, often foraging up to 5 miles from the nest site and ranging widely during migration (White et al. 2002). Home range for this species can be up to 582 square miles. Currently, threats to the peregrine falcon are largely attributed to colliding with human-made structures.

California Black Rail (*Laterallus jamaicensis coturniculus*)

There were no detections of California black rail at or adjacent to the proposed alternatives. Although this species is known to occur at areas within Imperial County, California black rail is not expected to occur within the proposed alternatives, as suitable habitat is not present within the BSA.

California black rail is designated as threatened by the CESA, and is a California fully protected species. Black rails are the smallest rails in North America. California black rail is one of two subspecies of black rail that inhabit North America. The range of the California black rail extends throughout portions of California and Arizona. The "Eastern" black rail (*Laterallus jamaicensis jamaicensis*) is found along the eastern seaboard, along the Gulf Coast, and rarely at inland sites in the Midwest (Eddleman et al. 1994). This species is generally known as a medium distance migrant that winters in Mexico and Central America; however, recently discovered inland populations in California are thought to be year-round residents (Tecklin 1999; Richmond et al. 2008). California black rail is a highly secretive and rarely observed bird that inhabits saltwater, brackish, and freshwater marshes. Along coastal areas this species has a preference for tidal salt marshes dominated by dense pickleweed (*Salicornia* spp.) with an open structure below. Away from coastal estuaries and marshes, black rails are restricted to breeding in freshwater marshes with stands of tule, cattail, bulrush, and sedge (*Carex* spp.) (Eddleman et al. 1994). Very little information is available on seasonal patterns, timing of reproduction, dispersal,

or other activities. Throughout its range, the primary threat to California black rail is the loss and fragmentation of habitat from urbanization, flood control projects, agricultural practices, and hydrologic changes that affect water regimes.

Gila Woodpecker (*Melanerpes uropygialis*)

A Gila woodpecker was observed foraging on a tamarisk immediately north of the Dixieland Substation and then taking flight across the BSA during an FTHL survey conducted on 11 August, 2009. Additionally, Gila woodpeckers were present throughout the entire survey period at a residence located southeast of the Dixieland Substation, immediately adjacent to the BSA; Gila woodpecker is suspected to breed at this location. Therefore, this species is present within the BSA.

Gila woodpecker is designated as endangered by the CESA. Gila woodpecker ranges from the southwestern U.S. and Mexico and is generally a permanent resident where found. In the United States, it is found from extreme southwestern New Mexico (Hidalgo and Grant counties), through southern Arizona north to the Mogollon Rim and extreme southern Nevada (south Clark County), west to extreme southeast California. Gila woodpecker ranges in elevation from sea level to about 1,000 meters, less often to greater than or equal to 1,600 meters (Selander and Giller 1963). Some individuals move short distances north or to higher elevation during winter, and, when not nesting, sometimes engages in local movements to concentrated food sources (Kaufman 1996). Gila woodpecker excavate nests in large cacti (particularly saguaros), as well as in tree stubs or other parts of cottonwoods, willows, and mesquites (Harrison 1979; Short 1982); they are also known to nest in live or dead palm trees (*Phoenix* sp.). In addition, they are found to nest in oaks and paloverde (Bent 1939), and use planted shade trees in southeast California (Garrett and Dunn 1981). These woodpeckers are threatened by human development of the Sonoran Desert and by competition for nest sites with European starlings (*Sturnas vulgaris*); competition between starlings and Gila woodpeckers will probably become more severe and widespread with time (Kerpez and Smith 1990a, 1990b).

Greater Sandhill Crane (*Grus canadensis tabida)*

The greater sandhill crane is state-listed as threatened and is protected under the federal MBTA and similar State legal protections. This species is known to winter in Imperial County California (Zeiner et al. 1989).

Both greater (*Grus canadensis tabida*) and lesser (*G. c. canadensis*) sandhill cranes occur in California. Historically, *G. c. tabida* was a fairly common breeder on northeastern plateau

(Zeiner et al. 1989). It is now reduced greatly in numbers, and breeds only in Siskiyou, Modoc, Lassen, Sierra Valley, Plumas and Sierra counties. (Zeiner et al. 1989). In summer, this race occurs in and near wet meadow, shallow lacustrine, and fresh emergent wetland habitats. It winters primarily in the Sacramento and San Joaquin valleys from Tehama County south to Kings County, where it frequents annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open, emergent wetlands. It prefers relatively treeless plains. The migratory subspecies *G. c. canadensis* winters in similar habitats in the San Joaquin and Imperial valleys (Zeiner et al. 1989), and to a lesser extent in the Sacramento Valley. In southern California, it concentrates on the Carrizo Plain, San Luis Obispo County, with smaller flocks near Brawley, Imperial County, and Blythe, Riverside County (Zeiner et al. 1989). The latter two flocks may be partly, or largely, *G. c. tabida*, which formerly wintered more commonly in southern California, but which has declined greatly there and throughout its range. Outside of known wintering grounds, *G. c. tabida* is extremely rare except that migrates over much of interior California. A few coastal sightings of greater sandhill crane exist from Marin County southward, but no records from offshore islands. When foraging, the greater sandhill crane prefers open shortgrass plains, grain fields, and open wetlands (Zeiner et al. 1989), but it may also feed on dry plains far from water. The greater sandhill crane feeds on grasses, forbs, especially cereal crops (newly planted or harvested); and also uses it's long bill to probe in soil for roots, tubers, seeds, grains, earthworms, and insects. It will also feed on larger prey, such as mice, small birds, snakes, frogs, and crayfish.

The greater sandhill crane is likely to forage within the arrow weed thicket along the Westside Canal and the adjacent agricultural fields east of the Westside Canal (outside of the survey area) during winter, but this species is not expected to breed in the survey area.

Barefoot Banded Gecko (*Coleonyx switaki)*

The barefoot banded gecko is state-listed as threatened. Its known range occurs along the eastern face of the Peninsular Ranges in San Diego and Imperial Counties, and little information is known about its extended range or abundance.

Habitat for the barefoot banded gecko is found in arid rocky areas on flatlands, canyons, and thornscrub, especially where there are large boulders and rock outcrops, and where vegetation is sparse (Murphy 1974). In California, inhabits the arid desert slopes of the eastern side of the Peninsular Ranges from near Borrego Springs south to the Baja California border, and may occur at elevations from near sea level to over 2,000 ft. (700 m). An isolated population is known to

occur in the Coyote Mountains of Imperial County. It ranges farther south in Baja California along the eastern edge of the mountains to near Santa Rosalia (Murphy 1974).

The barefoot banded gecko is insectivorous. Most likely, the breeding season lasts from spring to summer, May to July. Females lay one or two eggs, roughly 3 weeks after mating, and may lay eggs several times each season. Eggs hatch after around 2 months, in late summer to early fall (Murphy 1974).

No barefoot banded geckos are expected to occur within the project area based on a lack of suitable habitat in the form of large boulders and rocky outcrops.

Nonlisted Special-Status Wildlife Species

Colorado Desert Fringe-toed Lizard (*Uma notata notate)*

There were no detections of the Colorado desert fringe-toed lizard at or adjacent to the BSA. This species is known to occur approximately 2 miles west of the survey area (CNDDB 2010). Due to the lack of suitable habitat within the BSA this species is expected to not occur.

The Colorado Desert fringe-toed lizard is a CDFG Species of Special Concern and a BLM sensitive species. They are primarily insectivores, but also take plant material. Their diet consists of ants, beetles, antlion larvae, hemipterans, grasshoppers, and caterpillars. Plant foods include buds, flowers, leaves, and seeds. Conspecifics and other lizards are also eaten occasionally. Sight is most frequently used to find food on the surface of sand. Buried fringe-toed lizards also use hearing to detect prey on the sand surface, or to find buried prey when above ground (Zeiner et al. 1988).

Fringe-toed lizards usually seek refuge from enemies by burrowing in the sand ("sand swimming") within 5 to 6 centimeters (2 to 2.4 inches) of the surface. They are usually buried on the lee sides of dunes and hummocks to prevent excavation by wind. Rodent burrows and the bases of shrubs are also used for cover and thermoregulation. Lizards usually hibernate in sand 30 centimeters (12 inches) deep, but juveniles and subadults may be found closer to the surface (Zeiner et al. 1988).

The Colorado Desert fringe-toed lizard is found in the Colorado and Sonoran deserts south of the Salton Sea in Imperial and San Diego Counties. Its elevational range extends from sea level up to 180 meters (590 feet) (Jennings and Hayes 1994). The Colorado Desert fringe-toed lizard is

restricted to fine, loose, wind-blown sand dunes, dry lakebeds, sandy beaches or riverbanks, desert washes, and sparse desert scrub (Zeiner et al. 1988).

Least Bittern (*Ixobrychus exilis*)

There were no detections of least bittern at or adjacent to the BSA. Although the range of least bittern encompasses portions of the BSA, typical suitable habitat does not exist within the canals that run within the BSA. Therefore, the least bittern is not expected to occur within the BSA.

Least bittern is designated as a species of special concern by CDFG (CDFG 2009). Least bittern is the smallest member of the heron family and breeds very locally in marshes in the western United States and throughout much of the eastern United States, the Caribbean, and parts of Mexico and northern Central America (Gibbs et al. 1992). Although the majority of least bitterns in the United States migrate in the winter to the neotropics, some remain through the winter in southern regions, including Southern California, especially in the Salton Sink and the lower Colorado River valley (Rosenberg et al. 1991; Gibbs et al. 1992; Patten et al. 2003). Least bitterns inhabit freshwater and brackish marshes with dense, tall growths of aquatic or semiaquatic vegetation (particularly Typha**,** Carex**,** Scirpus**,** Sagittaria**,** or Myriscus) interspersed with clumps of woody vegetation and open water, and are occasionally found in salt marshes and mangrove swamps. The primary threat to this species is the loss and degradation of its freshwater marsh habitat (Gibbs et al. 1992).

Wood Stork (*Mycteria Americana*)

There were no detections of wood stork at or adjacent to the proposed alternatives. Although there is potential for foraging within the canals that run within or adjacent to the proposed alternatives, wood stork is not expected to occur within the BSA.

Wood stork is designated as a species of special concern by CDFG (CDFG 2009). Wood stork is the only stork and the largest wading bird that breeds in the United States. Wood stork is a subtropical and tropical wading bird with a wide distribution from Mexico and the extreme southeastern United States south through much of lowland South America (generally east of the Andes) (Blake 1977; Howell and Webb 1995). They are typically found within freshwater and marine-estuarine forested habitats (Rodgers et al. 1996). Current breeding range in the United States is limited to Florida, Georgia, and South Carolina. Historically, the wood stork occurred annually as a nonbreeding visitant to Southern California. Principal areas of occurrence included the coast (mainly north to Ventura County), the Imperial Valley and Salton Sea, and the lower Colorado River valley north to Needles, San Bernardino County (Abbott 1931, 1935; Grinnell and Miller 1944). At the Salton Sea, wood storks forage in shallow bays, marshy backwaters,

canals, and drains, being most numerous around the mouths of the New and Alamo rivers (Garrett and Dunn 1981), especially the latter in recent years (Patten et al. 2003). Resting and roosting birds use partly submerged trees and shrubs in backwater areas or large snags near the water's edge. Currently, wood storks in California are almost entirely limited to the southeastern portion of the Salton Sea. The primary threat is mainly attributable to loss of area or quality of wetland foraging habitats.

Northern Harrier (*Circus cyaneus*)

One immature/female northern harrier, a fall migrant, was observed while conducting burrowing owl surveys on July 6, 2009, within the BSA. Thus, this species is present on-site. There is no suitable breeding habitat within the BSA for the northern harrier; however, suitable foraging habitat exists throughout the BSA.

The northern harrier is designated as a species of special concern by CDFG (CDFG 2009). Northern harriers winter throughout most of North America, from southern Canada to Central America and the Caribbean Islands (MacWhirter and Bildstein 1996). Their breeding range extends from Canada and Alaska to the northwestern United States, with some year-round residents in coastal California and northern Baja California, Mexico. In Imperial County, the northern harrier is a fairly common migrant in the winter and a rare summer breeder in San Diego County (Unitt 2004). The northern harrier most commonly nests on the ground at the edge of marshes, but it will also nest on grasslands, in fields, or in areas of sparse shrubs (MacWhirter and Bildstein 1996). Northern harriers hover close to the ground while foraging in grasslands, agricultural fields, and coastal marshes. Their diet consists of small and medium sized rodents, birds, reptiles, and frogs. The range of this species has been reduced as a result of urbanization and agricultural development.

White-Tailed Kite (*Elanus leucurus*)

There were no detections of white-tailed kite at or adjacent to the proposed alternatives. There is no suitable breeding habitat within the BSA for the white-tailed kite; however, suitable foraging habitat exists throughout the BSA.

The white-tailed kite is designated as a California fully protected species by CDFG (CDFG 2009). This raptor occurs in coastal lowland areas from Oregon to northern Baja California, Mexico. Nesting occurs in riparian woodlands, oaks, or sycamore groves that border grassland or open fields (Unitt 1984). This species is known to roost in large communal groups (Unitt 1984). The white-tailed kite forages over open areas and grasslands, feeding primarily on small rodents

and insects (National Geographic Society 1983). White-tailed kite populations in Southern California have declined as a result of the loss of nesting and foraging habitat. The species nests in trees of variable height in riparian or oak woodland habitats adjacent to grasslands, agricultural areas, and other open vegetation.

Lesser Sandhill Crane (*Grus canadensis canadensis*)

There were no detections of lesser sandhill crane at or adjacent to the proposed alternatives; however, surveys at the proposed alternatives were not conducted during the appropriate season to detect lesser sandhill crane and, therefore, it is unknown if they use suitable habitat within the BSA. There is a moderate potential for this species to occur within the BSA for Route Alternative 2.

Lesser sandhill crane is designated as a species of special concern by CDFG (CDFG 2009). The lesser sandhill crane consists of two recognized populations: the midcontinent population (MCP), not relevant to California, and the Pacific Flyway population (PFP), which breeds in southern Alaska and winters mainly in California's Central Valley. The lesser sandhill crane does not breed in California but is a winter resident and migrant in California from mid-September (mainly October) to early April (most depart late February to early March) (Littlefield 1999). Within the winter range of the lesser sandhill crane in California, large numbers shift over considerable distances within the primary range in the Central Valley in fall and winter. Major concentration areas are in Merced County and the Sacramento–San Joaquin River Delta, but cranes also winter regularly in the Sacramento Valley, San Joaquin River National Wildlife Refuge (NWR) area (Stanislaus County), Tulare Basin, Carrizo Plain, and locally in small numbers, the Imperial Valley south of the Salton Sea. Lesser sandhill cranes use pastures, moist grasslands, alfalfa fields, and shallow wetlands for loafing sites, and roost sites are in a variety of wetland habitats where cranes spend the night standing in shallow water. Sites in California have included rain-pooled agricultural fields, shallow freshwater lakes and ponds, alkaline lakes, and channels of shallow rivers. It is possible that the greatest threat to lesser sandhill cranes in California is changing agricultural practices in the Central Valley, where extensive feeding habitat has been, and continues to be, lost. Preferred crane foraging habitats of grain fields, irrigated pastures, and grasslands continue to decrease as orchards, vineyards, and vegetable crops increase.

Western Burrowing Owl (*Athene cunicularia hypugea*)

At least twenty one WBO and their resources (burrows, perches, pellets, etc.) were detected during Phase II and Phase III protocol surveys conducted June 15 to 30, 2009, and July 6 to 9, 2009, respectively. Thus, this species is present within the BSA.

WBO is designated as a species of special concern by CDFG and is a BLM sensitive species (CDFG 2009). WBO habitat consists of annual and perennial grasslands, deserts, and scrublands, characterized by low-growing vegetation (Zarn 1974; CBOC 1993). Additional suitable habitat may also include trees and shrubs if the canopy covers less than 30% of the ground surface. Burrows are the essential component of this owl's habitat, and both natural and artificial burrows provide protection, shelter, and nests for WBO. It will typically use burrows made by mammals, such as ground squirrels or badgers, but also may use human-made structures such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement. Primary threats of the WBO are habitat loss and fragmentation primarily due to intensive agricultural and urban development, and habitat degradation.

Loggerhead Shrike (*Lanius ludovicianus*)

Loggerhead shrikes were detected throughout the survey periods and observed at various locations within the BSA. Thus, this species is present within the BSA.

Loggerhead shrike is designated as a species of special concern by CDFG (CDFG 2009). It inhabits open habitat types such as grasslands, old (fallow) fields, pastures, farmland, and desert scrub. The species was found in creosote bush scrub and habitat composed of both creosote bush scrub and desert dry wash woodland. For foraging, they require perches of tall enough stature to overlook hunting areas, such as tree snags, stumps, and fence posts. They also require vegetation with thorns (or barbed wire fences) for impaling their prey. Prey includes invertebrates and small vertebrates, including small mammals, birds, and reptiles. While this species has been in steady decline throughout much of its range, beginning in the northeast in the 1930s and in the southeast and Midwest by the 1960s, it was still fairly common in California as late as 1970. It showed significant declines in most of California beginning around 1968 (Sauer et al. 2005); however, in the Southern California deserts, it has shown no marked decline (Shuford and Gardali 2008). Outside of the breeding season, males and females defend neighboring territories, which coalesce at the beginning of the nesting period.

Crissal Thrasher (*Toxostoma crissale*)

Crissal thrasher was not detected at or adjacent to the proposed alternatives. However, this species' somewhat secretive habits may have led to its undetectability. Additionally, this species may occupy fragmented pockets of suitable habitat within the BSA; therefore, there is a moderate potential for this species to occur within the BSA.

Crissal thrasher is designated as a species of special concern by CDFG (CDFG 2009). Crissal thrasher is distributed in widely scattered patches of appropriate habitat throughout the southwestern portions of the United States from southeastern California east through southern Nevada, southwestern Utah, northern Arizona, and southwestern New Mexico to western Texas, and south to south-central Mexico and northeast Baja California (AOU 1998). Throughout the range of the crissal thrasher, this species occupies a relatively large variety of desert riparian and scrub habitats from below sea level to more than 6,000 feet (1,800 meters). In California, this thrasher occupies predominately riparian scrub or woodland at lower elevations (e.g., Colorado River Valley), and the low, dense scrub associated with arroyos at higher elevations in the Mojave Desert, normally at or near the upper reaches of desert scrub vegetation and below the piñon-juniper foothill woodland of the slopes above (Cody 1999; Garrett and Dunn 1981). Crissal thrasher is a year-round resident in California that breeds from February to late July (Cody 1999). The loss and degradation of crissal thrasher requisite habitats—riparian areas, desert washes, and patches of mesquite—is an ongoing and primary threat (Laudenslayer et al. 1992). In the Salton Sea area, habitat loss, degradation, and fragmentation from agricultural and urban development and invasive tamarisk (*Tamarix* spp.) has resulted in this thrasher becoming increasingly local and "uncommon" (Patten et al. 2003).

Le Conte's Thrasher (*Toxostoma lecontei lecontei)*

There were no detection of Le Conte's thrasher at or adjacent to the proposed alternatives. Although Le Conte's thrasher is a year-round resident in Imperial County there is a moderate potential for this species occur within the BSA.

The Le Conte's thrasher is a CDFG Species of Special Concern. Le Conte's thrasher is an uncommon to rare, local resident in southern California deserts from southern Mono County south to the Mexican border, and in western and southern San Joaquin Valley. It occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats. Le Conte's thrasher may also occur in Joshua tree habitat with scattered shrubs (Grinnell and Miller 1944; McCaskie et al. 1979, 1988; Garrett and Dunn 1981 as cited in Zeiner 1989).

This species feeds on a variety of insects and other terrestrial arthropods; occasionally on seeds, small lizards, other small vertebrates (Bent 1948; Sheppard 1970 as cited in Zeiner 1989). It primarily forages on ground by probing and digging in soil and litter with bill. The Le Conte's thrasher is a year-round, non-migratory species that breeds from late January into early June, with a peak from mid-March to mid-April.

Yellow-Breasted Chat (*Icteria virens*)

There were no detections of yellow-breasted chat at or adjacent to the proposed alternatives. Although this species is known to occur at areas within Imperial County, yellow-breasted chat is not expected within the BSA, as typical suitable habitat is not present.

Yellow-breasted chat is designated as a special species of concern by CDFG (CDFG 2009). Yellow-breasted chat is the largest wood-warbler and breeds across the central and eastern United States and southern Canada from South Dakota to New Hampshire and southward to eastern Texas and northern Florida, in addition to scattered regions across the western United States from southern Canada to very northern Mexico. They are typically found in second growth, shrubby old pastures, thickets, brushy areas, scrub, woodland undergrowth, and fence rows, and are often found in low, wet places near streams, pond edges, or swamps. Nesting yellow-breasted chats occupy early successional riparian habitats with a well-developed shrub layer and an open canopy. Breeding chats have declined in the Salton Sea area, where, in the 1990s, at most six pairs were known from only four sites (Patten et al. 2003). Rosenberg et al. (1991) estimated that chats numbered about 700 individuals along the lower Colorado River in 1986, representing a decline of 30% since 1976, attributable to habitat loss from flooding in the 1980s. Destruction of riparian woodland was implicated in the early decline of the yellow-breasted chat in California (Remsen 1978), but the species' absence from seemingly suitable habitat suggests additional pressures. Chats are frequent hosts to nest parasitism by the brown-headed cowbird (*Molothrus ater*) through much of their range (Ehrlich et al. 1988). Additionally, yellow-breasted chat's dependence on understory and shrubby riparian vegetation for nesting makes them vulnerable to habitat loss from vegetation removal along river channels during flood-control maintenance and from urban and agricultural development.

Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*)

There were no detections of yellow-headed blackbirds at or adjacent to the proposed alternatives. Although this species is known to occur and nest in areas within Imperial County, suitable yellow-headed blackbird nesting habitat does not occur within the BSA; therefore, this species is

not expected to breed on-site. However, many blackbird species forage in agricultural fields and may use water in canals for drinking and bathing, both of which occur in the BSA.

Yellow-headed blackbird is designated as a special species of concern by CDFG (CDFG 2009). Yellow-headed blackbird migrates broadly across western and central North America to wintering grounds largely in western and northern Mexico (Jaramillo and Burke 1999). They breed widely and abundantly across western Canada and the United States, but are patchily distributed in the southwestern portion of its breeding range (Jaramillo and Burke 1999; Twedt and Crawford 1995). In California, yellow-headed blackbird occurs primarily as a migrant and summer resident from April to early October, breeds from mid-April to late July (Twedt and Crawford 1995), and small numbers remain primarily in the southern Central Valley and the Imperial and Colorado River valleys in winter. Yellow-headed blackbirds breed almost exclusively in marshes with tall emergent vegetation, such as tules (*Scirpus* spp.) or cattails (*Typha* spp.), generally in open areas and edges over relatively deep water (Orians and Willson 1964). Known colony sites within Imperial County include Fig Lagoon, Finney and Ramer lakes, and the Wister Unit of Imperial Wildlife Area (WA), with the total population numbering probably under 200 pairs. Habitat loss—primarily wetland drainage for irrigation, flood control, or water diversion—is the main threat to this species.

American Badger (*Taxidea taxus*)

There were no detections of American badger, or any sign at or adjacent to the proposed alternatives; however, the American badger is known to occur within Imperial County (SDNHM 2010). Furthermore, the home range of American badger encompasses a large area and could go undetected without focused surveys. The potential for this species to occur on-site is moderate due presence of burrows on-site.

The American badger is designated as a species of special concern by CDFG (CDFG 2009). American badger is a resident of level, open areas in grasslands, agricultural areas, and open shrub habitats. It digs large burrows in dry, friable soils and feeds mainly on fossorial mammals: ground squirrels, gophers, rats, mice, etc. Badgers are primarily active during the day, but may become more nocturnal in close proximity to humans. The home range of badgers has been measured to be 1,327 to 1,549 acres for males and 338 to 751 acres for females in Utah (Lindzey 1978) and 400 to 600 acres in Idaho (Messick and Hornocker 1981). Mating occurs in late summer or early fall, and two to three young are born 183 to 265 days later in March or April (Long 1973). Badgers are known to live up to 11 to 15 years (Messick and Hornocker 1981).

Desert Kit Fox (*Vulpes macrotis arsipus*)

Inactive desert kit fox burrows and complexes were found within the BSA during spring 2009. A few old burrows and complexes were found within the southern portion of the BSA in suitable creosote bush scrub desert in the Yuha Desert. A suitable prey base and habitat to support this species occurs throughout the BSA. Therefore, this species is present within the BSA.

The desert subspecies of kit fox is a protected fur-bearing mammal. Suitable habitat for this fossorial mammal consists of arid open areas, shrub grassland, and desert ecosystems. Kit fox diet consists mostly of small rodents, especially kangaroo rats. Kit foxes will also eat rabbits, lizards, insects, and berries. Dens have multiple entrances, and entrances are up to 8 inches wide, often keyhole-shaped. Litters of three to five young are born in February or March (Egoscue 1962; McGrew 1979).

California Leaf-Nosed Bat (*Macrotus californicus*)

This species of bat has been recorded within Imperial County but was not detected during biological surveys in the BSA (SDNHM 2010). The California leaf-nosed bat is a species of special concern by CDFG and a BLM sensitive species (CDFG 2009). This species roosts in warm and humid caves, mines, and buildings with temperatures that often exceed 82.4°F (28°C) (Brown 2005). It will forage up to 6.2 miles (10 kilometers) from its roost location (Brown 2005). It has a high affinity to stable, warm environments for roosting, which are absent from the BSA. Therefore, there is a low potential to forage within desert dry wash woodland and no potential for the species to roost within the BSA.

Pallid Bat (*Antrozous pallidus*)

This species of bat has been recorded within Imperial County but was not detected during biological surveys in the BSA (SDNHM 2010). The Pallid bat is a species of special concern by CDFG and a BLM sensitive species (CDFG 2009). In the desert regions of the Mojave and Sonoran deserts, this species inhabits low-elevation rocky arid deserts and canyonlands. It is most common in dry environments. The species roosts in crevices in locations such as rocky outcrops, cliffs, caves, mines, tree bark, tree cavities, bridges, barns, abandoned buildings, and other structures that are high above the ground, warm, and inaccessible to terrestrial predators (Rambaldini 2005).

Pallid bats are opportunistic generalists that glean a variety of insects. They will forage over open habitats such as shrub-steppe grasslands, roads, savannah grasslands, and a variety of woodlands, forests, and orchards (Rambaldini 2005). There is a high potential for the species to forage within the desert dry wash woodland, as suitable roosting locations may be nearby in trees, bridges, barns, and buildings.

Townsend's Big-Eared Bat (*Corynorhinus townsendii*)

This species of bat has been recorded within Imperial County but was not detected during biological surveys in the BSA (SDNHM 2010). The Townsend's big-eared bat is a species of special concern by CDFG and a BLM sensitive species (CDFG 2009). This species has been reported from a variety of habitats that include deserts, prairies, riparian communities, active agricultural areas, and forests. This bat prefers caves and cave-like structures for roosting. Preferred roost locations include abandoned mines and locations with caverniculous-forming rock. They are also known to roost in buildings, bridges, rock crevices, and hollow trees where there is sufficient space to hang pendant-like on open surfaces (Piaggio 2005). This species is a moth specialist and will forage along edge habitats such as near streams and wooded habitats (Piaggio 2005). There is a moderate potential for this species to forage within the BSA, particularly along the canals and agricultural fields. This species is not expected to roost within or adjacent to the BSA.

Yuma Myotis (*Myotis yumanensis*)

This species of bat has been recorded within Imperial County but was not detected during biological surveys in the BSA (SDNHM 2010). The Yuma Myotis is a BLM sensitive species (CDFG 2009). This species occurs in a variety of habitats, including riparian, arid scrublands, deserts, and forests. It will roost in bridges, buildings, crevices in cliffs, caves, mines, and trees. This species prefers to forage early in the evening on emerging aquatic insects (Bogan et al. 2005). The canals within the BSA provide suitable foraging habitat for this species, and there is a high potential for the species to forage within the BSA. This species is not expected to roost within the BSA.

Western Mastiff Bat (*Eumops perotis*)

This species of bat has been recorded within Imperial County but was not detected during biological surveys in the BSA (SDNHM 2010). The Western mastiff bat is a species of special concern by CDFG and a BLM sensitive species (CDFG 2009). This species is present primarily

where significant rock features provide suitable roosting habitat (Pierson 2005). It will occur in habitats such as desert scrub, chaparral, oak woodlands, and upper elevation forests. The species is primarily a cliff-dwelling species where exfoliating rock slabs provide suitable crevices. Large boulders and buildings will sometimes provide sufficient roosting habitat. The species prefers roosting in locations with a clear vertical drop of at least 9.8 feet (3 meters) (Siders 2005). The species may forage a long distance from roosting sites over dry desert washes, flood plains, chaparral, woodlands, forests, and agricultural areas. The species is known to forage over agricultural fields in the Imperial Valley and has been detected in open desert at least 15 miles (24 kilometers) from the nearest possible roost site (Siders 2005). Therefore, there is a high potential the species will forage within the BSA, but there are no suitable roost locations within the BSA.

Pocketed Free-Tailed Bat (*Nyctinomops femorosaccus*)

This species of bat has been recorded within Imperial County but was not detected during biological surveys in the BSA (SDNHM 2010). The pocketed free-tailed bat is a species of special concern by CDFG (CDFG 2009). The species is colonial and roosts predominantly in crevices of rugged cliffs, rocky outcrops, and slopes, but may also roost in buildings and caves, and under roof tiles. It has been detected foraging within desert shrubs and forests (Navo 2005). Therefore there is low potential for the species to forage over open desert shrubs within the BSA, but the BSA lacks the rocky outcrops needed for roosting.

3.5 CRITICAL HABITAT

The BSA does not include any designated critical habitat for any federally listed plant or wildlife species. The BSA contains a large portion of habitat within the FTHL Yuha Desert Management Area and, if the FTHL is listed as a threatened species under the federal ESA, then it is likely that the Yuha Desert Management Area will become classified as critical habitat for the FTHL.

3.6 WILDLIFE MOVEMENT

The site of the proposed project could be used by a variety of wildlife species for movement purposes. Wildlife movement activities typically fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions), (2) seasonal migration, or (3) movements related to home range activities (foraging for food or water; defending territories; searching for mates, breeding areas, or cover).

Regionally, the proposed project is located east of the Carrizo Mountains and west of a canal system known as the Westside Main Canal, which is located east of El Centro, California, within the Yuha Basin ACEC. This area includes the Yuha Desert Management Area, an area specifically designated by BLM for the FTHL, as outlined in the FTHLRMS (ICC 2003). A significant portion of the BSA is located within the Yuha Desert Management Area (approximately two-thirds of the BSA).

In general, several species and large mammals such as coyote, kit fox, mule deer, bobcat, American badger, and mountain lion are likely to use habitat in the disturbance area; however, there does not appear to be features within the BSA to support a concentrated wildlife movement corridor such as ephemeral desert washes combined with associated wash-dependent vegetation communities that wildlife species may typically use as movement corridors for the above-mentioned wildlife movement activities. The dominant topography and features within the BSA are largely flat, open expanses with shallow ephemeral desert washes that likely would not manipulate any wildlife species to follow directly during wildlife movements, as associated wash-dependant vegetation is sparsely distributed.

Results from focused FTHL surveys within the BSA suggest that, beyond the boundaries of the Yuha Desert Management Area, the BSA is located in an area that supports local dispersal opportunities and likely provides habitat connectivity for the FTHL.

3.7 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

This section discusses the laws, ordinances, and regulations (LORS) related to biological resources within the proposed project's disturbance area.

3.7.1 LORS Compliance

The proposed project will comply with applicable federal, state, and local LORS throughout project construction and operation. Potentially applicable LORS are summarized in Table 7 and discussed in Sections 3.7.2 through 3.7.4.

Table 7
LORS Applicable to the Proposed Project

LOR	Applicability
Federal	
Endangered Species Act of 1973 (ESA), 16 U.S. Code (USC) Section 1531 et seq., and implementing regulations, Title 50 Code of Federal Regulations (CFR) Section 17.1 et seq.	Designates and protects federal threatened and endangered plants and animals and their critical habitat. Requires federal agency consultation with the U.S. Fish and Wildlife Service (USFWS) and issuance of Biological Opinion and incidental take authorization for listed species.
Migratory Bird Treaty Act (MBTA), 16 USC Sections 703–712	Prohibits take of protected migratory birds.
Clean Water Act (CWA), 33 USC Section 1251 et seq.	Restore and maintain the chemical, physical, and biological integrity of the nation's waters and regulate the discharge of pollutants and dredged or fill material to the navigable waters of the U.S.
National Environmental Policy Act (NEPA), 42 USC Section 4321 et seq., and implementing regulations 40 CFR 1500–1508	Requires federal agencies to analyze environmental impacts of proposed actions with a federal nexus and to disclose impacts to the public.
Western Colorado Desert/California Conservation Area Plan Amendment (WECO)	Protects and conserves natural resources while simultaneously balancing human uses of the California portion of the Colorado Desert ecosystem.
California Desert Conservation Area (CDCA) Plan	Under the Federal Land Policy and Management Act, BLM is required to develop Resource Management Plans. All activities proposed for public land must be consistent with the approved Resource Management Plan(s).
State	
California Environmental Quality Act (CEQA) (Public Resources Code Section 15000 et seq.)	CEQA requires identification of significant environmental effects of proposed projects (including impacts on biological resources) and avoidance (where feasible) or mitigation of the significant effects. CEQA applies to "projects" proposed to be undertaken or requiring approval by state and/or local governmental agencies. "Projects" are activities that have the potential to have a physical impact on the environment.
California Endangered Species Act (CESA) of 1984, Fish and Game Code Sections 2050–2098	Protects California's endangered and threatened species, including species designated as candidates for listing.
California Fish and Game Code (CFGC) Fully Protected Species: Section 3503, 3503.5, 3511: Fully Protected Birds Section 4700: Fully Protected Mammals Section 5050: Fully Protected Reptiles and Amphibians Section 5515: Fully Protected Fish	Prohibits the "take" of listed plants and animals that are classified as "Fully Protected" in California.
Native Plant Protection Act (NPPA) of 1977, CFGC Section 1900 et seq.	Provides specific protection measures for identified populations of state rare and endangered plants.
Title 14 California Code of Regulations (CCR) Sections 670.2 and 670.5	Listings of plants and animals of California declared to be threatened or endangered.
CFGC Section 1600 et seq., Streambed Alteration Agreement (SAA)	Requires California Department of Fish and Game (CDFG) to review project impacts to waters of the state (bed, banks, channel, or associated riparian areas of a river, stream, or lake), including impacts to wildlife and vegetation from sediments, diversions, and other disturbances.

LOR	Applicability
The 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne) California Water Code (CWC) Section 13000 et seq.	Regulates discharges of waste and fill material to waters of the state, including "isolated" waters and wetlands.
Local	
Imperial County General Plan (1993)	Provides land use designations, goals, and policies for the development and conservation of land within the unincorporated areas of Imperial County.

3.7.2 Federal LORS

Federal LOS that are applicable to the BSA are discussed below.

Endangered Species Act (ESA) (16 U.S. Code [USC] Sections 1531 et seq.). This 1973 law, administered by USFWS, is designed to minimize impacts to imperiled plants and animals, as well as facilitate recovery of such species. Declining plant and animal species are listed as "endangered" or "threatened" based on a variety of factors. Applicants for projects requiring federal agency action that could adversely affect listed species are required to consult with and mitigate impacts in consultation with USFWS. Adverse impacts are defined as "take" ("to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct"), which is prohibited except as authorized through consultation with USFWS and issuance of an Incidental Take Statement under Section 7 or Section 10 of the ESA, depending on whether there is a federal nexus (federal permit required or funding involved). The project requires BLM to issue a ROW grant, providing a federal nexus. Therefore, the proposed project will conduct the ESA consultation process under Section 7.

Migratory Bird Treaty Act (MBTA) (16 USC Sections 703–711). This law prohibits actions resulting in the pursuit, capture, killing, and/or possession of any protected migratory bird, nest, egg, or parts thereof. USFWS maintains a list of designated migratory birds occurring in various regions of the United States. This regulation can constrain construction activities that have the potential to affect nesting birds either through vegetation removal and land clearing or other construction- or operation-related disturbance.

Clean Water Act (CWA). Through formal field surveys following the latest established federal protocol and guidance documents for delineating jurisdictional waters of the U.S., including hydrological investigation and analysis, the proposed project team determined that the disturbance area does not support jurisdictional waters of the U.S. It is anticipated that the U.S. Army Corps of Engineers (USACE) will not assert jurisdiction over any waters and/or aquatic features occurring within the disturbance area. Final acreages of jurisdictional waters of the U.S.

will be based on the Approved Jurisdictional Determination (JD) process, per the March 30, 2007, U.S. Army Corps of Engineers Jurisdictional Determination Form Guidebook; the June 5, 2007, Approved JD Form; the June 5, 2007, Joint Guidance Memorandum; the December 2, 2008, Guidance Memorandum; or Regulatory Guidance Letter (RGL) 08-02 (if RGL 08-02 is deemed applicable and appropriate [i.e., the permit applicant, or other "affected party" can decline to request and obtain an Approved JD and elect to use a Preliminary JD instead]).

National Environmental Policy Act (NEPA) 1969 (42 USC 4321 et seq.). NEPA established a national policy for promoting environmental protection that includes a multidisciplinary approach to considering environmental effects in decision-making intended to "encourage productive and enjoyable harmony between [humans] and [their] environment; to promote efforts [that] will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of [humans]."

NEPA requires federal agencies to analyze and publicly disclose the environmental impacts of a proposed project. To do so, federal agencies are required to prepare either an Environmental Assessment (EA) or, where an action may significantly affect the quality of the human environment, an Environmental Impact Statement (EIS). These documents explore project alternatives and identify the likely environmental consequences of each action. These documents contain statements of the environmental impacts and include mitigation measures to lessen the effects of a proposed project to the extent practicable. The significance of an impact is determined by both its context and its intensity. "Context" includes society as a whole, the affected region, the affected interests, and the locality. "Intensity" refers to the severity of impact, including "the degree to which the action may adversely affect an endangered or threatened species or habitat that has been determined to be critical under [ESA]." Based on the potential for significant environmental impacts, it is anticipated that BLM would be required to prepare an EIS for the proposed project to satisfy NEPA.

Western Colorado Desert/California Conservation Area Plan Amendment (BLM 2003). The Federal Land Policy and Management Act (FLPMA) requires BLM to develop land use plans, also known as Resource Management Plans, to guide BLM's management of public land. BLM is required to determine conformity of project developments with the California Desert Conservation Area (CDCA) Plan, including the Western Colorado Desert/California Desert Conservation Area Plan Amendment (WECO). WECO is a landscape-scale, multi-agency planning effort that protects and conserves natural resources while simultaneously balancing human uses of the California portion of the desert ecosystem. This plan was prepared under the regulations implementing the FLPMA of 1976. WECO provides reserve management for the

peninsular big horned sheep, integrated ecosystem management for special-status species including the FTHL and natural communities for all federal lands, and regional standards and guidelines for public land health for BLM lands.

California Desert Conservation Area (CDCA) Plan. Per Title 43 Code of Federal Regulations (CFR) Section 1610.5-3, BLM must manage the land within its jurisdiction in compliance with a Resource Management Plan. Approximately 48.7 to 87.9 acres of the BSA (depending on the alternative chosen) are located on lands under BLM's jurisdiction and managed pursuant to the CDCA Plan. The CDCA Plan serves as a guide for the management of all BLM-administered lands in three desert areas: the Mojave, the Sonoran, and a small portion of the Great Basin. The CDCA Plan covers approximately 25 million acres, of which 12 million are public lands. The primary goal of the CDCA Plan is to provide overall maintenance of the land while planning for multiple uses and balancing the needs of people with the protection of the natural environment.

3.7.3 State LORS

The following are state LORS that are applicable to the proposed project.

California Environmental Quality Act (CEQA) (Public Resources Code Section 15000 et seq.). CEQA requires identification of significant environmental effects of proposed projects (including impacts on biological resources) and avoidance (where feasible) or mitigation of the significant effects. CEQA applies to projects proposed to be undertaken or requiring approval by state and/or local governmental agencies. "Projects" are activities that have the potential to have a physical impact on the environment.

California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et seq.). This state law prohibits the "take" (defined as "to hunt, pursue, catch, capture, or kill") of state-listed species, except as otherwise provided in state law. CESA, administered by CDFG, is similar to the federal ESA, although unlike the federal law, CESA applies incidental take prohibitions to species currently petitioned for state listing status (i.e., candidate species). State lead agencies are required to consult with CDFG to ensure that their authorized actions are not likely to jeopardize the continued existence of any state-listed species or result in the degradation of occupied habitat.

Under Section 2081, CDFG authorizes "take" of state-listed endangered, threatened, or candidate species through incidental take permits or memoranda of understanding if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully

mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in questions, and (4) the applicant ensures suitable funding to implement the measures required by CDFG.

One species designated as threatened by CESA, Gila woodpecker, occurs within the BSA, and appropriate measures coinciding with CESA requirements must be followed, if the alignment alternative associated with the Gila woodpecker is selected for development.

Natural Communities Conservation Plan/Habitat Conservation Plan. A number of sensitive species, including WBO, FTHL, MOPL, loggerhead shrike, northern harrier, Gila woodpecker, and others that are covered by the Imperial Valley Natural Communities Conservation Plan (NCCP)/Habitat Conservation Plan (HCP), would potentially be impacted (IVNCCP/HCP 2006); however, the Imperial Valley NCCP/HCP has not yet been finalized and will not be further discussed in this document.

California Fish and Game Code Section 3503. This code prohibits take, possession, or needless destruction of the nests or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto.

California Fish and Game Code Section 3503.5. This code makes it unlawful to take, possess, or destroy birds of prey. It also prohibits the take, possession, or destruction of nests or eggs of any bird of prey.

California Fish and Game Code Section 3511. This law describes bird species, primarily raptors, that are "fully protected." Fully protected birds may not be taken or possessed, except under specific permit requirements.

California Fish and Game Codes Sections 4700, 5050, and 5515. These codes list mammal, amphibian, and reptile species that are classified as fully protected in California.

Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for "rare and endangered" are different from those contained in the CESA, although CESA-listed rare and endangered species are included in the list of species protected under the NPPA.

Title 14, California Code of Regulations Sections 670.2 and 670.5. This code lists plant and animal species designated as threatened and endangered in California. California Species of

Special Concern (CSC) is a category applied by CDFG to those species that are indicators of regional habitat changes or are considered potential future protected species. CSCs do not have any special legal status, but are intended by CDFG for use as a management tool to take these species into special consideration when decisions are made concerning the future of any land parcel.

California Fish and Game Code Section 1600 et seq. Pursuant to these sections, CDFG regulates all changes to the natural flow, bed, or bank of any river, stream, or lake that support fish or wildlife resources. A stream is defined broadly as a body of water that flows at least periodically, or intermittently, through a channel that has banks and that supports fish or other aquatic biota. Such areas are formally referred to as "waters of the state." Impacts to vegetation and wildlife from sediment, diversions, and other disturbances are included in the review.

Project proponents must provide CDFG with written notification before activities begin that will do the following:

- Substantially divert or obstruct the natural flow of any river, stream, or lake;
- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake.

Notification is generally required for any activity that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks and support fish or other aquatic life, and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Generally, CDFG is concerned with activities that have the potential to impact state-regulated resources at the activity site, as well as the effects of those actions on the ecosystem at and surrounding the activity (i.e., upstream, downstream, and neighboring). As the proposed project's disturbance area contains "waters of the state," the project will submit a CFGC Section 1600 et seq. Lake and Streambed Alteration Agreement (SAA) notification to CDFG.

1969 Porter Cologne Water Quality Control Act (Porter-Cologne) (California Water Code Section 13000 et seq.). Through a programmatic agreement between the federal government and the states, the Regional Water Quality Control Board (RWQCB) has primary authority for permit

and enforcement activities under Porter-Cologne and the CWA. Under Porter-Cologne, RWQCB regulates the "discharge of waste" to waters of the state. The term "discharge of waste" is also broadly defined in Porter-Cologne, such that discharges of waste include fill, any material resulting from human activity, or any other "discharge" that may directly or indirectly impact waters of the state relative to implementation of Section 401 of the CWA.

Porter-Cologne authorizes RWQCB to regulate discharges of waste and fill material to waters of the state, including "isolated" waters and wetlands, through the issuance of waste discharge requirements (WDRs). Under Porter-Cologne, all parties proposing to discharge waste that could affect the quality of waters of the state, other than into a community sewer system, file with the appropriate RWQCB a Report of Waste Discharge (ROWD) containing such information and data as may be required by RWQCB. RWQCB then responds to the ROWD by issuing a WDR in a public hearing or by waiving WDRs (with or without conditions) for that proposed discharge. RWQCB has a statutory obligation to prescribe WDRs except where it finds that a waiver of WDRs for a specific type of discharge is in the public interest. Therefore, all parties proposing to discharge waste that could affect waters of the state, but do not affect federal waters (which requires a CWA Section 404 permit and CWA Section 401 Certification), must file an ROWD with the appropriate RWQCB.

3.7.4 Local LORS

Imperial County General Plan (1993).The Imperial Valley NCCP/HCP is an ongoing planning effort that includes the project area within its geographic boundaries. A planning agreement (IVNCCP/HCP 2006) has been implemented, but the NCCP/HCP has not yet been developed and, therefore, will not be further addressed in this report.

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CHAPTER 4
IMPACTS

This section addresses project-related impacts on vegetation communities and special-status plant and wildlife species during project construction and operation. Direct and indirect impacts may be either permanent or temporary. These impact categories are defined below.

- Direct: Direct impacts are caused by the project and occur at the same time and place as the project. Any alteration, disturbance, or destruction of biological resources that would result from project-related activities is considered a direct impact. Direct impacts would include direct losses to native habitats, potential jurisdictional waters, wetlands, and sensitive species, and diverting natural surface water flows. Specifically, direct impacts may include injury, death, and/or harassment of listed and/or sensitive species. Direct impacts may also include the destruction of habitats necessary for species breeding, feeding, or sheltering. Direct impacts to plants can include crushing of adult plants, bulbs, or seeds.

- Indirect: As a result of project-related activities, biological resources may also be impacted in a manner that is not direct. Indirect impacts may occur later in time or at a place that is farther removed than direct impacts, in distance, from the BSA, but are still reasonably foreseeable and attributable to project-related activities. Examples include habitat fragmentation; elevated noise, dust, and lighting levels; soil compaction; increased human activity; decreased water quality; changes in hydrology, runoff, and sedimentation; and the introduction of invasive wildlife and plants.

- Permanent: All impacts that result in the long-term or irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources. All direct impacts in the disturbance area are considered permanent.

- Temporary: Any impacts considered to have reversible effects on biological resources can be viewed as temporary. Examples include the generation of fugitive dust during construction, or removing vegetation for underground pipeline trenching activities and either allowing the natural vegetation to recolonize or actively revegetating the impact area. Surface disturbance that removes vegetation and disturbs the soil typically would be considered a long-term temporary impact if vegetation is allowed to reestablish overtime. However, because of the very slow natural recovery in arid ecosystems (such as those

present on the project site and vicinity) all such impacts in the BSA are considered permanent.

For the purpose of this analysis, the following applicable thresholds of significance have been used to determine whether implementing the BSA would result in a significant impact. These thresholds of significance are based on Appendix G of the State CEQA Guidelines. A biological resources impact is considered significant if implementation of the proposed project would do any of the following:

- 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 CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFG or USFWS;
- Have a substantial adverse effect on federal protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marshes, vernal pools, and coastal areas) or any state-protected jurisdictional areas not subject to regulation under Section 404 of the CWA 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;
- Conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan; or
- Substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

4.1 KEY DEFINITIONS AND BIOLOGY-RELATED DESIGN ELEMENTS

The following paragraphs define some of the key proposed project elements as they are used in the biological resources investigation.

The biological resources investigation uses a number of definitions for the area(s) of interest. The BSA includes the disturbance area acreage plus the additional surrounding buffer and the entire area covered by the ROW application to BLM (9,405 acres).

4.1.1 Access Roads

All access roads would be located within the 140-foot ROW and total permanent disturbance would amount to 14.33 acres (Preferred Alignment), 14.24 acres (Route Alternative 1), and 7.48 acres (Route Alternative 2).

4.1.2 Substation Expansion and New Liebert Substation

The construction of the new Liebert Substation would impact approximately 14.38 acres for the preferred route and 14.4 acres for Route Alternatives 1 and 2 of Sonoran creosote bush scrub. The expansion of the existing Dixieland Substation would impact approximately 1.2 acres of developed land.

4.2 CONSTRUCTION IMPACTS

This section identifies impacts to the biological resources within the BSA that would result from construction of the proposed project. Sensitive vegetation communities and other land cover types were defined in Section 3.1, and sensitive species were defined in Sections 3.3 and 3.4. All jurisdictional waters, including unvegetated channels, are considered sensitive.

4.2.1 Vegetation Communities

Sensitive vegetation communities and other land cover types were defined in Section 3.1. Desert dry wash woodland and mesquite bosque are considered sensitive vegetation communities per the CDFG Vegetation and Mapping Program (CDFG 2003).

Direct Impacts

One sensitive habitat would be impacted by the construction of the 16-foot-wide access road: desert dry wash woodland.

Direct impacts to nonsensitive vegetation communities within the disturbance area would occur as a result of construction activities. The direct impacts would be a result of the construction of the transmission line, which would result in the removal of vegetation within the disturbance

area. Table 8 identifies the vegetation communities and other cover types within the disturbance area that would be directly impacted. Direct, impacts to nonsensitive vegetation communities and cover types would not be considered significant. Both desert dry wash woodland and mesquite bosque are sensitive vegetation communities (CDFG 2003).

Table 8
Anticipated Impacts to Vegetation

Vegetation Communities and Other Cover Types	Preferred Alignment Disturbance Area Acres	Route Alternative 1 Disturbance Area Acres	Route Alternative 2 Disturbance Area Acres
Riparian			
Arrow Weed Scrub	0	0	0.3
Desert Dry Wash Woodland	0.10	0.31	0
Upland			
Desert Saltbush Scrub	1.31	0.92	0.62
Mesquite Bosque	0	0	0
Sonoran Creosote Bush Scrub	49.81	49.98	34.91
Tamarisk Scrub	0.43	1.09	1.31
Tamarisk Woodland	2.03	0.81	0.9
Agriculture	0.23	0	2.78
Developed	1.62	1.56	10.89
Disturbed Habitat	7.97	6.942	2.05
Open water	0	0	3.24
Total	**63.50**	**61.61**	**57.00**

The 140-foot ROW and 1,000-foot survey buffer associated with the proposed project intersect two sensitive vegetative communities: desert dry wash woodland and mesquite bosque (Figure 3; Table 8). The most common habitat type that would be impacted is Sonoran creosote bush scrub, followed by tamarisk scrub, and disturbed habitat.

The vegetation communities in Table 8 have the potential to be impacted during construction from staging of equipment and materials and creation of new access roads. There is a potential to adversely impact desert dry wash woodland within at least two washes that traverse the proposed project. This is a potentially significant impact and mitigation is required.

Indirect Impacts

Indirect impacts, both permanent and temporary, include but are not limited to, an increase in fugitive dust, which reduces plant photosynthetic capacity; a potential increase in fire frequency; introduction of exotic and invasive species; and potential changes in hydrology.

Significance After Mitigation

Potential construction-related direct and indirect impacts to sensitive vegetation communities would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

4.2.2 Jurisdictional Waters

Direct Impacts

A delineation will be conducted by an experienced delineator to determine impacts so that IID can apply for permits from the ACOE, Regional Water Quality Control Board (RWQCB), and CDFG. Areas with potential to be subject to ACOE jurisdiction would include those "non-isolated" areas dominated by hydrophytic vegetation and exhibiting visible aboveground hydrology indicators. Wetland hydrology would be determined based on the presence of visible aboveground indicators. Presence of hydric soils would be assumed for areas that support hydrophytic vegetation and wetland hydrology. ACOE unvegetated Waters of the U.S. would be assumed for all areas of a defined water feature that lack wetland indicators yet exhibit ordinary high water marks. Areas with potential to be subject to CDFG jurisdiction would include areas with wetland vegetation and/or evidence of stream flow. CDFG can also take jurisdiction over riparian/lacustrine vegetation and vernal swales.

Significance After Mitigation

Design features to ensure the integrity of poles will ensure that the poles are placed in locations that are not subject to erosion. Additionally the implementation of general minimization measures would ensure that all facilities work occurs within designated work areas and protect off-site resources.

4.2.3 Flora

Overview of Direct and Indirect Impacts to Special-Status Plant Species

Ribbed cryptantha and Thurber's pilostyles are present within both the footprint and buffer areas of the BSA.

Direct Impacts

The proposed project may result in direct impacts to special-status plant species. Direct impacts to plants can include crushing of adult plants and/or seeds. Direct impacts specific to special-status plant species are discussed below.

Indirect Impacts

Potential permanent, indirect impacts to special-status plant species are likely to arise from construction of the proposed project, as discussed below.

Federally and State-Listed Plant Species

Direct Impacts

No federally listed or state-listed plant species were detected during spring 2010 rare plant surveys.

Indirect Impacts

No indirect impacts to federally listed or state-listed plant species are expected.

Significance After Mitigation

No mitigation is required.

Other Special-Status Plant Species

Direct Impacts

Direct permanent impacts to 16.9 acres of ribbed cryptantha would occur from the proposed project. Although other locations are known of its occurrence in Imperial County, its relative abundance and distribution are poorly known (CDFG 2003). It is expected to be relatively abundant in loose sands throughout intact Sonoran creosote bush scrub habitat throughout the southern portion of the proposed project.

Direct impacts to Thurber's pilostyles will occur to one of the two plants from the proposed project. Both of the sites where Thurber's pilostyles was detected could be avoided during

construction. Although other locations are known of its occurrence in Imperial County, its relative abundance, persistence, and distribution are poorly known (CDFG 2003). Although it is relatively widespread in the southwest, it is regionally centered east of the peninsular range and west of the Salton Sea.

Indirect Impacts

Indirect impacts may occur to ribbed cryptantha from soil disturbance that may tend to compact or minimize the drifting sand habitat, especially such conditions that may favor Sahara mustard (*Brassica tournefortii*).

Indirect impacts to Thurber's pilostyles would be avoided by avoiding direct impact and flagging the areas where the host plant occurs.

Significance After Mitigation

Ribbed cryptantha is annual plant of loose sandy habitats and has a highly variable population depending on rainfall. It matures early in the winter and often disperses its seed before significant summer heat, and its persistence is therefore relatively stable where appropriate habitat exists. It would be expected to naturally re-seed itself from adjacent extant populations after initial disturbance to the habitat from construction.

Thurber's pilostyles is a perennial stem parasite that is often relatively abundant where it occurs. Although there is a great deal of information about its life history, little is known about the dynamics or threats to its persistence. It is not certain if populations are particularly long-lived, though dried flowers from previous years are often evident on the host plant. Since this population of host plants in the proposed project area is relatively small, the population of Thurber's pilostyles is probably relatively insignificant.

Potential construction-related direct and indirect impacts to special-status plant species would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

4.2.4 Wildlife Species

Overview of Direct and Indirect Impacts to Special-Status Wildlife Species

Direct Impacts

The proposed project would result in direct impacts to special-status wildlife species. Direct impacts include destruction of habitat for sensitive species and could result in injury, death, and/or harassment of sensitive species.

Indirect Impacts

The proposed project would potentially result in permanent and temporary indirect impacts to special-status wildlife species. Permanent, indirect impacts to special-status wildlife species resulting from the proposed project would include (1) habitat fragmentation, where removal of habitat elements results in isolated patches of formerly connected habitat; (2) edge effects, where project facilities would lead to increased noise, lighting, exotic plant and wildlife invasion, dust/air pollution, predators, parasites, pesticides, fuel modification, and other factors; and (3) alteration of hydrology, runoff, and sedimentation, which may cause differential senescence and death of plant species used by special-status wildlife species.

If left unmitigated, temporary, indirect impacts would result from dust accumulation on surrounding vegetation, increased ambient noise levels adjacent to construction areas, and the rare chance of wildfires (caused by construction or downed transmission lines). These could potentially lead to temporary, indirect impacts to special-status wildlife species that may use the adjacent plant communities by disrupting their natural foraging patterns, destroying foraging habitat (dust can adversely affect plants by reducing the rates of metabolic processes such as photosynthesis and respiration), and adversely affecting species communication. If construction activities are conducted at night, the use of unnatural lighting would temporarily indirectly impact special-status wildlife species adjacent to construction areas by increasing possible detection by predators, obscuring lunar cycles, and/or causing direct habitat avoidance in lighted areas.

The potential for project direct and indirect impacts specific to special-status wildlife species are discussed in the following text.

Federally Listed Wildlife Species

Currently there are no federally listed wildlife species detected within or adjacent to the BSA; however, the FTHL, which is proposed for federal listing, was detected within the BSA. The federally listed Yuma clapper rail and peninsular bighorn sheep are not expected to occur within or adjacent to the BSA. The mountain plover, which is proposed for federal listing, was not detected within BSA during the protocol surveys.

Flat-tailed Horned Lizard

Direct Impacts

Data collected during focused surveys conducted in summer 2009 indicate that the FTHL may be present and habitat capable of supporting this species occurs within the proposed project area. A FTHL individual and scat were detected within the buffer area for Route Alternative 2 approximately 0.9 mile south of I-8, and one unidentified horned lizard species was detected approximately 0.1 mile southwest of the Dixieland Substation. The species is found throughout the Yuha Desert Management Area and was detected during WBO surveys (Appendix C).

Habitat capable of supporting this species would be permanently impacted by implementation of this project through the installation of new power poles, the substation expansions at either end of the construction alignment, and the installation of a permanent maintenance road. Because USFWS recently proposed the FTHL for listing under the federal ESA, the loss of FTHL habitat is considered significant if left unmitigated.

Permanent direct impacts to FTHL-occupied habitat would occur because the alignment of the proposed project runs through the Yuha Desert Management Area. Permanent impacts include direct take of FTHL habitat through construction of the proposed project, loss of FTHL habitat through creation of the new ROW access road and transmission tower foundations, and the potential to kill FTHL while driving on those roads. Since a significant portion of the proposed project runs through FTHL Management Area (MA), this is a potentially significant impact and mitigation would be required.

Indirect Impacts

Indirect impacts to FTHL would occur from increased common raven (*Corvus corax*) presence associated with the construction of new elevated perching sites (e.g., new transmission line towers, perimeter fencing). Development and new elevated perching sites as a result of project

construction could increase the probability that young ravens remain in the area and could increase raven numbers, which, in turn, could result in increased predation on FTHL in the vicinity of the disturbance area.

Significance After Mitigation

Potential construction-related direct and indirect impacts to FTHL would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

Mountain Plover

Direct Impacts

No direct impacts to mountain plover are anticipated because of the negative results of the protocol survey. The risk of death or injury to mountain plover as a result of construction is unlikely for the following reasons:

- This species is not expected to nest within the BSA, there is no risk of destroying nests or eggs, harming chicks, or discouraging parents from returning to the nest.
- The species is naturally evasive and will readily move out of harm's way to avoid construction activities.

The mountain plover is a protected species under the MBTA. As such, it is unlawful to kill this species. Therefore the project applicant must avoid killing mountain plover and employ avoidance measures necessary to avoid killing or injuring any mountain plover.

Indirect Impacts

Habitat capable of supporting foraging and roosting mountain plover occurs adjacent to Route Alternative 2. Potential indirect impacts to mountain plover are likely to arise from construction-generated fugitive dust and noise. These potential indirect impacts would be considered significant if mountain plover were detected foraging in the adjacent habitat for Route Alternative 2. This potential indirect impact would require mitigation.

Significance After Mitigation

Potential indirect impacts would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures as described in Chapter 5. During construction activities, a loss of approximately 0.23 acres of abandoned agricultural which represents potential foraging habitat will occur; however, this habitat loss will be buffered by the over 207,000 acres of suitable foraging habitat within the Imperial Valley agricultural complex (50 percent of the 415,365 acres of field crops available in the Imperial Valley agricultural complex). The potential loss of 0.23 acre of potential foraging habitat is a discountable loss of mountain plover's forage resources in the Imperial Valley.

State-Listed Wildlife Species

Swainson's Hawk

Direct Impacts

Though Swainson's hawk was not detected during wildlife surveys in the project area, this species is known to use the Imperial Valley and surrounding desert habitat during migration. Potential direct impacts to this species could occur through the loss of potential foraging habitat. These potential direct impacts would be considered significant if it is confirmed that the Swainson's hawk forages on-site. Because Swainson's hawk is not known to breed in Imperial Valley, impacts to nesting habitat is not expected.

Indirect Impacts

Potential indirect impacts on Swainson's hawk are likely to arise from construction-generated fugitive dust and noise, which may disrupt migration away from the construction zone. Indirect impacts from these construction-related activities would be temporary, as these impacts would end with cessation of project construction.

Significance After Mitigation

If it is determined that the Swainson's hawk uses the site, potential construction-related direct and indirect impacts would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

Bald Eagle

Direct Impacts

No direct impacts to bald eagle are anticipated because of the lack of habitat and the low potential for occurrence in the construction area.

Indirect Impacts

Potential indirect impacts on bald eagle are likely to arise from construction-generated fugitive dust and noise, which may disrupt foraging. Indirect impacts from these construction-related activities would be temporary, as these impacts would end with cessation of project construction.

Significance After Mitigation

If it is determined that the bald eagle uses the site, potential construction-related indirect impacts would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

American Peregrine Falcon

Direct Impacts

American peregrine falcon was not detected during any wildlife surveys in the project area, but is known to winter in Imperial Valley. Potential direct impacts could occur through the loss of potential foraging and roosting habitat that occurs in the project area. These potential direct impacts would be considered significant if it is confirmed that the American peregrine falcon forages on-site.

Indirect Impacts

Potential indirect impacts on American peregrine falcon would likely to arise from construction-generated fugitive dust and noise, which may disrupt roosting and foraging. Indirect impacts from these construction-related activities would be temporary, as these impacts would end with cessation of project construction.

Significance After Mitigation

If it is determined that the American peregrine falcon uses the site, potential construction-related direct and indirect impacts would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

Gila Woodpecker

Direct Impacts

Gila woodpecker was observed on several occasions during wildlife surveys near Dixieland Substation and in an area just south of the substation. It appears that the birds may be using adjacent private property for breeding and could be using adjacent lands, including the project area, for foraging and juvenile dispersal. Direct impacts to Gila woodpecker would occur through the loss of potential foraging habitat. These direct impacts would be considered significant if left unmitigated.

Indirect Impacts

Indirect impacts of project construction on Gila woodpecker are discussed below, for indirect impacts common to special-status wildlife species. These indirect impacts would potentially impact off-site Gila woodpecker breeding habitat and adjacent foraging habitat. These indirect impacts would be considered significant if left unmitigated.

Significance After Mitigation.

The potential loss of a foraging and dispersal habitat (direct impact) is considered significant; however, this impact would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures as described in Chapter 5.

Other Special-Status Wildlife Species

Direct Impacts Common To All Other Special-Status Wildlife Species

Direct impacts to other nonlisted, special-status wildlife species would result from the construction of project facilities and development of the disturbance area. Project construction could result in the crushing of occupied burrows and destruction of nests, collisions with

construction and maintenance vehicles, and loss of habitat. Direct impacts specific to nonlisted special-status wildlife species are discussed below.

Indirect Impacts Common To All Other Special-Status Wildlife Species

Indirect impacts from potential deposition of sediment loads during heavy rain events and flooding downstream of the site could impact existing habitat for nonlisted special-status wildlife outside of the project site. However, these impacts would be minimized by project design. Similarly, indirect impacts to habitat by changes in drainage patterns potentially altering off-site vegetation communities would be minimized by project design.

Temporary, indirect impacts are likely to arise from construction-generated fugitive dust accumulation on surrounding vegetation resulting in destruction and/or avoidance of habitat by wildlife. Nighttime lighting during the construction phase would also disrupt species movement and/or cause increased predation rates. Indirect impacts from potential deposition of sediment loads during heavy rain events and flooding downstream of the site would impact existing habitat for nonlisted special-status wildlife outside of the survey area. However, these impacts would be minimized by project design (. Similarly, indirect impacts to habitat by changes in drainage patterns potentially altering off-site vegetation communities would be minimized by project design.

The potential for project-related direct and indirect impacts specific to nonlisted special-status wildlife species are discussed in the following text.

Golden Eagle

Direct Impacts

Golden eagle was not detected during any wildlife surveys in the project area but occurs rarely in Imperial Valley during winter. Potential direct impacts could occur through the loss of foraging and roosting habitat that occurs in the project area. These potential direct impacts would be considered significant if it is confirmed that the golden eagle uses the site for foraging.

AECOM communicated with the WRI to determine the potential for golden eagle (*Aquila chrysaetos canadensis*) nesting within a 10-mile radius around the Imperial Valley to Dixieland "ID" Double Circuit 230-kilovolt (kV) Transmission Line and Expansion of Dixieland Substation project (project site). After a review of WRI's existing data, they replied on

August 12 and 26, 2010 (WRI 2010 pers. comm.) and determined that there were no known golden eagles nesting within a 10-mile radius of the project site north of the California/Mexico international border. Based on WRI's data, the mountains to the west of the project site and within a 10-mile radius on the U.S. side of the border are not known to currently have nesting golden eagles.

WRI did not provide any information regarding potential golden eagles foraging within the project site. During wildlife surveys for WBO, FTHL, and other biological surveys, no golden eagles were observed flying over or foraging within the project site. These biological surveys occurred during the peak of the breeding season for golden eagles (March through June) when adults would be actively foraging to support young.

Indirect Impacts

Potential indirect impacts on golden eagle would likely to arise from construction-generated fugitive dust and noise, which may disrupt foraging. Indirect impacts from these construction-related activities would be temporary, as these impacts would end with cessation of project construction.

Significance After Mitigation

If the golden eagle is detected using the site, potential construction-related direct and indirect impacts would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

Northern Harrier

Direct Impacts

Suitable northern harrier foraging habitat present throughout the footprint would be directly impacted by construction of the disturbance area. This species was observed during WBO surveys in the Route Alternative 2 buffer area over Sonoran creosote bush scrub. The loss of foraging habitat would be significant if left unmitigated.

Indirect Impacts

Indirect impacts of project construction on northern harrier are discussed above, for indirect impacts common to special-status wildlife species. These indirect impacts would potentially impact off-site northern harrier breeding habitat and adjacent foraging habitat. These indirect impacts would be considered significant if left unmitigated.

Significance After Mitigation

Direct and indirect impact would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures as described in Chapter 5.

White-Tailed Kite

Direct Impacts

White-tailed kite was not detected during any wildlife surveys in the project area; however, potential direct impacts could occur through the loss of potential foraging and roosting habitat that occurs in the project area. These direct impacts would be considered significant if it is determined that the white-tailed kite uses the site.

Indirect Impacts

Potential indirect impacts on white-tailed kite are likely to arise from construction-generated fugitive dust and noise, which may disrupt roosting and foraging. Indirect impacts from these construction-related activities would be temporary, as these impacts would end with cessation of project construction.

Significance After Mitigation

If the white-tailed kite is detected on-site potential construction-related direct and indirect impacts would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

Lesser Sandhill Crane

Direct Impacts

No direct impacts to lesser sandhill crane are anticipated because of the lack of habitat and the low potential for occurrence in the construction area.

Indirect Impacts

Habitat capable of supporting foraging and roosting lesser sandhill crane occurs adjacent to Route Alternative 2. Potential indirect impacts to lesser sandhill crane are likely to arise from construction-generated fugitive dust and noise. These potential indirect impacts would be considered significant if it is determined that roosting sandhill crane occur in the adjacent habitat and left unmitigated.

Significance After Mitigation

If roosting sandhill crane are detected potential indirect impacts would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures as described in Chapter 5.

Western Burrowing Owl

Direct Impacts

Based on data collected during summer 2009 surveys, breeding WBO were located in areas associated with drainage canals and agriculture fields near IIDs Westside Main Canal. Those areas are closely associated (within 500 feet) with Route Alternative 2 where burrows were used by more than one WBO in five locations on the east side of the Westside Main Canal; single owls or recent owl sign was also detected in several nearby burrows. In addition, two burrow complexes located in desert scrub habitat near the northern end of Route Alternative 2 were also being used by single owls; these two owls may represent dispersing juveniles (Table 9). In addition, two unoccupied burrows were found near the northern substation where all three alternatives overlap, three unoccupied burrows occur along Route Alternative 2, and one unoccupied burrow was located along the overlapping segments of Route Alternative 1 and Route Alternative 2 approximately 2 miles northwest of the IV Substation. The loss of burrows and foraging habitat adjacent to occupied burrows would be a permanent direct impact if left

Table 9
WBO from the Preferred Route and Alternatives

	Number of WBO Family Groups within 500-Foot Buffer*	Number of WBO Resident Individuals within 500-Foot Buffer*	WBO Present Inside 140-Foot ROW*	WBO Present Inside 500-Foot Survey Buffer*
Preferred Alignment	0	0	None	0
Route Alternative 1	0	0	None	0
Route Alternative 2	3#	3	None	21
No Action Alternative	0	0	0	0

*Based on Phase III survey results
#Family groups represent 1 pair plus offspring (2-8 offspring).

unmitigated. Temporary direct impacts to WBO would also result from an increase in vehicle traffic while the project is under construction and, consequently, an increase in vehicular strikes of WBOs.

The loss of occupied WBO breeding or wintering habitat is considered a significant impact if left unmitigated. Specifically, based on the CBOC mitigation guidelines and definition of impacts, the following potential effects on WBO as a result of project implementation would be significant and require mitigation: (1) disturbance or harassment of WBOs within 160 feet of occupied burrows, (2) destruction of active burrows and burrow entrances, and (3) degradation of foraging habitat adjacent to occupied burrows.

Although there are numerous WBO outside the 500-foot survey buffer, there were no suitable burrows identified within the proposed project's 140-foot ROW that would be permanently directly impacted. Temporary direct impacts to potential unoccupied WBO burrows would occur through construction-generated fugitive dust, noise, lighting, etc., but these impacts would be considered less than significant through the implementation of mitigation measures outlined in the CBOC and CDFG guidelines (CBOC 1993; CDFG 1995). The remainder of the impacted area would be temporarily impacted during construction but would be vacated and restored to its original condition after project completion. With the proper implementation of mitigation measures, including those listed below, impacts are considered less than significant.

Indirect Impacts

Indirect impacts could result from increased common raven and raptor predation on WBO associated with the addition of new elevated perching sites, including the transmission structures, substation perimeter fencing, and transmission lines. Additionally, temporarily ponded water from construction (e.g., dust suppression during construction) and garbage from increased human presence might attract common ravens. These indirect impacts could potentially impact WBO breeding habitat or burrows and adjacent foraging habitat. These indirect impacts would be considered significant.

Significance After Mitigation

Potential construction-related direct and indirect impacts to WBO would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

Vermillion Flycatcher

Direct Impacts

Vermillion flycatcher was not detected during any wildlife surveys in the project area. Potential direct impacts would occur through the loss of foraging and roosting habitat that occurs in the project area. These potential direct impacts would be considered significant if it is determined that the vermillion flycatcher forages on-site, and would require mitigation.

Indirect Impacts

Potential indirect impacts of project construction on vermilion flycatcher are discussed above, for indirect impacts common to special-status wildlife species. These indirect impacts would potentially impact off-site vermilion flycatcher breeding habitat and adjacent foraging habitat. These potential indirect impacts would be considered significant if it is determined that the vermillion flycatcher is breeding or foraging in the adjacent habitat, and require mitigation.

Significance After Mitigation

If vermillion flycatcher were detected potential direct and indirect impact would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures as described in Chapter 5.

Loggerhead Shrike

Direct Impacts

Suitable loggerhead shrike habitat present throughout the footprint would be directly impacted by construction of the disturbance area. The species was found at low densities, predominately in the Sonoran creosote bush scrub, and in transitional areas composed of both Sonoran creosote bush scrub and desert dry wash woodland. One nest was located in the southwest section of the disturbance area.

The loss of occupied breeding habitat is considered to be a significant impact if left unmitigated, since this habitat is declining in availability in the region.

Indirect Impacts

Indirect impacts of project construction on loggerhead shrike are discussed above, for indirect impacts common to special-status wildlife. These indirect impacts would potentially impact off-site loggerhead shrike breeding habitat or burrows and adjacent foraging habitat. These indirect impacts would be considered significant if left unmitigated.

Significance After Mitigation

The potential loss of an active nest (direct impact) is considered significant; however, this impact would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures as described in Chapter 5.

American Badger

Direct Impacts

Potential direct impacts would occur to American badger habitat as a result of construction through the loss of available breeding, foraging, and dispersal habitat. Though badger was not detected during wildlife surveys, the Sonoran creosote bush scrub habitat on-site is capable of supporting this species and could function in this capacity. Potential direct impacts would be considered significant if the American badger were to be detected on-site. This potential impact would require mitigation to reduce the level of significance to less than significant.

Indirect Impacts

Potential indirect impacts of project construction on American badger are discussed above, for indirect impacts common to special-status wildlife species. These indirect impacts would potentially impact off-site American badger breeding habitat or burrows and adjacent foraging habitat. These potential indirect impacts would be considered significant if the American badger were detected on-site and the impacts were left unmitigated.

Significance After Mitigation

If the American badger were to be detected potential construction-related direct and indirect impacts to American badger would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

Desert Kit Fox

Direct Impacts

Desert kit fox was not detected during wildlife surveys, the Sonoran creosote bush scrub habitat on-site is capable of supporting this species and could function in this capacity. Potential direct impacts could occur to desert kit fox habitat as a result of construction through the loss of available breeding, foraging, and dispersal habitat. If the desert kit fox were to be detected on-site direct impacts would be considered significant if left unmitigated.

Indirect Impacts

Potential indirect impacts of project construction on desert kit fox are discussed above, for indirect impacts common to special-status wildlife species. These indirect impacts could potentially impact off-site desert kit fox breeding habitat or burrows and adjacent foraging habitat. If the desert kit fox were to be detected on-site these potential indirect impacts would be considered significant if left unmitigated.

Significance After Mitigation

If desert kit fox were detected potential construction-related direct and indirect impacts to desert kit fox would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

Pallid Bat

Direct Impacts

Pallid bat was not detected during wildlife surveys for the project, and suitable roosting habitat does not exist within the project footprint; however potential direct impacts could occur through the loss of potential foraging habitat. If the pallid bat were to be detected potential impacts would be significant if not mitigated.

Potential indirect impacts of project construction on pallid bat are discussed above, for indirect impacts common to special-status wildlife species. These indirect impacts could potentially impact foraging habitat. If the pallid bat were to be detected on-site these potential indirect impacts would be considered significant if left unmitigated.

Significance After Mitigation

If the pallid bat were to be detected potential construction–related direct and indirect impacts would be reduced to less than significant through habitat based mitigation for sensitive species. This would occur as part of the FTHL and WBO mitigation.

Yuma Myotis

Direct Impacts

Yuma Myotis was not detected during wildlife surveys for the proposed project, and suitable roosting habitat does not exist with the project footprint; however potential direct impacts could occur through the loss of potential foraging habitat. If the Yuma myotis bat were to be detected potential impacts would be significant if not mitigated.

Indirect Impacts

Potential indirect impacts of project construction on Yuma myotis bat are discussed above (see discussion under Other Special-Status Wildlife Species). These indirect impacts could potentially impact foraging habitat. If the pallid bat were to be detected on-site these potential indirect impacts would be considered significant if left unmitigated.

Significance After Mitigation

If the Yuma myotis bat were to be detected potential construction–related direct and indirect impacts would be reduced to less than significant through habitat based mitigation for sensitive species. This would occur as part of the FTHL and WBO mitigation.

Western Mastiff Bat

Direct Impacts

Western mastiff bat was not detected during wildlife surveys for the proposed project, and suitable roosting habitat does not exist within the project footprint; however potential direct impacts could occur through the loss of potential foraging habitat. If the western mastiff bat were to be detected potential impacts would be significant if not mitigated.

Indirect Impacts

Potential indirect impacts of project construction on western mastiff bat are discussed above (see discussion under Other Special-Status Wildlife Species). These indirect impacts could potentially impact foraging habitat. If the pallid bat were to be detected on-site these potential indirect impacts would be considered significant if left unmitigated.

Significance After Mitigation

If the western mastiff bat were to be detected potential construction–related direct and indirect impacts would be reduced to less than significant through habitat based mitigation for sensitive species. This would occur as part of the FTHL and WBO mitigation.

4.2.5 Wildlife Movement

Direct Impacts

The proposed project would result in direct impacts to wildlife movement and habitat connectivity.

Indirect Impacts

The proposed project could potentially result in permanent indirect impacts to wildlife movement and population connectivity. Potential indirect impacts of the proposed project and associated edge effects include altered behavior due to environmental stressors, changes in daily activity patterns, reductions in population reproductive capacity, and local population extinctions due to compromised population genetics over time or an inability to recolonize isolated patches of habitat. These impacts vary depending on the population structure, size of the home range, migrations, and dispersal movements of the species being considered, as well as the species' behavioral response to artificial light, noise, degraded surrounding habitat, and other anthropogenic influences.

Construction of the proposed project would have permanent indirect effects on wildlife movement. Wildlife movement would be altered due to edge effects associated with development. Individually, species respond behaviorally to the edge itself (the "ecotonal effect") or to the indirect habitat changes associated with edges (the "matrix effect") (Lidicker and Peterson 1999; Kristan et al. 2003). Behavioral avoidance of human-made structures and associated edges can decrease wildlife movement and deter connectivity. In addition, the proposed project may indirectly impact wildlife movement through species avoidance in response to human presence. All of these factors can contribute significantly to local species extinctions.

Conceptual models of edge effects (Ries and Sisk 2004; Ries et al. 2004) found different intraspecific reactions could be well predicted by how resources are concentrated between preferred and nonpreferred habitat, resulting in increases or decreases in abundance depending on the required resource allocation. While there is a wealth of studies documenting the effects of urban edges on wildlife species, there is a lack of studies identifying how edges impact wildlife movement of particular species when no anthropogenic subsidies are expected, as is the case for the proposed project. Edge effects similar to those that would be associated with the proposed project have not been studied for the species addressed above as they relate to wildlife movement.

Significance After Mitigation

Potential construction-related direct and indirect impacts to wildlife movement and dispersal would be reduced to less than significant for all species through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

4.3 OPERATION

Direct and indirect impacts on biological resources during the operation of the proposed project are discussed below.

4.3.1 Vegetation Communities

Direct Impacts

Operation of the proposed project would not result in temporary or permanent direct impacts to either nonsensitive or sensitive vegetation communities.

Vegetation will occur within the disturbance area following construction. Therefore, operation of the project may result in temporary or permanent direct impacts to either nonsensitive or sensitive vegetation communities.

Indirect Impacts

Operation of the proposed project may result in permanent indirect impacts to nonsensitive and sensitive vegetation communities surrounding the disturbance area. Permanent, indirect impacts to sensitive vegetation communities may include edge effects and increased exposure to exotic plants. Erosion and storm water contaminant runoff may degrade adjacent sensitive vegetation communities. Exotic plant species are opportunistic and often occupy disturbed soils such as those within the transmission line corridors and areas of exposed bare ground that may occur within the disturbance area. Wildfires caused by downed transmission lines are rare but may occur. Exotics often frequent areas adjacent to and within burn areas following a wildfire. Once introduced, these exotic plant species often out-compete natives for resources, resulting in a reduction in growth, future dispersal, and recruitment of native species, and the eventual degradation of the vegetation community. The impacts from exotic plant species would be considered significant where desert dry wash woodland and mesquite bosque vegetation occurs adjacent to the disturbance area.

Significance After Mitigation

Potential operation-related indirect impacts to sensitive vegetation communities would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5, including measures BIO-40 through BIO-45.

4.3.2 Jurisdictional Waters

Direct Impacts

A delineation will be conducted by an experienced delineator to determine impacts so that IID can apply for permits from the ACOE, Regional Water Quality Control Board (RWQCB), and CDFG. Areas with potential to be subject to ACOE jurisdiction would include those "non-isolated" areas dominated by hydrophytic vegetation and exhibiting visible aboveground hydrology indicators. Wetland hydrology would be determined based on the presence of visible aboveground indicators. Presence of hydric soils would be assumed for areas that support hydrophytic vegetation and wetland hydrology. ACOE unvegetated Waters of the U.S. would be assumed for all areas of a defined water feature that lack wetland indicators yet exhibit ordinary high water marks. Areas with potential to be subject to CDFG jurisdiction would include areas with wetland vegetation and/or evidence of stream flow. CDFG can also take jurisdiction over riparian/lacustrine vegetation and vernal swales.

Significance After Mitigation

Design features to ensure the integrity of poles will ensure that the poles are placed in locations that are not subject to erosion. Additionally the implementation of general minimization measures would ensure that all facilities work occurs within designated work areas and protect off-site resources.

4.3.3 Flora

Direct Impacts

Operation of the proposed project would not result in temporary or permanent direct impacts to nonlisted, special-status plant species, as they will not occur within the disturbance area following construction.

Indirect Impacts

Operation of the proposed project may result in permanent indirect impacts to nonlisted, special-status plant species. Erosion and storm water contaminant runoff may degrade adjacent habitat for nonlisted, special-status plant species. Exotic plant species are opportunistic and often occupy disturbed soils such as those within the transmission line corridors and areas of exposed bare ground that may occur within the disturbance area. Exotic plant species often out-compete

natives for resources, resulting in a reduction in growth, future dispersal, and recruitment of native species. These impacts would be considered significant if left unmitigated where nonlisted, special-status plant species occur adjacent to the disturbance area.

Significance After Mitigation

Indirect impacts would be reduced to less than significant through implementation of the avoidance, minimization, and mitigation measures described in Chapter 5.

4.3.4 Wildlife Species

Direct Impacts

Direct impacts to wildlife species would occur from mortality of individuals by crushing or vehicle collisions during operation and maintenance activities of the proposed project.

Indirect Impacts

Operation of the proposed project may result in permanent, indirect impacts to special-status wildlife species, which includes edge effects where proposed project facilities would lead to increased lighting and exotic plant and wildlife invasion. Operation of proposed project facilities would not lead to increased noise greater than 60 A-weighted decibels (dBA) outside the disturbance area. Nighttime lighting could disrupt species movement and/or cause increased predation rates. Wildfires caused by downed transmission lines are rare but may occur and damage adjacent habitat.

Significance After Mitigation

Potential operation-related direct and indirect impacts to special-status wildlife species occurring or assumed to occur within the buffer (i.e., WBO, loggerhead shrike, American badger, and desert kit fox) would be reduced to less than significant through implementation of all avoidance, minimization, and mitigation measures described in Chapter 5.

4.3.5 Wildlife Movement

Direct Impacts

Operation of the proposed project would not result in any additional direct impacts to wildlife movement already described in Section 4.2.6.

Indirect Impacts

Operation of the proposed project would not result in any additional indirect impacts to wildlife movement as described in Section 4.2.6.

Significance After Mitigation

Operation would not result in any additional significant impacts to wildlife movement; thus, no avoidance, minimization, or mitigation measures are necessary.

4.4 CUMULATIVE IMPACTS

This section addresses the potential additive impacts of implementing the proposed project in combination with other past, present, and reasonably foreseeable projects in proximity to the BSA. The BSA involves the development of land that is currently owned by BLM and functions as open space. Impacts to biological resources have the potential to occur primarily in native habitat.

The geographic scope for considering cumulative biological impacts cannot by defined by jurisdictional or other political boundaries, as sensitive habitats and species can have widespread ranges and can vary for individual species. For this reason, the biological cumulative impact analysis includes the Yuha Basin Management Area.

The proposed project would be implemented in an area that contains habitat for WBO and FTHL, along with a range of other sensitive and common species, including migratory species protected under the MBTA. Other projects in the region, such as transmission line projects, power plants, and other infrastructure projects, affect these species to varying degrees, depending on their location and magnitude. The proposed project would permanently remove a relatively small amount of habitat for these species in an area that is considered to be of high habitat value for both WBO and FTHL. However, mitigation measures have been proposed that would compensate for the loss of habitat and limit potential direct and indirect impacts. With respect to

FTHL, impacts to FTHL within the Yuha Management Area would fall well within the 1% impact allowance set forth in the FTHLRMS to limit cumulative impacts within the management area. The cumulative projects in Table 10 combined would reduce the available acreage within the 1% cap by 368.15 acres to leave 233.85 acres remaining. The proposed project would further reduce the available 1% cap within the MA by 41.32 acres to leave 192.53 acres remaining. For these reasons, implementation of the proposed project would have incremental impacts on biological resources in this area, but those impacts would not be cumulatively considerable with the implementation of the mitigation identified for project impacts.

Table 10
Approved Or Proposed Projects in the Imperial Valley

Project Name (Project Proponent)	Impacts to Private Lands (Acres)	Impacts to BLM Lands (Acres)	Impacts to YUHA MA (Acres)*
Sunrise Powerlink (SDGE)			46.4
S Line Upgrade 230-kV Transmission Line (IID)	105.85	2.15	2.15
Imperial Valley Solar (Stirling Energy Systems Two, LLC)	360	6,140	92.8
Imperial Solar Energy Center West (CSOLAR Development, LLC)	1,071.5	13.7	13.7
Imperial Solar Energy Center South (CSOLAR Development, LLC	900	82.7	10.1
SDG&E Photovoltaic Solar Field (SDGE)		115	115
North Gila to Imperial Valley #2 (Southwest Transmission Partners)		1,903	3
Centinela Solar Power, LLC	2,054	39	25
88FT 8ME, LLC	2,000	10	10
82LV 8ME, LLC	1,237	10	10
Southwest Transmission Line			40
Total	**7,728.35**	**8,315.55**	**368.15**

*Approximation of acreages based on proposed projects**.**

CHAPTER 5
AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

5.1 GENERAL AVOIDANCE AND MINIMIZATION MEASURES DURING CONSTRUCTION

The following is a list of general impact avoidance and minimization measures that would apply to project construction activities. These measures are standard practices designed to prevent environmental degradation, and the project applicant will be responsible for implementation of these measures to avoid and minimize impacts to the greatest extent feasible.

BIO-1 The project proponent will designate a BLM and CDFG-approved Designated Biologist(s). The construction contractor(s)/crew(s) will be informed about the biological constraints of the project. All construction personnel who work in the BSA will attend a contractor education program, developed and presented by the Designated Biologist prior to the commencement of construction activity. The construction crews and contractor(s) will be responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts.

BIO-2 The Designated Biologist will be responsible for overseeing monitoring and compliance with protective measures for the biological resources. A Section 10(a)(1)(A) permit will be necessary for handling federally listed species. The Designated Biologist will maintain communications with the appropriate personnel (project manager, resident engineer) to ensure that issues relating to biological resources are appropriately and lawfully managed. The Designated Biologist will also be present to verify compliance with all conservation measures. The Designated Biologist will submit reports that document compliance with these measures to BLM, USFWS, and CDFG upon request or, at a minimum, included in the end-of-the-year report. In addition, the Designated Biologist will perform the following duties:

a. The Designated Biologist will conduct preconstruction surveys for nests, proposed and listed and special status species within 30 days prior to commencement of construction activities in the disturbance area.

b. The Designated Biologist will be on-site during all vegetation clearing and grubbing and during project construction in upland and riparian habitat to be impacted.

c. If the agencies deem necessary, a Jurisdictional Delineation Report (JDR) will be prepared. At that time, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared to comply with RWQCB requirements.

d. The Designated Biologist shall ensure proper implementation of protective measures developed in coordination with BLM and USFWS to avoid all impacts to all encountered sensitive species and nesting birds will be verified and appropriate avoidance measures shall be implemented via buffering.

e. The resident engineer will be immediately notified to halt work, if necessary, and coordinate with BLM, USFWS, and CDFG to ensure the proper implementation of species and habitat protection measures. The Designated Biologist will report any breech of the conservation measures to the BLM, USFWS, and CDFG within 24 hours of its occurrence.

BIO-3 The anticipated impact zones, including staging areas, equipment access, and disposal or temporary placement of spoils, will be delineated with stakes and flagging prior to construction to avoid natural resources where possible. No construction-related activities will occur outside of the designated impact area (i.e., disturbance area).

BIO-4 The project proponent will ensure that all construction materials, staging, storage, dispensing, fueling, and maintenance activities are located in upland areas outside of sensitive habitat, and that adequate measures are taken to prevent any potential runoff from entering “waters of the U.S.” Staging areas will be located within clearly marked permanent impact areas or previously disturbed sites within the project footprint.

BIO-5 New and existing roads that are planned for either construction or widening will not extend beyond the disturbance area. All vehicles passing or turning around will do so within the disturbance area. Where new access is required outside of existing roads or the construction zone, the route will be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.

BIO-6 Spoils will be stockpiled in disturbed areas presently lacking native vegetation.

BIO-7 Spoils, trash, or any debris will be removed off-site to an approved disposal facility. A trash abatement program will be established. Trash and food items will be contained in closed containers and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral animals that may prey on sensitive species.

BIO-8 Workers will be prohibited from bringing pets and firearms to the site.

BIO-9 If construction activities occur at night, all project lighting (e.g., staging areas, equipment storage sites, roadway) will be directed onto the roadway or construction site and away from sensitive habitat. Light glare shields will also be used to reduce the extent of illumination into adjoining areas.

BIO-10 Best Management Practices (BMPs) will be employed to prevent loss of habitat due to erosion caused by project-related impacts (i.e., grading or clearing for new roads). The project inspector will periodically monitor the work area to ensure that construction-related activities do not generate erosion or excessive amounts of fugitive dust. All detected erosion will be remedied within 24 hours of discovery. The SWPPP shall address aquatic resource protection.

BIO-11 Fueling of equipment will take place within existing paved roads and not within 300 feet or adjacent to drainages or native desert habitats. Contractor equipment will be checked for leaks prior to operation and repaired as necessary.

BIO-12 Wildfires will be prevented to the extent possible by exercising care when driving and by not parking vehicles where catalytic converters could ignite dry vegetation. In times of high fire hazard (e.g., high wind or drought conditions), trucks may need to carry water and shovels or fire extinguishers in the field, or high-fire-risk installations (e.g., electric lines) may need to be delayed. The use of shields, protective mats, or other fire prevention equipment will be used during grinding and welding to prevent or minimize the potential for fire. No smoking or disposal of cigarette butts will take place within vegetated areas.

BIO-13 The introduction of exotic plant species throughout the site will be avoided and controlled to the maximum extent practical through prevention. Preventing exotic plants from entering the site via vehicular sources will include measures such as implementing Trackclean or other method of vehicle cleaning for vehicles coming

and going from the site. Earth-moving equipment will be cleaned prior to transport to the project site. No clinging vegetation or soils will be allow on vehicles entering the site. Weed-free rice straw or other certified weed-free straw will be used for erosion control. Weed populations introduced into the site during construction will be eliminated by chemical and/or mechanical means approved by BLM, CDFG, USFWS, and Cal-IPC.

BIO-14 In addition to the avoidance and minimization measures outlined in this chapter, the project proponent will implement any measures required by the BLM, USFWS, and CDFG as a condition of project certification.

BIO-15 Design features of the transmission line facilities using the ALPIC guidelines to avoid avian electrocution. Install ant electrocution devices on top of existing transmission line facilities to prevent harm to raptors and other protected bird species.

5.2 RESOURCE-SPECIFIC AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES DURING CONSTRUCTION

5.2.1 Vegetation Communities

No mitigation is required to compensate for nonsensitive vegetation that would be directly impacted by the project as no significant impact occurs.

BIO-16 IID will develop a project-specific habitat restoration plan to encourage native species, control noxious weeds, and provide for erosion control.

5.2.2 Sensitive Vegetation Communities

Desert dry wash woodland would be permanently and temporarily impacted by project-related activities. Impacts are considered significant and mitigation is required.

BIO-17 The Designated Biologist(s) will be present during equipment and materials staging and construction to mark acceptable areas for construction-related activities. The Designated Biologist will mark with flagging any areas containing significant riparian vegetation (if present) that will be treated as exclusion areas during construction. The Designated Biologist will be present during all construction activities to ensure that exclusion areas are maintained.

5.2.3 Waters of the State

If the appropriate agencies determine that jurisdictional areas exist within the BSA, a list of specific mitigation measures will be prepared.

BIO-18 Where unavoidable impacts occur to jurisdictional areas, mitigation will be determined by the appropriate agencies at the time of permitting.

5.2.4 Special-Status Plants

BIO-19 Preconstruction surveys will be conducted to confirm the presence or absence of special-status plants within areas that would be affected during construction. If special-status plant populations are found in the vicinity of the project, a mitigation plan will be prepared and implemented that includes provisions for marking the populations as avoidance areas during construction, modifying pole and access road footprints if possible, conducting awareness training for construction personnel, and identifying actions to be taken to compensate for the loss of plant populations in the event they cannot be avoided.

5.2.5 Special-Status Wildlife

BIO-20 Mitigation requirements for the project's permanent impacts to habitats occupied, or presumed occupied, by special-status wildlife species will be mitigated at a ratio or other appropriate mitigation to be determined by the wildlife agencies (BLM, USFWS, and CDFG). Mitigation for permanent impacts to these species is generally provided by acquiring and conserving in-kind habitat of equal value to the habitat impacted. Mitigation lands in the vicinity of the disturbance area will be prioritized to provide protection for displaced wildlife and to maintain land connectivity in the area. This may be accomplished with the payment of fees to the BLM for the acquisition of FTHL lands within the region.

Additional discussions of the mitigation required for FTHL, MOPL, WBO, American badger, and desert kit fox are presented below.

Flat-Tail Horned Lizard

According to the FTHLRMS, a multiplier is used to determine impacts and mitigation required to offset those impacts by the proposed project within an FTHL Management Area (ICC 2003). The multiplier (M) would be determined using the following formula:

$$M = 3 + A + G + E + D$$

The FTHLRMS describes in detail this formula and how it applies in different situations. For the proposed project, the following was determined per IID's definitions of adjacent habitat impacts, growth-inducing effects, and duration of effect:

A Adjacent Habitat Impacts
  b. Adjacent habitat will receive direct or indirect deleterious impacts.....0.5

G Growth Inducing Effects within Flat-Tailed Horned Lizard Habitat
  b. The project will have growth inducing effects 0.5

E Existing Disturbance On-Site
  b. There is little or no existing habitat disturbance.....1

D Duration of Effect
  b. The effects of the project are expected to be long term (>10 years).....1

Therefore: M = 3 + 0.5 + 0.5 + 1 + 1, which equals 6. The transmission line poles may attract birds, particularly providing perch sites for raptors and shrikes, which prey on FTHL. The long span of transmission lines results in fewer number of poles, thus providing few and farther spaced poles for perching. Additionally, round-tailed ground squirrels may move into FTHL habitat because of dirt access roads, thereby increasing predation on FTHLs. While the construction of the power lines, transmission towers, and dirt access roads may temporarily provide off-road enthusiasts access to other areas of the habitat, the long-term presence of the transmission poles and sporadic use of the maintenance road will have a lasting impact on the FTHL and its habitat. Construction of the transmission line is required to provide electrical transmission capability for all development, whether it is housing, commercial, manufacturing, or renewable energy development. Thus, the proposed project supports growth. With the high number of Renewable Energy projects proposed for the area, this line will be highly sought after for connection of future projects. Therefore, it will have growth-inducing effects.

Currently, there is very little disturbance because the proposed project bisects FTHL habitat and does not follow existing dirt access roads. The proposed project is expected to be in place for more than 10 years. However, the utility corridor which BLM designated through the Yuha is anticipated to be utilized heavily in the future for additional transmission lines.

Therefore, temporary and permanent impacts to habitat within the 140-foot ROW that occurs within the FTHL MA would be compensated at a ratio of 6:1. Compensation for habitat lost outside an FTHL MA would be charged at a 1:1 ratio (ICC 2003).

Similar to WBO, potentially significant indirect impacts to FTHL would occur from implementation of the proposed project. Mitigation measures, outlined below, would be implemented to reduce the magnitude of these impacts.

Mitigation Measure: Compensate for the loss and/or degradation of FTHL habitat

Table 11 describes the compensation required for impacts associated with the proposed project and alternatives. As indicated in the table, 266.03 acres of compensatory mitigation must be provided for loss and/or degradation of FTHL habitat for the Preferred Alignment. Habitat within the 140-foot ROW and 1,000-foot survey buffer is depicted in Figure 3. Based on IID's discussions with BLM staff on FTHL compensatory land replacement for other projects, there may no longer be sufficient private land holdings available for purchase within the MAs. Thus, IID may be required to pay the compensation fee based on the desert land value in the immediate vicinity of the project in lieu of replacement land. This money would be used by BLM to enhance habitat within the MAs as determined by the FTHL Management Oversight Group.

Table 11
Compensatory Mitigation Calculations for FTHL Habitat Loss/Degradation

	FTHL Habitat Disturbed Inside MA		FTHL Habitat Disturbed Outside MA		Total Mitigation Requirement (acres)
	Acres	Times Multiplier (6:1)	Acres	Times Multiplier (1:1)	
Preferred Alignment	41.32	247.92	18.11	18.11	266.03
Route Alternative 1	41.13	246.78	17.02	17.02	263.8
Route Alternative 2	29.36	176.16	8.38	8.38	184.54
No Action Alternative	0	0	0	0	0

The mitigation measures listed below, coupled with the appropriate habitat-based compensation, would sufficiently mitigate for impacts to FTHL.

BIO-21 Project activities will occur outside the FTHL MA to the extent possible and occur at times of the year to minimize mortality, such as during the active summer months when FTHL can be moved out of harm's way by on-site biological monitors. The Designated Biologist will act as the field contact representative and will ensure compliance with the FTHLRMS and protective measures for the FTHL. The Designated Biologist will have authority and responsibility to halt activities that are in violation of these terms and conditions.

BIO-22 The 140 ROW will be clearly flagged at the outer boundaries to define work limits, and all disturbance shall be limited to that area. Construction and restoration workers will restrict their activities and vehicles to flagged areas to reduce impacts to FTHL and its habitat.

BIO-22 Within FTHL MA, the area of disturbance of vegetation and soils shall be limited to the minimum required for the project 140 ROW. Vegetation removal and grading shall be minimized to the greatest extent possible. To the extent possible, previously disturbed areas will be used (existing roads shall be used for travel and equipment storage) and surface soils shall be stockpiled at appropriate locations and replaced immediately following construction to facilitate habitat restoration and to deter weed invasions.

BIO-24 At the discretion of the cooperating agencies, newly created access routes will be restricted by constructing barricades, erecting fences with locked gates, and/or posting signs.

BIO-25 A qualified Designated Biologist shall require biological monitors to be present in each area of active surface disturbance throughout the day and to develop and implement a worker education program to ensure that project-related activities comply with these measures. The Designated Biologist has the authority to halt activities that are in violation of these terms. He/she will periodically examine areas of active surface disturbance for FTHL presence and take the necessary steps to ensure open trenches, holes, and excavation areas are inspected for FTHL prior to backfilling.

BIO-26 Sites within the MA where activities could cause FTHL mortality may be enclosed with FTHL barrier fencing during construction according to standards outlined in the FTHLRMS. This shall be at the discretion of the USFWS and the BLM and will be executed and monitored by the project's Designated Biologist.

BIO-27 The IID will develop a project-specific habitat restoration plan to encourage native species, control noxious weeds, and provide for erosion control.

Mountain Plover

BIO-28 The activities associated with the implementation of the project shall occur outside the MOPL habitat to the extent possible and occur at times of the year to minimize mortality, such as during the summer months when MOPL are not present within the area.

BIO-29 The area of disturbance of vegetation and soils shall be limited to the minimum required for the project within the designated 140-foot ROW. Vegetation removal and grading shall be minimized to the greatest extent possible.

BIO-30 Design features of the transmission line facilities shall use Avian Power Line Interaction Committee (APLIC) guidelines to avoid avian electrocution. Anti-electrocution devices shall be installed on top of existing transmission line facilities to prevent harm to raptors and other protected bird species (APLIC 2006).

Western Burrowing Owl

Avoidance, minimization, and mitigation of impacts to WBO will consist of the following:

BIO-31 Preconstruction surveys will be conducted no more than 30 days prior to any ground-disturbing activities. Suitable habitat for WBO within the entire transmission line route and within 150 meters of the ROW line will be walked and surveyed for WBO. Active burrows will be flagged. Additionally, a preconstruction survey will be conducted no more than 3 days before ground-disturbing activities are scheduled to commence. Any additional active burrows found during this survey will be staked. If it is not feasible to avoid direct impact to an active burrow, construction in the area of active burrows will be delayed until owls using these burrows can be passively relocated during the nonnesting

season (September 1 to January 31). The results of the preconstruction survey will be provided to CDFG.

BIO-32 If, during preconstruction surveys, WBO activity is detected at a burrow during the breeding season (February 1 through August 31), a Designated Biologist approved by CDFG will verify through noninvasive methods the breeding status of the birds. If the birds have not begun egg-laying and incubation or juveniles from the occupied burrow are foraging independently and are capable of independent survival, then WBO can be excluded from the burrows as described below. However, if it is determined that the burrow is occupied (e.g., eggs or juveniles still dependent on their parents are present) then, per CBOC guidelines, a 250-foot buffer will be flagged surrounding the occupied burrow and all project-related activity will remain outside of the flagged area until a Designated Biologist determines the burrow is no longer occupied (e.g., juveniles are foraging independently and are capable of independent survival).

BIO-33 It is recommended that preconstruction surveys begin during the nonbreeding season (September 1 through January 31) regardless of the construction start date to identify WBO that may breed on-site during the breeding season. If preconstruction surveys indicate the possibility of direct impacts to active burrows, construction practices and/or pole placement will be modified such that no direct impact occurs, or owls occupying these burrows will be passively relocated in the nonbreeding season before construction begins. All burrows within 100 feet of pole placements will be barricaded with hay bales to a distance of 10 feet on either side of the burrow and stacked to a height two-bales-high as a noise/disturbance mitigation barrier. If passive relocation is to be used, it will be conducted during the nonbreeding season (September 1 through January 31) and owls will be encouraged to passively relocate to suitable, unoccupied habitat at least 160 feet outside of the exclusion area. WBO will be excluded by installing one-way doors in burrow entrances. One-way doors will be left in place for 1 week to ensure owls have left the burrow before excavation. One alternate natural or artificial burrow will be provided for each burrow to be excavated in the disturbance area. The excluded burrows will be monitored daily for 1 week to confirm owl use of alternate burrows before excavating burrows. After burrows are confirmed to no longer be in use (1 week), the burrow will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bag will be inserted into the tunnels during excavation to maintain an

escape route for any WBOs inside the burrow. Preconstruction surveys will be conducted no more than 30 days prior to construction.

BIO-34 All burrows that are located within 200 feet of a pole placement or are barricaded as a mitigation measure will be monitored weekly for activity or signs of owls vacating burrows. Owl numbers and locations of burrows known to have been vacated during construction, as well as any owls that are passively relocated as mitigation for project impacts, will be reported to CDFG. Status reports, including all burrowing owl survey reports, owl mitigation actions, and monitoring results, will be submitted to CDFG.

BIO-35 A Designated Biologist will be on-site during all construction activities in potential WBO habitat.

BIO-36 The CBOC's mitigation guidelines used by CDFG recommend that mitigation for impacts to WBOs should be based on the number of pairs directly impacted. Mitigation ratios are based on whether suitable acquired habitat is occupied by the species or is contiguous to the impact area. Destruction of occupied and/or active burrows will be supplemented at a 2:1 replacement ratio of enhanced natural, unoccupied burrows or artificial burrows, as per guidelines from the CBOC (1993) and CDFG Memorandum (1995). The CBOC and CDFG mitigation guidelines recommend a ratio of 6.5 if mitigation is located onsite to 9.75 to 19.5 acres if mitigation is located offsite per pair of WBOs (or single individual) impacted, depending on the replacement habitat type and/or project-specific negotiations with CDFG. CBOC's mitigation guidelines recommend that off-site mitigation should use one of the following ratios:

a. Replacement of occupied habitat with occupied habitat: 9.75 acres per pair or single bird

b. Replacement of occupied habitat with unoccupied habitat contiguous to currently occupied habitat: 13 acres per pair or single bird

c. Replacement of occupied habitat with suitable unoccupied habitat: 19.5 acres per pair or single bird

Other Special-Status Wildlife Species

BIO-37 Anti-electrocution devices will be installed on top of the ID Line facilities to prevent harm to raptors and other protected bird species.

BIO-38 In accordance with the MBTA and California Fish and Game Code Sections 3503, 3503.5, and 3513, if vegetation removal is scheduled to take place during the breeding season (roughly February through June for most species in the desert), a Designated Biologist will be retained 30 days prior to vegetation clearance to conduct preconstruction nest surveys. The last survey will be conducted no more than 3 days prior to initiation of vegetation clearance. If a nest with eggs or young is found or suspected, every effort will be made to avoid the area around the nest until the young have fledged, the nest has failed, or CDFG and USFWS agree that construction can proceed with the incorporation of resource agency agreed-to monitoring measures.

BIO-39 Desert kit fox dens (and any active American badger dens) present in the disturbance area will have a one-way trap door installed to passively exclude the kit foxes from the den. After 1 week post-installation, the den will be excavated and collapsed, following the same protocol as with WBO burrows. Alternatively, a Designated Biologist will trap and remove foxes (and/or badgers) from occupied dens and move them off-site into appropriate habitat.

Habitat-based mitigation or other appropriate mitigation as discussed previously for WBO, FTHL, and other special-status species will provide mitigation for impacts to nonlisted special-status species that inhabit overlapping suitable habitat.

5.2.6 Wildlife Movement

The following are recommendations regarding possible compensatory mitigation of impacts to wildlife corridors to reduce the extent of impact for the region and contribute to the general knowledge of wildlife movement.

Measures that may reduce the extent of impact in the region include the following:

BIO-40 Land within the vicinity of the disturbance area that maintains connectivity to adjacent open spaces and provides corridors between open spaces for wildlife species impacted will be prioritized and acquired.

BIO-41 Degraded habitat within the vicinity of the disturbance area that may have formerly served as a wildlife corridor for impacted species and will provide ecological value for overall connectivity will be restored. Areas for implementation of these measures will be prioritized based on proximity to the

proposed project and impacted populations. Areas for implementation of these measures will also consider quality of habitat and likelihood of use by species impacted.

BIO-42 Measures may be taken to contribute to the general knowledge of wildlife movement, edge effects, and the role of dispersal in metapopulation dynamics. Measures may include, but are not limited to, contributing financing for research on species-specific movement through telemetry studies and population gene flow as it relates to species dispersal in the region and specific studies on edge effects. Measures to contribute to the general knowledge of wildlife movement will require approval by state and federal wildlife agencies.

5.3 GENERAL AVOIDANCE AND MINIMIZATION MEASURES DURING OPERATION

General impact avoidance and minimization measures that will apply to project operation are presented below.

BIO-43 BMPs will be employed to prevent raven occurrence on-site. BMPs will include, but are not limited to, the following:

a. potential use of perch-deterrent devices and locations of their installation

b. measures that might reduce raven presence and nesting activities (e.g., removing food items and garbage, and allowing no standing water on-site, monitoring for nest building and removal of unoccupied raven nests)

BIO-44 A SWPPP will be prepared to comply with RWQCB requirements. The project will employ a comprehensive system of management controls, including site-specific BMPs, to minimize erosion and storm water contact with contaminants and thereby reduce exposure of wildlife and plants to pollutants in the storm water. These management controls include erosion and sediment control BMPs; an employee training program; good housekeeping and preventive maintenance programs; structural BMPs, including temporary containment during maintenance activities and permanent secondary containment structures at chemical storage and process areas; materials, equipment, and vehicle management practices; spill prevention and response programs; and inspection programs.

BIO-45 The project's lighting system will provide the minimum illumination required to meet safety and security objectives and will be oriented to minimize additional illumination in areas not pertinent to the facility. If lighting is adjacent to sensitive habitat it will be directed or shielded away from the habitat. No permanent lights are proposed to be installed within sensitive habitat. Light glare shields may also be used to reduce the extent of illumination into adjoining areas.

BIO-46 During project operation, the disturbance area will be maintained free from nonnative invasive species. This can be accomplished through physical or chemical removal and prevention. Application of an approved herbicide (not toxic to wildlife) will be applied or directly supervised by a state licensed applicator following the label instructions, including application rates and protective equipment. Herbicide will be applied only when wind speeds are less than 5 miles per hour.

CHAPTER 6
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ATTACHMENT A

LIST OF FIELD BIOLOGISTS AND QUALIFICATIONS

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

El Centro Field Office

Certificate of Completion

is hereby granted to

Andrew Fisher

to certify that he has completed to satisfaction

FLAT-TAILED HORNED LIZARD SURVEY TRAINING

Granted: April 23rd, 2008

Jesse Irwin,
Wildlife Biologist

State of California - The Resources Agency ARNOLD SCHWARZENEGGER, Governor Andrew F

DEPARTMENT OF FISH AND GAME
78078 Country Club Dr., Ste. 109
Bermuda Dunes, CA 92203
(760) 200-9158
http://www.dfg.ca.gov

RECEIVED
AUG 18 2008

August 6, 2008

To whom it may concern,

Title 14 of the California Code of Regulations authorizes the Department of Fish and Game (the Department) to regulate the take and possession of wildlife in the State of California.

This letter provides proof of authorization by the Department for the individual named below to take, possess, and transport Flat-tailed Horned Lizards (*Phrynosoma mcallii*), while performing the duties of biological monitor, as part of mitigation requirements for construction or other activities which place individual lizards at risk. This person is also authorized to take and possess lizards briefly for data collection, during surveys conducted for public agencies. He/she has completed Department-approved training in tracking and finding Flat-tailed Horned Lizards.

This authorization does not permit activities, such as the trapping or marking of lizards, which otherwise require the possession of a current Scientific Collecting Permit issued by the Department.

This authorization is in effect permanently, unless revoked, at the Department's discretion.

Sincerely,

C J Weightman

Craig J. Weightman
Senior Environmental Scientist (Acting)
Inland Deserts Region

Authorized Individual

Andrew Fisher
1420 Kettner Blvd., Ste 500
San Diego, CA 92101

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

El Centro Field Office

Certificate of Completion

is hereby granted to

Jimmy McMorran

to certify that she has completed to satisfaction

FLAT-TAILED HORNED LIZARD SURVEY TRAINING

Granted: May 6th, 2009

Jesse Irwin,
Wildlife Biologist

California Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Inland Deserts Region
78078 Country Club Dr., Ste. 109
Bermuda Dunes, CA 92203
www.dfg.ca.gov

***ARNOLD SCHWARZENEGGER**, Governor*
***DONALD KOCH**, Director*

June 5, 2009

mike A

Subject: Authorization for Michael Anguiano

To whom it may concern,

Title 14 of the California Code of Regulations authorizes the Department of Fish and Game (the Department) to regulate the take and possession of wildlife in the State of California.

This letter provides proof of authorization by the Department for the individual named below to take, possess, and transport **Flat-tailed Horned Lizards** (*Phrynosoma mcallii*) out of harm's way, while performing the duties of biological monitor, as part of mitigation requirements for construction or other activities which place individual lizards at risk. This person is also authorized to possess lizards briefly for data collection, during surveys conducted for public agencies. He/she has completed Department-approved training in tracking and finding Flat-tailed Horned Lizards.

This authorization does not permit activities, such trapping, marking, or sacrifice of lizards, which otherwise would require the possession of a current Scientific Collecting Permit issued by the Department.

This authorization is in effect permanently, unless revoked, at the Department's discretion.

Sincerely,

CJ Weightman

Craig J. Weightman
Senior Environmental Scientist
Inland Deserts Region

RECEIVED
JUN 09 2009

Authorized Individual:

Michael Anguiano
1420 Kettner Boulevard, Suite 500
San Diego, CA 92101

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

El Centro Field Office

Certificate of Completion

is hereby granted to

Michael Anguiano

to certify that she has completed to satisfaction

FLAT-TAILED HORNED LIZARD SURVEY TRAINING

Granted: May 6th, 2009

Jesse Irwin,
Wildlife Biologist

ATTACHMENT B

FLORAL SPECIES OBSERVED WITHIN THE BIOLOGICAL RESOURCES SURVEY AREA

Appendix B – Plant Species Observed within the Project Area

Scientific Name	Common Name
Gnetales	
Ephedraceae - Ephedra Family	
Ephedra trifurca	long leafed ephedra
Monocots	
Lilliaceae - Lily Family	
Hesperocallis undulata	desert lily
Poaceae - Grass Family	
Arundo donax	giant reed
Pleuraphis rigida	big galleta grass
*Saccharum ravennae**	ravennagrass
*Schismus arabicus**	Mediterranean grass
Typhaceae - Cattail Family	
Typha sp.	cattail
Dicots	
Aizoaceae - Fig-Marigold Family	
*Mesembryanthemum crystallinum**	crystalline iceplant
Amaranthaceae - Amaranth Family	
Tidestromia oblongifolia	Arizona honeysweet
Asteraceae - Sunflower Family	
Ambrosia dumosa	burroweed
Baccharis sergiloides	desert baccharis
Bebbia juncea var. aspera	sweetbush
Chaenactis stevioides	desert pincushion
Encelia farinosa	brittlebush, incienso
Encelia frutescens	button brittlebush
Geraea canescens	desert-sunflower
Hymenoclea salsola	cheesebush
Isocoma acradenia var. *eremophila*	alkali goldenbush
Malacothrix glabrata	desert dandelion
Monoptilon bellioides	Mojave desertstar
Palafoxia arida var. *arida*	Spanish needle
Pectis papposa	chinchweed
Pluchea sericea	arrow weed
Psathyrotes ramosissima	turtleback
Rafinesquia neomexicana	desert chicory
Stephanomeria pauciflora var. *pauciflora*	wire lettuce
Boraginaceae - Borage Family	
Cryptantha angustifolia	narrow leaved cryptantha

Scientific Name	Common Name
Cryptantha costata	ribbed cryptantha
Cryptantha maritima	Guadalupe cryptantha
Heliotropium curassavicum	salt heliotrope
Pectocarya heterocarpa	combseed
Tiquilia palmeri	Palmer's crinklemat
Brassicaceae - Mustard Family	
*Brassica tournefortii**	Saharan mustard, Sahara mustard
Lepidium lasiocarpum	pepperweed
*Sisymbrium irio**	London rocket
Cactaceae - Cactus Family	
Opuntia echinocarpa	silver cholla, golden cholla
Caryophyllaceae - Pink Family	
Achyronychia cooperi	onyx flower
Chenopodiaceae - Goosefoot Family	
Atriplex canescens	fourwing saltbush
Atriplex lentiformis	big saltbush
*Chenopodium album**	lambs quarters
*Salsola tragus**	Russian thistle, tumbleweed
Suaeda moquinii	bush seepweed
Euphorbiaceae - Spurge Family	
Chamaesyce polycarpa	smallseed sandmat
Ditaxis lanceolata	Narrowleaf ditaxis, narrowleaf silverbush
Fabaceae - Legume Family	
*Melilotus albus**	white sweetclover
Olneya tesota	ironwood
Prosopis glandulosa	honey mesquite
Prosopis pubescens	tornillo
Psorothamnus emoryi	indigo bush
Psorothamnus spinosus	smoke tree
Fouquieriaceae - Ocotillo Family	
Fouquieria splendens ssp. *splendens*	ocotillo
Geraniaceae - Geranium Family	
*Erodium cicutarium**	redstem stork's bill
Malvaceae - Mallow Family	
Eremalche rotundifolia	desert five-spot
Sphaeralcea ambigua	desert globemallow , apricot mallow
Myrtaceae - Myrtle Family	
Eucalyptus sp.*	gum
Nyctaginaceae - Four O'Clock Family	
Abronia villosa var. *villosa*	sand verbena

Scientific Name	Common Name
Onagraceae - Evening Primerose Family	
Camissonia brevipes ssp. *brevipes*	golden suncup
Camissonia claviformis	browneyes
Oenothera deltoides ssp. *deltoides*	devil's lantern
Orobanchaceae - Broom-rape Family	
Orobanche cooperi	desert broomrape
Plantaginaceae - Plantain Family	
Plantago ovata	desert Indianwheat, woolly plantain
Polemoniaceae - Phlox Family	
Langloisia setosissima ssp. *setosissima*	bristly langloisia
Polygonaceae - Buckwheat Family	
Chorizanthe brevicornu var. *brevicornu*	brittle spineflower
Chorizanthe corrugata	wrinkled spineflower
Eriogonum deserticola	Colorado Desert buckwheat
Eriogonum sp.	buckwheat
Portulacaceae - Purslane Family	
Calandrinia ambigua	desert calandrinia
Rafflesiaceae - Rafflesia Family	
Pilostyles thurberi	Thurber's pilostyles
Resedaceae - Mignonette Family	
Oligomeris linifolia	lineleaf whitepuff
Solanaceae - Nightshade Family	
Datura sp.	Jimson weed
Lycium andersonii	water jacket, Anderson's desert thorn
Tamaricaceae - Tamarisk Family	
*Tamarix aphylla**	Tamarisk
*Tamarix ramosissima**	Tamarisk
Viscaceae - Mistletoe Family	
Phoradendron californicum	desert mistletoe
Zygophyllaceae - Caltrop Family	
Larrea tridentata	creosote bush
Tribulus terrestris	puncture vine

ATTACHMENT C

WILDLIFE SPECIES DETECTED WITHIN THE BIOLOGICAL RESOURCES SURVEY AREA

Appendix C

ID 230-kV Transmission Line and Substation Expansion Project Wildlife Species List

	Scientific Name	Common Name
INVERTEBRATES		
Order Hymenoptera		**Insects**
	Family Formicidae	
	Pogonomyrmex barbatus	harvester ant
Order Scorpiones		**Scorpions**
	Family Arachnida	
	Scorpion sp.	scorpion
REPTILES and AMPHIBIANS		
Order Anura		**Frogs and Toads**
	Rana catesbeiana	bullfrog
Order Squamata		**Lizards and Snakes**
	Family Gekkonidae	
	Coleonyx variegatus variegates	desert banded gecko
	Family Phrynosomatidae	
	Uta stansburiana	side-blotched lizard
	Callisaurus draconoides	zebra-tailed lizard
	Family Teiidae	
	Cnemidophorus tigris	western whiptail
	Family Phrysonomatidae	
	Phrynosoma mcallii [1]	flat-tailed horned lizard
	Family Viperidae	
	Crotalus cerastes	sidewinder
BIRDS		
Order Galliformes		**Magapodes, Curassows, Pheasants, and Relatives**
	Family Odontophoridae	
	Callipepla gambelii	Gambel's quail
Order Ciconiiformes		**Herons, Storks, Ibises, and Relatives**
	Family Ardeidae	
	Butorides striatus	green heron
	Bubulcus ibis	cattle egret
	Ardea Herodias	great blue heron
Order Falconiformes		**Vultures, Hawks, and Falcons**
	Family Cathartidae	
	Cathartes aura	turkey vulture
	Family Accipitridae	
	Circus cyaneus[1]	northern harrier
	Buteo lineatus	red-shouldered hawk
	Buteo jamaicensis	red-tailed hawk
	Family Falconidae	
	Falco sparverius	American kestrel

	Scientific Name	Common Name
	Falco mexicanus	prairie falcon (overhead)
Order Charadriiformes		**Shorebirds, Gulls, and Relatives**
	Family Charadriidae	
	Charadrius vociferous	killdeer
	Numenius phaeopus	whimbrel (overhead)
	Limnodromus scolopaceus	long-billed dowitcher (overhead)
Order Columbiformes		**Pigeons and Doves**
	Family Columbidae	
	Columba livia	rock pigeon
	Zenaida macroura	mourning dove
	Streptopelia decaocto	Eurasian collared-dove
	Zenaida asiatica	white-winged dove
	Columbina passerina	common ground-dove
Order Cuculiformes		**Cuckoos and Relatives**
	Family Cuculidae	
	Geococcyx californianus	greater roadrunner
Order Strigiformes		**Owls**
	Family Strigidae	
	Bubo virginianus	great horned owl
	Athene cunicularia[1]	burrowing owl
Order Caprimulgiformes		**Goatsuckers and Relatives**
	Family Caprimulgidae	
	Chordeiles acutipennis	lesser nighthawk
Order Piciformes		**Woodpeckers**
	Family Picidae	
	*Melanerpes uropygialis**	Gila woodpecker
Order Passeriformes		**Song birds**
	Family Tyrannidae	
	Sayornis saya	Say's phoebe
	Sayornis nigricans	black phoebe
	Tyrannus verticalis	western kingbird
	Family Laniidae	
	Lanus ludovicianus [1]	loggerhead shrike
	Family Corvidae	
	Corvus corax	common raven
	Family Alaudidae	
	Eremophila alpestris	horned lark
	Family Hirundinidae	
	Tachycineta bicolor	tree swallow (overhead)
	Petrochelidon pyrrhonota	cliff swallow (overhead)
	Family Remizidae	
	Auriparus flaviceps	verdin
	Family Polioptilidae	
	Polioptila melanura	black-tailed gnatcatcher
	Family Mimidae	
	Mimus polyglottos	northern mockingbird
	Family Parulidae	

	Scientific Name	Common Name
	Geothlypis trichas	common yellowthroat
	Family Thraupidae	
	Piranga ludoviciana	western tanager
	Family Emberizidae	
	Pipilo aberti	Abert's towhee
	Amphispiza billineata	black-throated sparrow
	Melospiza melodia	song sparrow
	Family Cardinalidae	
	Pheucticus melanocephalus	black-headed grosbeak
	Guiraca caerulea	blue grosbeak
	Family Icteridae	
	Sturnella neglecta	western meadowlark
	Agelaius phoeniceus	red-winged blackbird
	Quiscalus mexicanus	great-tailed grackle
	Molothrus ater	brown-headed cowbird
	Icterus cucullatus	hooded oriole
	Family Fringillidae	
	Carpodacus mexicanus	house finch
MAMMALS		
Order Lagomorpha		**Rabbits, Hares, and Pikas**
	Family Leporidae	
	Lepus californica	black-tailed jackrabbit
	Sylvilagus audubonii	Audobon's cottontail
Order Rodentia		**Rodents**
	Family Heteromyidae	
	Dipodomys deserti	desert kangaroo rat (burrows)
	Spermophilus tereticaudus	round-tailed ground squirrel
Order Carnivora		**Carnivores**
	Family Canidae	
	Vulpes macrotis	desert kit fox (scat)
	Canis latrans	coyote (tracks)
	Family Mustelidae	
	Mephitis mephitis	striped skunk

* Federally or State Threatened or Endangered Species
[1] State Species of Special Concern
(CDFG 2009)

ATTACHMENT D

FLAT-TAILED HORNED LIZARD TECHNICAL REPORT

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 29, 2009

Mr. Robert Powell
Imperial Irrigation District
333 East Barioni Boulevard
Imperial, CA 92251

Subject: Imperial Valley to Dixieland ID 230-kV Transmission Line and Substation Expansion Project Flat-Tailed Horned Lizard Surveys, Imperial County, California

Dear Mr. Powell:

EDAW, Inc. (EDAW) is pleased to submit this flat-tailed horned lizard (*Phrynosoma mcallii*, FTHL) survey report for biological services in support of the ID 230-kV Transmission Line and Substation Expansion project, Imperial County, California (Figures 1 and 2a, b). For this report "the project, or the project site" will refer to "the proposed ID 230-kV Transmission Line and Substation Expansion project." Areas with suitable FTHL habitat and where surveys were conducted for FTHL on the project site are referred to "the survey area" in this report. EDAW biologists conducted a habitat assessment of the proposed transmission line and substation construction sites on June 9, 2009, to determine habitat suitability for the FTHL. Based on this assessment, it was determined that FTHL be assumed present within the Yuha Desert Management area, an area associated with the Flat-tailed Horned Lizard Rangewide Management Strategy (2003), and one of five management areas for FTHL. Outside of this management area, habitat identified as suitable for FTHL was surveyed within a 1,000-foot buffer paralleling both sides of the proposed transmission line and around the Dixieland Substation (Figures 2a, b and 3a, b). This report summarizes results for the four protocol surveys conducted between June 24 and August 12, 2009, to determine the presence or absence of the FTHL, a California Department of Fish and Game (CDFG) species of special concern and a Bureau of Land Management (BLM) sensitive species (CDFG 2009).

Project Location

The entire project site will be located in Imperial County in the State of California. The ID line will start at the San Diego Gas & Electric (SDG&E)/Imperial Irrigation District (IID) Imperial Valley (IV) Substation located southwest of the City of El Centro, California. The line will exit at the north side of the IV Substation and run northwest and north on BLM land. Depending on the final route, the line will be constructed on a combination of BLM land, existing IID right-of-way, and private property that will have to be acquired as a right-of-way. The transmission line will extend for approximately 7.3 miles in a northwest and north direction before entering the Dixieland Substation north of I-8 (I-8) (Figures 1, 2a and 2b). The existing IV Substation and the starting point for the proposed ID Line and new substation are approximately 10.5 miles southwest of El Centro, California. The Dixieland Substation is located approximately 13 miles west of El Centro (refer to Figures 1, 2a and 2b).

Project Description

IID is proposing to construct a 230-kV transmission line (referred to as the ID line) between the IV Substation and Dixieland Substation in Imperial County (Figure 1). The entire project site will span approximately 7.3 miles. Three routes are proposed (one proposed route and two alternatives) and depicted in Figures 2a and 2b.

An approximately 40-acre site immediately north of the existing IV Substation will be included in this assessment for contingency planning and possible future substation expansion. In addition, approximately 0.4 acre (60 feet by 300 feet) immediately adjacent to the Dixieland Substation has been identified for potential expansion of this substation.

Depending on the route chosen, the 230-kV ID line will require construction of approximately 48 new H-frame structures, four three-pole structures, and three single monopole steel structures. These structures will be an average height of 90 feet above ground and will be designed to support a single 230-kV three-phase electrical circuit, one optical ground wire, and one 3/8-inch static or overhead ground wire.

Proposed Project

This route would exit the IV Substation on the north side and run in a north direction for about 0.5 mile. The line would make a 90 degree westward turn and run for approximately 0.25 mile before turning in a northwest direction. The line would stay on this northwest axis for approximately 2.5 miles before turning in a north-northwest direction and running for another approximately 1.5 miles before turning north. The line would run north for approximately 2 miles while crossing I-8 and State Highway 80 (Evan Hewes Highway) before connecting with the Dixieland Substation.

This alternative would use two-pole-type H-frame structures, allowing longer spans (800 to 900 feet) between structures than that necessary for single-pole structures. This would allow for a less-permanent foundation area and less direct permanent impacts than Alternative 2 (see below). Shorter height H-frame structures also result in less visual impact.

H-pole-type structures use direct-embedded-type foundations, which require less ground disturbance than the single-type pole structures necessary for Alternative 2 (see below).

Because this alternative route would require fewer turns in the routing, fewer dead-end and angle structures would be required, resulting in lower costs and lower overall pole foundation areas (permanent direct impacts) compared to the other alternative routes.

Alternative 1

This route would follow the same route as the proposed route until a point approximately 0.75 mile after exiting the IV Substation, at which point this route would turn in a slightly more northward (running northwest) direction than the proposed route for about 2 miles until turning west and intersecting with

the proposed route after running toward the west for 1 mile. At this point, this route generally coincides with the proposed route for the rest of the way.

This alternative route would require more direction changes than the proposed project, resulting in an increased number of dead-end and angle-appropriate structures. These dead-end and angle structures are more costly than other structures, and require larger foundations (larger permanent impact) and larger work areas to install (larger ground disturbance and direct impact).

Alternative 2

This route would follow the same path as Alternative 1, until a point approximately 2.75 miles from the exit of the IV Substation. At this point, the route would continue in a generally northwest direction to intersect with the current IID Westside Main Canal right-of-way near the Foxglove Canal headgate. From this point, the line would generally follow within the Westside Main Canal right-of-way north and northwest until a point approximately 0.75 mile north of I-8. At this point, the line would turn 90 degrees toward the west. The line would run west for less than 0.5 mile before making a 90 degree turn toward the north and entering the Dixieland Substation approximately 0.5 mile to the north.

This route alternative has more direction changes than the other two alternative routes, requiring more higher cost, dead-end and angle-type structures.

Because the available right-of-way width within a large portion of this route is limited, this alternative would require single-pole (monopole) structures, which require shorter spans (300 to 650 feet) between pole structures. The shorter line spans, combined with the frequent direction changes necessitated by this route, would require considerably more poles with larger foundations and a much higher cost then the other two routes.

Project Survey Area

The project routes extend through low desert that ranges between approximately 30 feet below mean sea level to about 30 feet above mean sea level in the Sonoran Desert of California. The public lands portion of the proposed routes is primarily desert flats and gradually sloping bajadas. The predominant vegetation type is creosote (*Larrea tridentata*) scrub interspersed with a few microphyll woodlands, and supports a mosaic of open desert scrub, sand/desert pavement, and numerous seasonal washes.

Vegetation communities in addition to the disturbed and developed habitat throughout the site include the following:

Sonoran Creosote Bush Scrub

Sonoran creosote bush scrub is designated by Holland as Code 33100 and Sawyer and Keeler-Wolf as the Ocotillo Series 182. This community is characterized within the survey area by sandy well-drained soils, and, in limited areas, an underlying shallow caliche layer. The single dominant plant for this community is creosote bush (*Larrea tridentata*) . Other associates that are mostly confined to this community are burro-weed (*Ambrosia dumosa*), Mormon tea (*Ephedra trifurca*), dot-seed plantain

(*Plantago ovata*), and dune evening-primrose (*Oenothera* deltoides). This community is mostly restricted to the southern part of the survey area. This plant community is intergraded into the wetland-associated plant communities, with honey mesquite (*Prosopis glandulosa* var. *torreyana*), four-wing saltbush (*Atriplex canescens*), and tamarisk (*Tamarix* spp.) frequently mixed in.

Arrow Weed Scrub (includes "Canal Associated Wetland")

Arrow weed scrub is designated by Holland as Code 63820. It approximates Sawyer and Keeler-Wolf's Arrow weed scrub 99. This vegetation community is less a natural wetland habitat and more a function of a high water table and seepage in low and disturbed areas near irrigation canals. The dominant and indicator plants of this community within the survey area are arrow weed (*Pluchea sericea*), honey mesquite, tamarisk, cattail (*Typha* sp.), and common reed (*Phragmites australis*). Screw bean mesquite (*Prosopis pubescens*) occurs along the southern portion of Westside Main Canal near a private ranch and may have been introduced as barrier planting.

Desert Dry Wash Woodland

Desert dry wash woodland is designated by Holland as Code 62200. It also approximates the Sawyer and Keeler-Wolf's Catclaw Acacia Series 129. This vegetation community consists of riparian scrub that is commonly restricted to natural desert washes, but, in the survey area, is more a function of a high water table and seepage from irrigation canals. The dominant and indicator plants of this community are arrow weed (*Pluchea sericea*) and honey mesquite, though tamarisk has invaded this habitat from numerous plantings in agricultural areas. Smoke tree (*Psorothamnus spinosus)* occurs in a natural braided wash that blends into pluchea scrub where it merges with the irrigation canal, south of I-8 and west of the proposed project and Alternative 1.

Stabilized and Partially Stabilized Desert Dunes

Stabilized and partially stabilized desert dunes are designated by Holland as 22200 and by Sawyer and Keeler-Wolf as the Mesquite Series 274. This community occupies some areas near the northern part of the survey area, west of the Dixieland Substation, where honey mesquite forms circular clones within a matrix of Sonoran Creosote bush scrub. This also resembles Holland's Mesquite Bosque 61820; however, honey mesquite does not form a near continuous canopy.

Mesquite Bosque

Mesquite Bosque occurs in areas where honey mesquite form larger woodlands that are not directly associated with artificial irrigation systems or stabilized dune formations. It is designated by Holland as 61820 and by Sawyer and Keeler-Wolf as the Mesquite Series 274. One area was mapped within the survey area that occurs west of the Westside Main Canal where honey mesquite is the dominant tree and there is relatively little tamarisk.

Agriculture

The majority of the lands mapped as agriculture within the survey area are for hay production, mainly alfalfa. Also included is sorghum, Bermuda grass, and corn. The agricultural areas occur on both sides of the Foxglove Canal and Westside Main Canal and occupy a substantial amount of the survey area. Large fields were recently cleared at the time of vegetation mapping or had been temporarily fallow but did not support any substantial emergence native vegetation.

Tamarisk Woodland

Tamarisk woodland is not described in Holland and there is no Sawyer and Keeler-Wolf equivalent. Rows of shelter belt trees have been planted on the edges of agricultural fields that occur mostly in the northern portion of the survey area. It differs from Tamarisk scrub as it is described below because these are intentional plantings rather than occurring as an invasive plant that has become naturalized within some other native plant community.

Tamarisk has been planted in most of the length of these narrow gallery woodlands, although some sections have been planted to Eucalyptus (*Eucalyptus* spp.) and some other exotic plant species. Areas where Tamarisk has become more extensively widespread and is mixed with other native wetland species, such as honey mesquite, are mapped as Tamarisk scrub.

Tamarisk Scrub

Tamarisk scrub is designated by Holland as 63810 and by Sawyer and Keeler-Wolf as the Tamarisk Series 203. This habitat occurs north of I-8 and west of Foxglove Canal in the survey area. This area may have been formerly dominated by honey mesquite. Other common associates include quail brush (*Atriplex lentiformis)* and Arrow weed*.*

Open Water

Open water is mapped within the survey area only within the systems of canals and drains that carry irrigation water. This consists of the Westside Main Canal, Foxglove Canal, Forgetmenot Canal, and the Dixie Drains.

Desert Saltbush Scrub

Desert saltbush scrub is designated by Holland as 36110 and by Sawyer and Keeler-Wolf as the Mixed Saltbush Series 173. This community occupies low areas with denser soils, possibly affected by caliche, and occurs on the dry edges of Arrow weed scrub. Desert saltbrush scrub is co-dominated by two saltbush species (*Atriplex lentiformis* and *A. canescens*) as well as *Isocoma acradenia* var. *eremophila*. It also occurs as an early successional phase in some old fallow agricultural fields.

The public lands portion of the proposed routes is administered and managed by BLM, and current land use is devoted to natural resource conservation with mixed recreational use, including hunting, camping, four-wheel drive vehicle operation, and wildlife viewing. This area is within the Yuha Desert

Management Area as designated in the 2003 Flat-tailed Horned Lizard Rangewide Management Strategy (FTHLICC 2003). Private lands are owned by various property owners who use their properties for agricultural cropland. IID also maintains a right-of-way in this area associated with canals and other water-conveyance-related structures.

Flat-Tailed Horned Lizard Background Information

The FTHL is an average-sized horned lizard (body length without tail averages 3.2 inches) with a wide oval-shaped body, a long, broad flattened tail, and relatively long spines on the head (AESFO 2005). FTHLs have eight horns on the back of their head, with the central two being long, slender, and sharp (California Herps 2009). FTHLs are the only species of horned lizard with a dark vertebral strip down their back. Usually there are dark spots running down along side of the dark vertebral strip (California Herps 2009). FTHLs have two rows of fringed scales along the side of their bodies and lack external ear openings. They have a wide range of body colors, from pale grey to a light rust brown on the top (AESFO 2005).

Regulatory Status

The FTHL is a CDFG species of special concern, and a BLM sensitive species (CDFG 2009). Five management areas for FTHLs exist in the desert southwest and are associated with the Flat-tailed Horned Lizard Rangewide Management Plan (FTHLICC 2003).

The FTHL is also covered under the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP; CVCC 2007), a plan adopted by IID. A query of the California Natural Diversity Database (CNDDB) was conducted prior to the focused surveys. Historical locations of FTHL based on the CNDDB are depicted in Figures 2a, b.

Habitat Status

FTHLs occupy habitat within the Lower Colorado River Valley Subdivision of Sonoran Desert Scrub that includes creosote and white bursage scrub. In many areas, FTHL habitat is composed of fine silica sands that have been deposited by the Colorado River (AESFO 2005). Habitats with sandy desert hardpan and gravely flats with scattered vegetation are also suitable for FTHLs (California Herps 2009). FTHL are generally found in habitat with fine, wind-blown sand and a high density of harvester ants. However, the FTHL has been observed in areas with little or no windblown sand, such as the badlands in the Yuha Basin and Borrego Valley, and on saltbush flats at the northeastern end of the Salton Sea (Turner *et al.* 1980; Wone and Beauchamp 1995). Vegetation within FTHL habitat may include creosote bush (*Larrea tridentata*), indigo bush (*Dalea emoryi*), white bur-sage (*Ambrosia dumosa*), and big galleta grass (*Pleuraphis rigida*; Stebbins 2003). The species has also been detected in mixed desert scrub on gravelly soils in Anza-Borrego Desert State Park (Turner and Brown 1982). FTHLs occur at elevations ranging from 0 to 1,606 feet above mean sea level (0 to 520 meters; AESFO 2005); however, findings discussed in this report will bring elevations to below sea level.

FTHL eat a variety of insects and arthropods, but harvester ants are the most common food source. FTHLs mate in April to May, and lay one to two clutches of three to 10 eggs from May to June (California Herps 2009). FTHL home range size (ranges based on nine lizards) is from 0.04 to 0.52 acre (0.02 to 0.21 hectare; Turner and Medica 1982). Another study found the home ranges of FTHL to be much larger: 4.4 acres (1.8 hectares) for males and 4.9 acres (2.0 hectares) for females (Lemm 2006).

FTHLs are diurnal and adapted to very hot, arid environments. They can bury themselves in sand to escape predation and regulate body temperature, or may enter rodent burrows to escape the heat of the day. FTHLs can be very active in hot weather, maintaining high body temperatures (100.4°F) by facing into the sun (Lemm 2006). FTHL adults may hibernate during winter months and emerge in April, while juveniles are active year round (California Herps 2009). FTHL's main defense is camouflage and they may lie motionless or flattened against the substrate to avoid detection, but may also run quickly and bury into the sand to avoid predation. Round-tailed ground squirrels (*Spermophilus tereticaudus*) are the most common predator of FTHLs in some locations (Muth and Fisher 1992). Additional predators include loggerhead shrikes, ravens, roadrunners, falcons, coyotes, and kit foxes (Marlow 2000).

Population Status

The historical range of the FTHL included many areas in Arizona (Yuma Desert), California (Coachella Valley, parts of Borrego Valley), and areas in the Imperial Valley that have now been converted to agriculture. Currently, the FTHL occurs in the southwest corner of Arizona (Yuma desert), southeastern California (eastern San Diego County, central Riverside County, and Imperial County), and adjoining portions of Sonora and Baja California, Mexico (AESFO 2005). The species is threatened by habitat loss and degradation due to habitat conversion to urban and agriculture use. FTHL are also threatened by direct mortality due to off-highway vehicle use.

Survey Methodology

Based on a habitat assessment conducted by EDAW, more than 3 miles of the proposed ID Line occurs outside of and directly adjacent to the FTHL management area; approximately 1.5 miles of that linear distance is suitable FTHL habitat. EDAW biologists Mike Anguiano, Andrew Fisher, and James McMorran conducted focused surveys for FTHL throughout these areas of suitable FTHL habitat. The EDAW biologists mentioned above have been trained and authorized by the El Centro office of BLM to conduct surveys for FTHL. Surveys were conducted following the current FTHL survey protocol, as published within Appendix 6 of the Flat-tailed Horned Lizard Interagency Coordinating Committee's 2003 revision of the Flat-tailed Horned Lizard Rangewide Management Strategy (FTHLICC 2003).

The four protocol surveys were conducted between June 24 and August 12, 2009, when air temperatures were between 75 and 100°F (25 and 37°C). Given the temperature restrictions and the area to be surveyed, 2 consecutive days of surveying by two biologists were required to complete each survey. Survey 1 was conducted on June 24 and 25, 2009; Survey 2 was conducted on July 7 and 8, 2009; Survey 3 was conducted on August 4 and 5, 2009; and Survey 4 was conducted on August 11 and 12, 2009. Any FTHL, desert horned lizard, and horned lizard scat found during walking or road

surveys were mapped and recorded with a Global Positioning System (GPS: Garmin GPSmap 60CSx in NAD 83). Incidental detections of horned lizard scat were also recorded within the survey area. Date and time observed and sex were recorded for any horned lizard found. A digital color photograph with the horned lizard filling at least half of the frame was taken. A sample of horned lizard scat was collected when found during the survey (or incidental to non-FTHL survey efforts). A qualitative assessment of the habitat was conducted, including listing dominant perennial and annual plants, substrate types, and level of disturbance (roads, off-highway vehicle tracks, vegetation removal, etc.), and the habitat was documented with digital color photographs.

Survey dates, beginning and ending times, and surface temperatures of each survey were recorded. Any blocks of time not actually spent conducting the surveys were subtracted from the total survey time. Data collected during walking surveys were recorded on a standard FTHL survey form similar to that provided in the current revision of the survey protocol. Survey results include field datasheets (Appendix A), a list of all wildlife species detected during FTHL surveys (Appendix B), survey area photographs (Appendix C), and FTHL and horned lizard scat documentation (Appendix D).

Four survey transects were placed at even distances within suitable FTHL habitat paralleling both sides of the proposed ID Line and Dixieland substation out to 1,000 feet, as depicted in Figures 3a, b. The extreme northeast portion of transects near the Dixieland Substation is on California State Prison Land (Centinela State Prison), and surveyors had to acquire permission on each survey to access this area. Project sites require a minimum of four 1-hour presence/absence surveys for projects of 62 acres or less (FTHLICC 2003). The FTHL survey area on this project is approximately 329.06 acres, and EDAW conducted 23 hours and 55 minutes of walking surveys among these transects. This survey method for linear projects was approved by BLM in previous survey protocol. Additionally, EDAW conducted driving surveys along the existing access routes between sequential sites to check for any FTHL along the dirt access roads. The driving surveys do not count toward the survey time required for surveys.

Results

Permitted EDAW biologists Mike Anguiano (MAN), Andrew Fisher (AFI), and James McMorran (JMC) conducted FTHL surveys along the proposed ID Line where habitat assessments determined that suitable FTHL habitat was present. One FTHL was detected near the southern limit of the survey area during the final survey. Additionally, an unidentified horned lizard species was detected on the first survey near the northern limit of the survey area, west of Dixieland Substation. No horned lizard scat or tracks were detected until the final transect on the final survey. All horned lizard species sign and detections are depicted in Figures 3a, b. A list of dates, survey times, weather conditions, and horned lizard species detected is located in Table 1.

Table 1
Summary Survey Information for "Dixieland"
ID 230-kV Transmission Line and Substation Expansion

Date	Time	Total Time	Obs.	Weather	Horned Lizard Sign & Species Detected
06-24-2009	0620–1100	4 hrs & 15 min	AFI, JMC	75–92°F; 100–0% cloud cover; 0–2 mph	One unidentified horned lizard species detected
06-25-2009	0620–0835	2 hrs	AFI, JMC	75–88°F; 15–30% cloud cover; 1–6 mph	None
07-07-2009	0610–1045	4 hrs & 10 min	AFI, JMC	77–94°F; 0% cloud cover; 0–5 mph	None
07-08-2009	0610–0752	1 hr & 27 min	AFI, JMC	81–85°F; 3% cloud cover; 1–5 mph	None
08-04-2009	0555–1115	4 hrs & 30 min	MAN, JMC	79–96°F; 0–75% cloud cover; 0–4 mph	None
08-05-2009	0558–0802	1 hr & 47 min	MAN, JMC	83–92°F; 0% cloud cover; 0–7 mph	None
08-11-2009	0600–1005	3 hrs & 40 min	MAN, JMC	76–97°F; 0% cloud cover; Calm	None
08-12-2009	0721–0935	2 hrs & 6 min	MAN, JMC	83–99°F; 0% cloud cover; 0–2 mph	One FTHL detected; scat detected
Summary Results		**23 hrs & 55 min**			**One FTHL and scat detected; and one unidentified horned lizard species detected**

Note: A list of all wildlife species detected is located in Appendix B.

EDAW biologists conducted 23 hours and 55 minutes of protocol FTHL surveys for the ID Line project. Soil conditions at the proposed construction footprint and buffer zone were a mixture of small rocky hard-packed soils with crusty and cracked expanses consisting of a clay-based substrate. In addition, there were isolated areas of small dune habitat (hummocks) that visually appeared to be more suitable for FTHL scattered throughout the survey area; however, in these areas, the substrate was still hard-packed with minimal amounts of any drift sand or small rodent burrows. Special attention and care was taken in these areas to detect any sign. Special attention was also taken whenever the biologists encountered the horned lizard's preferred prey, black/red harvester ants (*Pogonomyrmex barbatus*). With the minimal amount of any drift sand, tracking was near impossible, and locating scat would likely be the only means of discerning presence/absence of FTHL unless the lizard itself was visually detected (as was the case in one instance; discussed below). It was noted that, north of Highway 80 (Evan Hewes Highway) near the Dixieland Substation, the habitat tended to shift to the type more suitable for FTHL, as areas of drift sand and hummocks were more abundant. With this, sidewinders (*Crotalus cerastes)* were detected on three of the four surveys, as was a visual detection of a horned lizard. James McMorran observed a horned lizard during Survey 1 as it headed into the base of a creosote bush. The observation was so brief, identification could not be made.

The survey area south of I-8 lies adjacent to and north of the Yuha Desert Management Area. The western half of this survey area has a very hard and sandy substrate with small-to-medium-sized rocks heavily dispersed throughout the area with crusty and cracked clay substrate intermixed. Transects in

the eastern portion of this survey area covered relatively higher quality FTHL habitat. Although not a very big area, sandy washes and areas of drift sand and hummocks are present, and tracks of many species could be seen. This area also had the same crusty and cracked clay substrate intermixed. During Survey 4 (the final survey) on the last transect (the eastern-most transect), horned lizard scat was detected. Subsequently, a live horned lizard was observed and identified as an FTHL. Adequate measures were taken to fully document this sighting according to survey protocol. Images of this FTHL and surrounding habitat can be found in Appendix D. Walking northwest toward the field vehicle and bisecting other completed transects, three more horned lizard scat were documented, all within approximately 20 feet of each other and in between transects. This incidental scat detection was recorded (Figure 3b). Trash in the form of old vehicles, metal scraps, glass, etc., littered areas of the survey site.

In addition to the FTHL, two CDFG species of special concern were detected: the loggerhead shrike (*Lanus ludovicianus*) was detected during every survey throughout the entire survey area foraging within all habitats, and the Western burrowing owl (*Athene cunicularia*) was detected on Surveys 3 and 4 within the survey area near known burrows found during protocol surveys for the Western burrowing owl.

One California State Endangered Species, the Gila woodpecker (*Melanerpes uropygialis*), was auditorily and visually detected on all surveys. Two Gila woodpeckers (assumed to be a pair) were first detected within the yard of a private residence approximately 1,550 feet southeast of the Dixieland Substation. The Gila woodpeckers remained at this location during all surveys; however, during the final survey, a female/immature Gila woodpecker flew over the Dixieland Substation and perched high in a tamarisk (*Tamarisk ramosissima)* approximately 435 feet north of the substation, only to be chased off by a loggerhead shrike. During this observation, a Gila woodpecker could be heard vocalizing at the residence where this species was initially detected. A short time later, well south of the residence hosting the woodpeckers, another Gila woodpecker was on a utility pole (immediately outside of the buffer). The Gila woodpecker at the residence could again be heard vocalizing simultaneously. Given these observations and detections, there is a strong possibility that these woodpeckers bred at the residence and young are dispersing and may be utilizing the site.

See Figures 4a, b for locations of other sensitive wildlife species detected within the survey area.

Discussion

The different substrates and habitats throughout the survey area posed for an interesting outcome for this FTHL survey. As for detecting horned lizards, there was very little “ideal” FTHL habitat found in the survey area, meaning there was not an abundance of drift sand, which increases the detectability rate dramatically. Given this information, survey techniques focused on looking for scat and horned lizards in the open, which generally is not very effective, especially given these were line transects and not meandering transects. For instance, when the final transect was complete after confirming the identity of the first FTHL found during a survey, biologists found horned lizard scat approximately 100 feet in between transect lines that would have otherwise gone undetected. The FTHL are known to wander hundreds of meters in a day; because of this, it is possible that this/these horned lizards had moved into the area recently. Overall, the abundance of lizards and other wildlife was very low, but noticeably

increased in areas where even minimal amounts of drift sand occurred. The lack of scat and visual detections of any species throughout the entire survey area also seemed to be an indicator of the low usage of the site; however, Western whiptail (*Cnemidophorus tigris)* scat was detected in low numbers during all surveys. With horned lizard detections on opposite extremes of the survey area (although the northern-most detection was unidentified), it seems that horned lizards, including FTHL, may use the entire survey area, whether it be in isolated patches or transitioning from one habitat to the next, possibly following a food source.

Based on surveys for FTHL and the conditions set forth in the Flat-tailed Horned Lizard Rangewide Management Strategy (FTHLICC 2003), the species should be considered present on the project site; however, given that this is a linear project spanning across a variety of habitats, the FTHL should only be considered present where suitable FTHL exists.

Certification Statement

Qualified EDAW biologists who conducted FTHL surveys for the "Dixieland" ID 230-kV Transmission Line and Substation Expansion project certify that the information in this survey report fully and accurately represents the work performed by EDAW biologists. Signatures of current EDAW biologists who conducted the protocol surveys are included below. The results of focused surveys for listed species are typically considered valid for 1 year by the resource agencies. If you have any questions or require additional information, please feel free to contact James McMorran at (619) 233-1454.

Sincerely,

James McMorran Wildlife Biologist	Andrew Fisher Wildlife Biologist	Mike Anguiano Wildlife Biologist

Attachments: Figure 1 – Regional Map
Figure 2a – Vicinity Map (topographical)
Figure 2b – Vicinity Map (Aerial)
Figure 3a – Horned Lizard Species Observations
Figure 3b – Horned Lizard Species Observations
Figure 4a – Other Sensitive Wildlife Species Detected
Figure 4b – Other Sensitive Wildlife Species Detected
Appendix A – Field Notes
Appendix B – Wildlife Species Detected During FTHL Surveys
Appendix C – Survey Area Habitat Photographs
Appendix D – FTHL Photographs and Other Documentation

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FIGURES

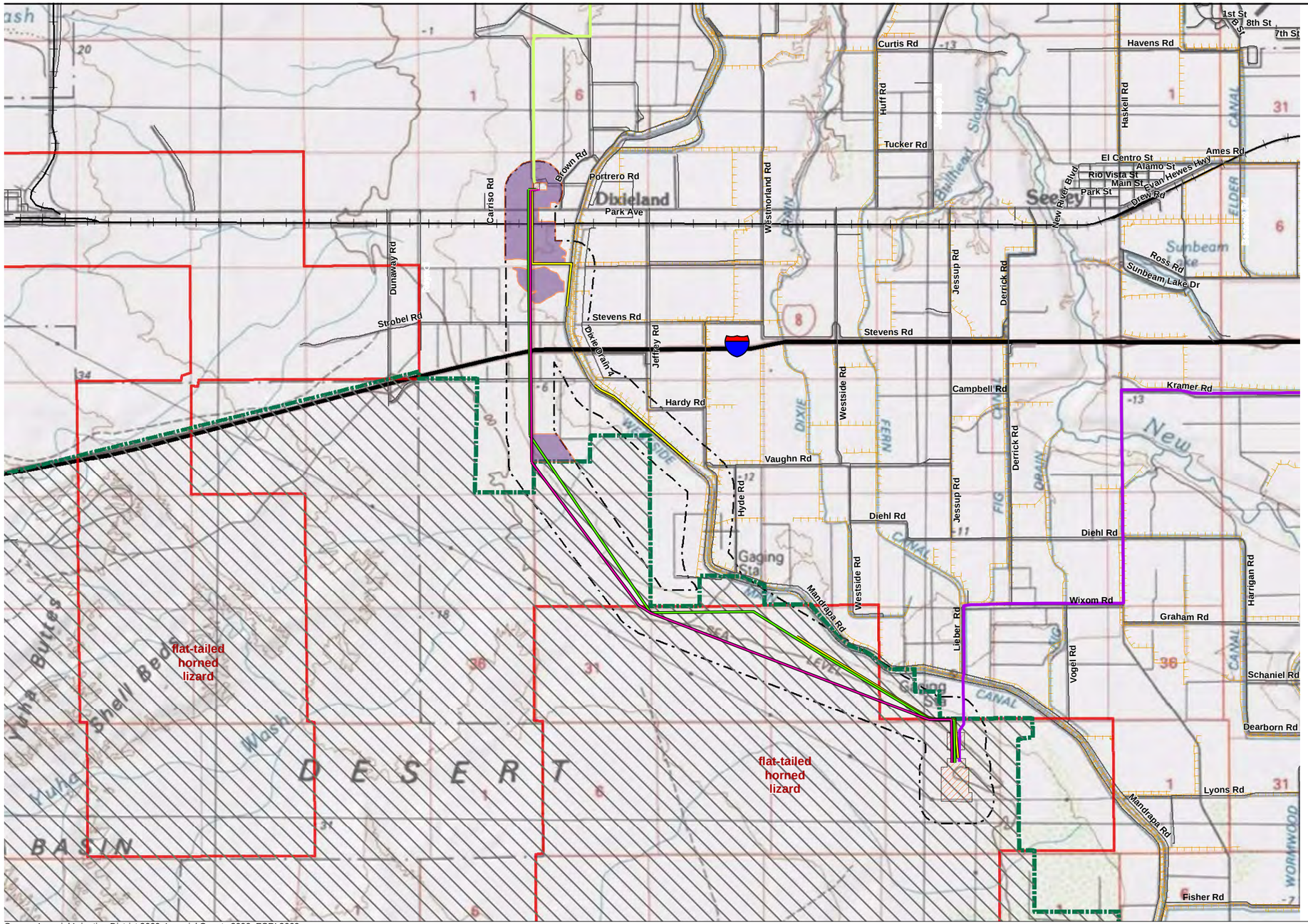
Source: Imperial Irrigation District 2009; ESRI 2009

20 10 0 20 Miles

Scale: 1 = 1,266,786.8; 1 inch = 20 mile(s)

Figure 1

Regional Map



LEGEND

Transmission Line

Existing

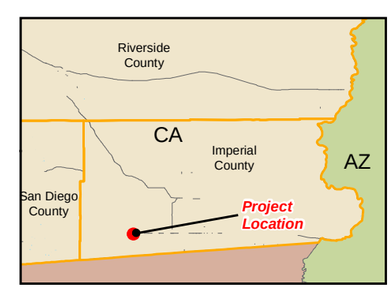
- R-Line
- S- Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- Survey Area Buffer - 1000 ft
- Survey Area for FTHL
- Flat-tailed Horned Lizard Management Area
- Canal
- Highways

CNDDB Species: Flat-tailed Horned Lizard

- Specific bounded area



Source: Imperial Irrigation District 2009; Imperial County 2009; ESRI 2009

5,000 2,500 0 5,000 Feet

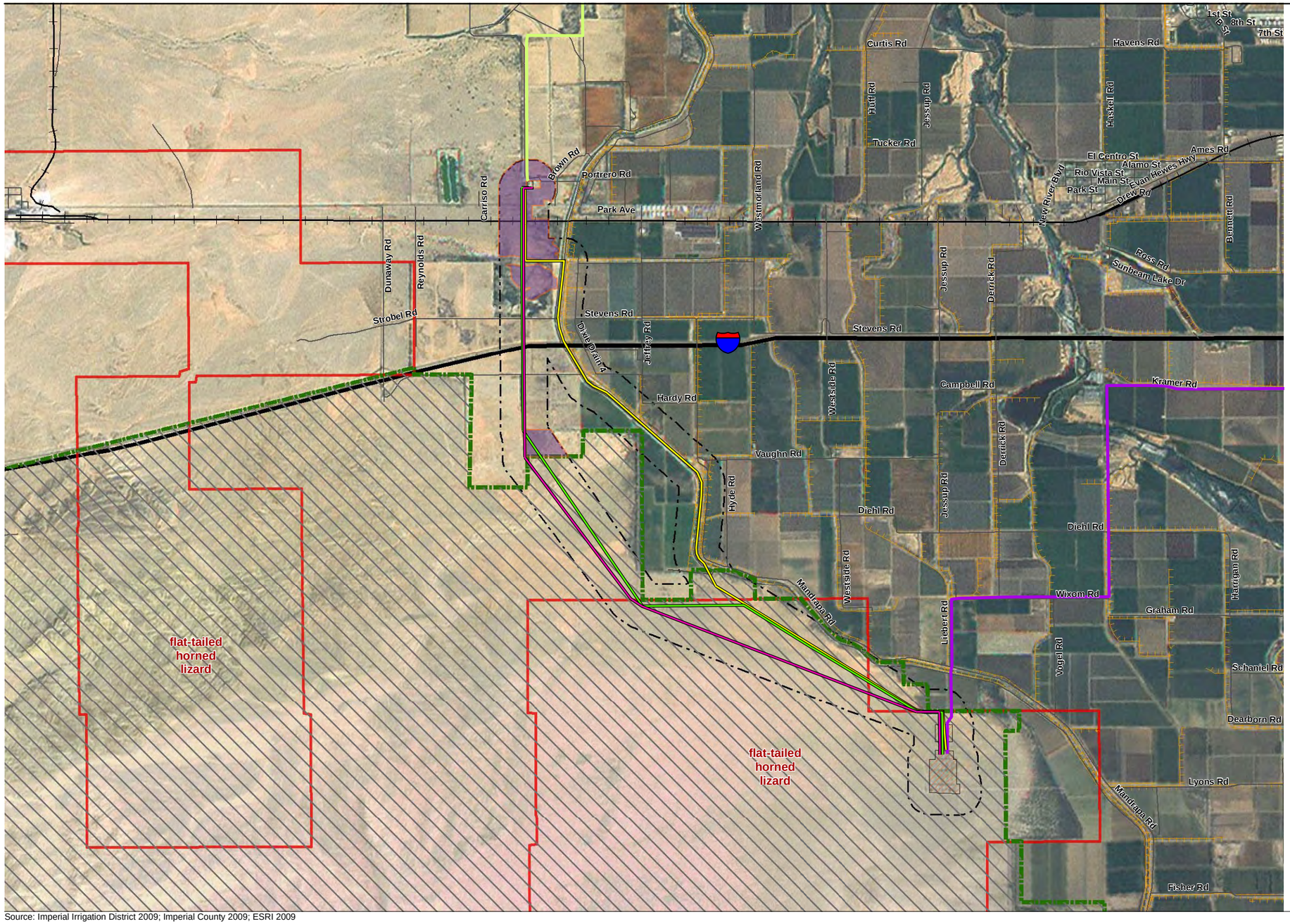
Scale: 1 = 60,000; 1 inch = 5,000 feet

Figure 2a

Vicinity Map

ID Line - Imperial Valley to Dixieland 230 kV Transmission Line Flat-tailed Horned Lizard Survey Report

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\FTHL_Report\FTHL_Rpt_20090829\Fig2a_FTHL_Vicinity_Topo.mxd, 09/04/09, ShahS2



LEGEND

Transmission Line

Existing

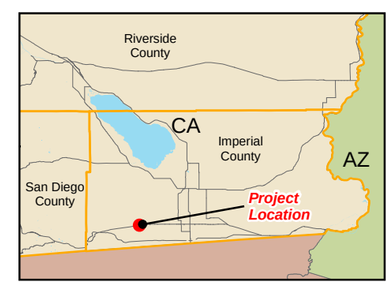
- R-Line
- S- Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- Survey Area Buffer - 1000 ft
- Survey Area for FTHL
- Flat-tailed Horned Lizard Management Area
- Canal
- Highways

CNDDB Species: Flat-tailed Horned Lizard

- Specific bounded area



Source: Imperial Irrigation District 2009; Imperial County 2009; ESRI 2009

5,000 2,500 0 5,000 Feet

Scale: 1 = 60,000; 1 inch = 5,000 feet

Figure 2b

Vicinity Map

ID Line - Imperial Valley to Dixieland 230 kV Transmission Line Flat-tailed Horned Lizard Survey Report

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\FTHL_Report\FTHL_Rpt_20090829\Fig2b_FTHL_Vicinity_Aerial.mxd, 09/18/09, ShahS2

Source: Imperial Irrigation District 2009

1,250 625 0 1,250 Feet

Scale: 1 = 15,000; 1 inch = 1,250 feet

LEGEND

Horned Lizard Species Sign and Observation

- Unidentified Horned Lizard Species

Transmission Line

Existing

- R-Line
- S-Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- Canals
- Drains
- Streets/Roads
- RailRoad
- Survey Area Buffer - 1000 ft
- Survey Area for FTHL
- FTHL Transects

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Eucalyptus Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Figure 3a

Horned Lizard Species Observations

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\FTHL_Report\FTHL_Rpt_20090829\Fig3a_FTHL_Resources.mxd, 09/04/09, ShahS2

LEGEND

Horned Lizard Species Sign and Observation

- Flat-tailed Horned Lizard
- Flat-tailed Horned Lizard Scat
- Horned Lizard Species Scat

Transmission Line

Existing

- R-Line
- S-Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Canals
- Drains
- Streets/Roads
- RailRoad
- FTHL Transects
- Survey Area for FTHL
- Survey Area Buffer - 1000 ft
- Flat-tailed Horned Lizard Management Area

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Eucalyptus Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

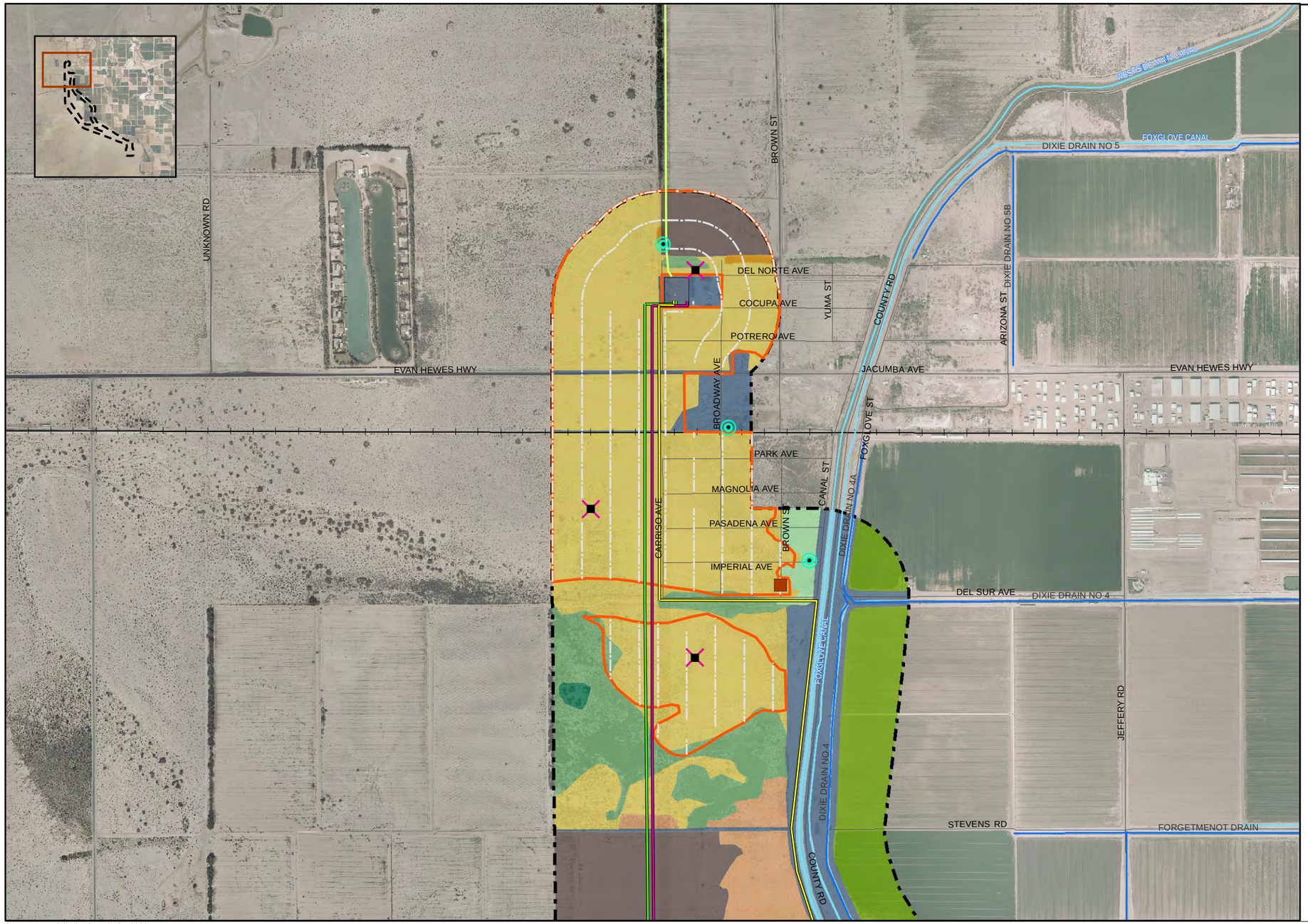
Source: Imperial Irrigation District 2009

1,250 625 0 1,250 Feet

Scale: 1 = 15,000; 1 inch = 1,250 feet

Figure 3b

Horned Lizard Species Observations



LEGEND

Other Sensitive Wildlife Species

- Gila Woodpecker
- Loggerhead Shrike
- Burrowing Owl

Transmission Line

Existing

- R-Line
- S-Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- Canals
- Drains
- Streets/Roads
- RailRoad
- Survey Area Buffer - 1000 ft
- Survey Area for FTHL
- FTHL Transects

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Eucalyptus Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Source: Imperial Irrigation District 2009

1,250 625 0 1,250 Feet

Scale: 1 = 15,000; 1 inch = 1,250 feet

Figure 4a

Other Sensitive Wildlife Species Detected

ID Line - Imperial Valley to Dixieland 230 kV Transmission Line Flat-tailed Horned Lizard Survey Report

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\FTHL_Report\FTHL_Rpt_20090829\Fig4a_FTHL_OtherSensitiveResources.mxd, 09/04/09, ShahS2

LEGEND

Other Sensitive Wildlife Species

- Loggerhead Shrike

Transmission Line

Existing

- R-Line
- S-Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Canals
- Drains
- Streets/Roads
- RailRoad
- FTHL Transects
- Survey Area for FTHL
- Survey Area Buffer - 1000 ft
- Flat-tailed Horned Lizard Management Area

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Eucalyptus Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Source: Imperial Irrigation District 2009

1,250 625 0 1,250 Feet

Scale: 1 = 15,000; 1 inch = 1,250 feet

Figure 4b

Other Sensitive Wildlife Species Detected

APPENDIX A

FIELD NOTES

FTHL SURVEYS

Observer: AFI Add'l Person: JMC GPS Unit: GTF Garmin 4
Project: ID LINE Survey Site: Dixieland Sub. GPS Site Code: NA Map #: _____
Date: 6-24-09 Survey Type: Flat-tailed Horned Lizard Survey 1 of 4
Time Start: 0620 Time End: ~~1012~~ 1100 Area: North of I-8 near Dixieland Substat.
Time Start: _____ Time End: _____ Area: _____
Start: T: 75 CC: 100 Wind Sp/Dir: Ø Relative Humidity: 55%
End: T: 92 CC: Ø Wind Sp/Dir: 2mph NW Relative Humidity: 31%

Map/ GPS #	Time	Species	Lifestage	Location (trail, leaf litter, veg. type, etc)	Comments
		ORBL			
		MODO			
		RWBL			
		ISTGN			
		LOSH			
		LENI			
		Coyote			
		Cottontail			
		Jackrabbit			
		ABTO			
		CLSW			
		GAQU			
		~~NOFI~~			
		GTGR			
		CGDO			
	Side-blotched				
	W. Whiptail				
		GRRO			~~TRACKS~~
		K-rat			
		WINDO			
		VERD			
	Round-Tailed Grnd Sq.				
		GBHE			
		KILL			
		~~GRRO~~			TRACKS
		EUCD			
		SAPH			
		WEKI			
HL001	0746	Horned Lizard (sp)		creosote scrub	UN-IDed, went into bushes + could not relocate.
		AMKE			
		TUVU			

GIWO(2) PAIR
COYE
BLPH

Marked on map ~

Page 1 of 1

* NO FTHL

FTHL SURVEYS

Observer: AFI Add'l Person: JMC GPS Unit: _____
Project: ID LINE Survey Site: _____ GPS Site Code: _____ Map #: _____
Date: 6-25-09 Survey Type: Flat-tailed Horned Lizard Survey 1 of 4 DAY 2
Time Start: 0620 Time End: _____ Area: _____
Time Start: 0835 Time End: _____ Area: _____
Start: T: 75°F CC: 15% Wind Sp/Dir: 0.8 mph W Relative Humidity: 68 ~~[illegible]~~%
End: T: 88°F CC: 30% Wind Sp/Dir: 6 mph NE Relative Humidity: 46.6

Map/ GPS #	Time	Species	Lifestage	Location (trail, leaf litter, veg. type, etc)	Comments
North I-8		GAQU		→	Additional Species:
		MODO			BHCO
		BTGR			COYE
		Cottontail			RWBL
		RT. Jackrabbit			BLPH
		Side-blotch			BTGN
		LENT	nest on ground w/ 1 egg		WFME
		Coyote	tracks + scat		
		CLSW			Very few lizards & few ant colonies. Soil is crusty & clay - Tamarisk to mission id.
SOUTH I-8		Zebra-Tail			
		LOSH			
		R.T. Antelope Grnd Sq.			
		LENT	w/ 1 young		
		MODO			
		GRPO			TRACKS
		RWBL			
		CORA			
		Coyote			TRACKS
		Gecko			TRACKS
IDPRFANFST01		PRFR	w/ NEST	on transmission line	

* NO FTHL

FTHL SURVEYS

Observer: AF-L Add'l Person: JMC GPS Unit: NMR
Project: IID Drilling Survey Site: IID GPS Site Code: _____ Map #: nothing mapped
Date: 7-7-09 Survey Type: Flat-tailed Horned Lizard Survey 2 of 4
Time Start: 0610 Time End: ~~0840~~ 1045 Area: _____
Time Start: ~~0940~~ Time End: _____ Area: _____
Start: T: 77 CC: Ø Wind Sp/Dir: Ø Relative Humidity: ~~[illegible]~~ 65% humid + warm
End: T: 94 CC: Ø Wind Sp/Dir: 3-5mph Relative Humidity: 61%

Map/ GPS #	Time	Species	Lifestage	Location (trail, leaf litter, veg. type, etc)	Comments
		GAQU			
		GTGR			NO FTHL
		GIWO			
		MODO			
		BHCO			
		VERD			
		BTGN			
		WEKI			
		ABTO			
		EUCD			
		WWDO			
		LOSH			
		GBHE			
		COGD			
		ROPI			
		TUVU			
	Round-tailed Ground Squirrel				
	~~ZEBRA-TAIL~~				
	Western Whiptail				
	Sidewinder				
	Side-blotched Lizard				
		~~EUSI~~			

Page 1 of 1

* Look at comments on other side of page for additional species.

FTHL SURVEYS

Observer: AFI Add'l Person: JMV GPS Unit: - none
Project: IID Dixieline Survey Site: _____ GPS Site Code: _____ Map #: - Nothing mapped
Date: 7-8-09 Survey Type: Flat-tailed Horned Lizard Survey 2 of 4
Time Start: 0610 Time End: 0752 Area: _____
Time Start: _____ Time End: _____ Area: _____
Start: T: 81 CC: 3% Wind Sp/Dir: 3-5SW Relative Humidity: 22°
End: T: 85 CC: 3% Wind Sp/Dir: 1-4W Relative Humidity: 40°

Map/ GPS #	Time	Species	Lifestage	Location (trail, leaf litter, veg. type, etc)	Comments
		LOSH			
		GEME			NO FTHL
		BTGN			
		WWDO			
		MODO			
		GAGU			
		Zebra-tail			
		Western whiptail			
		GTGR			
		ABTO			

FTHL SURVEYS

Observer: J. McMorran Add'l Person: Mike Angiuoni GPS Unit: _____
Project: _____ Survey Site: _____ GPS Site Code: _____ Map #: _____
Date: 8/4/09 Survey Type: Flat-tailed Horned Lizard Survey 3 of 4
Time Start: 0555 Time End: 1115 Area: _____
Time Start: _____ Time End: _____ Area: _____
Start: T: 79.5 CC: 0% Wind Sp/Dir: CALM Relative Humidity: 66
End: T: 96 CC: 75% Wind Sp/Dir: 1-4 WNW Relative Humidity: 49

Map/ GPS #	Time	Species	Lifestage	Location (trail, leaf litter, veg. type, etc)	Comments
		LOSH			
		NOMO			
		HOFI			
		BTGN			
		VERD			
	0609	~~R~~PRFA			flying NE in distance
		WWDO			near Dixieland Sub.
		POPI			
		EUCD			
		BHCO			
		GTGR			
	0630	Sidewinder			
		Rabbit			tracks
		Coyote			tracks
		CORA			
		AMKE			
	0647	GIWO			
		BTSP!			♀/IMM
		WEKI			
		D. Cottontail			
		RT. Jack RABBIT			
		Whiptail			
		BUOW			Present @ B03
		GAQU			Continued from phase III
					Burrow Survey

FTHL SURVEYS

Observer: J. McMorran Add'l Person: Mike Angiano GPS Unit: _____
Project: _____ Survey Site: _____ GPS Site Code: _____ Map #: _____
Date: 8/5/09 Survey Type: Flat-tailed Horned Lizard Survey 3 of 4
Time Start: 0558 Time End: 0802 Area: _____
Time Start: _____ Time End: _____ Area: _____
Start: T: 83 CC: 0% Wind Sp/Dir: 0-2 Relative Humidity: 27%
End: T: 92 CC: 0% Wind Sp/Dir: 4-7 ESE Relative Humidity: 46%

Map/ GPS #	Time	Species	Lifestage	Location (trail, leaf litter, veg. type, etc)	Comments
		VEFD			
		EWD			
		BTGN			
		LOSH			
		KIII			
		MODO			
		WWDO			
		HOLA			
		R.T Ground sq.			
		Whiptail			
		(Maybe pull up Soil layers for a figure)			

FTHL SURVEYS

Observer: James McMorran Add'l Person: Mike Anguiano GPS Unit: _____
Project: ID Line Survey Site: ~~El Centro~~ Dixieland GPS Site Code: _____ Map #: _____
Date: 08/11/09 Survey Type: Flat-tailed Horned Lizard Survey 4 of 4
Time Start: 0600 Time End: 1005 Area: North of I-8
Time Start: _____ Time End: _____ Area: _____
Start: T: 76 CC: 0 Wind Sp/Dir: Calm Relative Humidity: ~~8~~ 82%
End: T: 97 CC: 0 Wind Sp/Dir: Calm Relative Humidity: >7%

Map/ GPS #	Time	Species	Lifestage	Location (trail, leaf litter, veg. type, etc)	Comments
		TRES			(3)
		BTbf			
		MoDo			
		SUCD			
		VERD			
		BT. Jack rabbit			
		CLSW			
		KIL			
		LBDO			
		Whim			
		COPA			
		BHOR			(3)
	0645	GIWO			onsite; tamarisk north of Dixieland Subs
		WWDO			(11)!! fly over
		WETA			
		HOFI			
		BTSP			
		Scorpion			
		Warbler buzzes (Dendroica)			
		BUOW			→ Perched on mesquite calling (alarm) 50'
		GAQU			west of transect line
	0822	GIWO			100' west of B13
		HOLA			
		GRRO			
					→ on utility pole near
					canal + road. Then
					flew across to palm tree
					on east side of canal.

FTHL SURVEYS

Observer: Jimmy McMorran Add'l Person: Mike Anguiano GPS Unit: _____
Project: ID Link Survey Site: ~~El Centro~~ Silsbee GPS Site Code: _____ Map #: _____
Date: 8/12/09 Survey Type: Flat-tailed Horned Lizard Survey 4 of 4
Time Start: 0721 Time End: 0935 Area: N & S of I-8
Time Start: _____ Time End: _____ Area: _____

Start: T: 83 CC: 0 Wind Sp/Dir: CALM Relative Humidity: 31
End: T: 99 CC: 0 Wind Sp/Dir: 0-2 Relative Humidity: 34

Map/ GPS #	Time	Species	Lifestage	Location (trail, leaf litter, veg. type, etc)	Comments
		LOSH			
North of I-8		MODO			
		PODI			
		SUCD			
		WWDO			
		BTGN			
		VERD			
		CLSW			
		LENI			
		GAQU			
South of I-8		BT. Jackrabbit			
		Whiptail			
FTHL-SCAT-8-12	0841	FTHL	Scat		very fresh, broke apart & full of ant heads,
FTHL8-12-09	0848	FTHL			Temp 97°F 97°
		HOLA			
FTHL-SCAT-02	0920	FTHL	SCAT		3 scat within 20'
					Incidental

APPENDIX B

WILDLIFE SPECIES DETECTED DURING FTHL SURVEYS

Appendix B
Wildlife Species Detected During FTHL Surveys

	Scientific Name	Common Name
INVERTEBRATES		
Order Scorpiones		**Scorpions**
	Family Arachnida	
	Scorpion sp.	scorpion
REPTILES		
Order Squamata		**Lizards and Snakes**
	Family Gekkonidae	
	Coleonyx variegatus variegates	desert banded gecko
	Family Phrynosomatidae	
	Uta stansburiana	side-blotched lizard
	Callisaurus draconoides	zebra-tailed lizard
	Family Teiidae	
	Cnemidophorus tigris	western whiptail
	Family Phrysonomatidae	
	Phrynosoma mcallii [1]	flat-tailed horned lizard
	Family Viperidae	
	Crotalus cerastes	sidewinder
BIRDS		
Order Galliformes		**Magapodes, Curassows, Pheasants, and Relatives**
	Family Odontophoridae	
	Callipepla gambelii	Gambel's quail
Order Ciconiiformes		**Herons, Storks, Ibises, and Relatives**
	Family Ardeidae	
	Ardea Herodias	great blue heron (overhead)
Order Falconiformes		**Vultures, Hawks, and Falcons**
	Family Cathartidae	
	Cathartes aura	turkey vulture
	Family Falconidae	
	Falco sparverius	American kestrel
	Falco mexicanus	prairie falcon (overhead)
Order Charadriiformes		**Shorebirds, Gulls, and Relatives**
	Family Charadriidae	
	Charadrius vociferous	killdeer (overhead)
	Numenius phaeopus	whimbrel (overhead)
	Limnodromus scolopaceus	long-billed dowitcher (overhead)
Order Columbiformes		**Pigeons and Doves**
	Family Columbidae	
	Columba livia	rock pigeon
	Zenaida macroura	mourning dove
	Streptopelia decaocto	Eurasian collared-dove
	Zenaida asiatica	white-winged dove
	Columbina passerina	common ground-dove

	Scientific Name	Common Name
Order Cuculiformes		**Cuckoos and Relatives**
	Family Cuculidae	
	Geococcyx californianus	greater roadrunner
Order Strigiformes		**Owls**
	Family Strigidae	
	Athene cunicularia	burrowing owl
Order Caprimulgiformes		**Goatsuckers and Relatives**
	Family Caprimulgidae	
	Chordeiles acutipennis	lesser nighthawk
Order Piciformes		**Woodpeckers**
	Family Picidae	
	*Melanerpes uropygialis**	gila woodpecker
Order Passeriformes		**Song birds**
	Family Tyrannidae	
	Sayornis saya	Say's phoebe
	Sayornis nigricans	black phoebe
	Tyrannus verticalis	western kingbird
	Family Laniidae	
	Lanus ludovicianus [1]	loggerhead shrike
	Family Corvidae	
	Corvus corax	common raven
	Family Alaudidae	
	Eremophila alpestris	horned lark
	Family Hirundinidae	
	Tachycineta bicolor	tree swallow (overhead)
	Petrochelidon pyrrhonota	cliff swallow (overhead)
	Family Remizidae	
	Auriparus flaviceps	verdin
	Family Polioptilidae	
	Polioptila melanura	black-tailed gnatcatcher
	Family Mimidae	
	Mimus polyglottos	northern mockingbird
	Family Parulidae	
	Geothlypis trichas	common yellowthroat
	Family Thraupidae	
	Piranga ludoviciana	Western tanager
	Family Emberizidae	
	Pipilo aberti	Abert's towhee
	Amphispiza billineata	black-throated sparrow
	Family Cardinalidae	
	Pheucticus melanocephalus	black-headed grosbeak
	Family Icteridae	
	Sturnella neglecta	western meadowlark
	Agelaius phoeniceus	red-winged blackbird
	Quiscalus mexicanus	great-tailed grackle
	Molothrus ater	brown-headed cowbird
	Icterus cucullatus	hooded oriole

	Scientific Name	Common Name
	Family Fringillidae	
	Carpodacus mexicanus	house finch
MAMMALS		
Order Lagomorpha		**Rabbits, Hares, and Pikas**
	Family Leporidae	
	Lepus californica	black-tailed jackrabbit
	Sylvilagus audubonii	Audobon's cottontail
Order Rodentia		**Rodents**
	Family Heteromyidae	
	Dipodomys deserti	desert kangaroo rat (burrows)
	Spermophilus tereticaudus	round-tailed ground squirrel
Order Carnivora		**Carnivores**
	Family Canidae	
	Vulpes macrotis	desert kit fox (scat)
	Canis latrans	coyote (tracks)

* Federally or State Threatened or Endangered Species
[1] State Species of Special Concern
(CDFG 2009)

APPENDIX C

FTHL SURVEY AREA
HABITAT PHOTOGRAPHS

Appendix C
FTHL Survey Area Habitat Photographs

Dixieland Substation

Habitat north of Highway 80
(Evan Hewes Highway)

EDAW biologist surveying for FTHL
north of Highway 80

Habitat south of Highway 80
(Evan Hewes Highway)

Isolated areas of small dunes were mixed
within the habitat south of Highway 80
(Evan Hewes Highway)

This crusty and cracked clay substrate
was typical throughout the survey area

Habitat south of Highway 80
(Evan Hewes Highway)

Habitat south of Interstate 8

Habitat south of Interstate 8

.

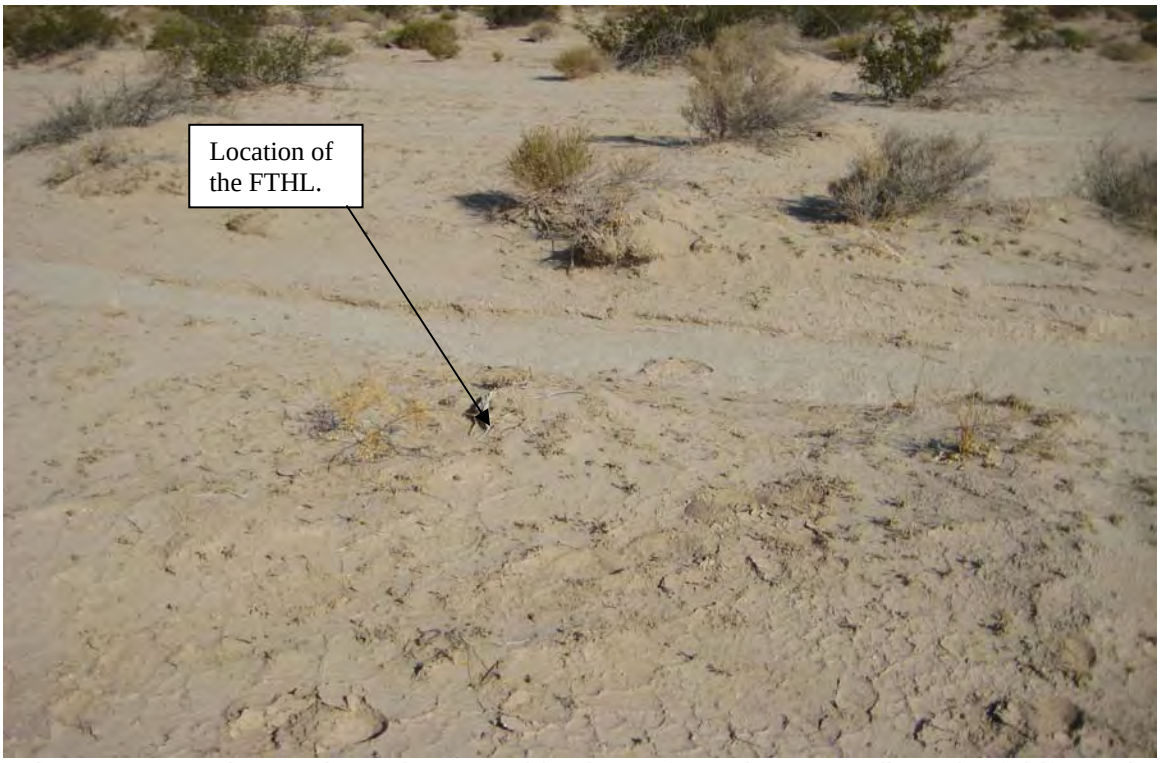
APPENDIX D

FTHL PHOTOGRAPHS AND OTHER DOCUMENTATION

Location and habitat of where the unidentified horned lizard was detected north of Highway 80 (Evan Hewes Highway) near the Dixieland Substation. Location depicted in Figure 3a.

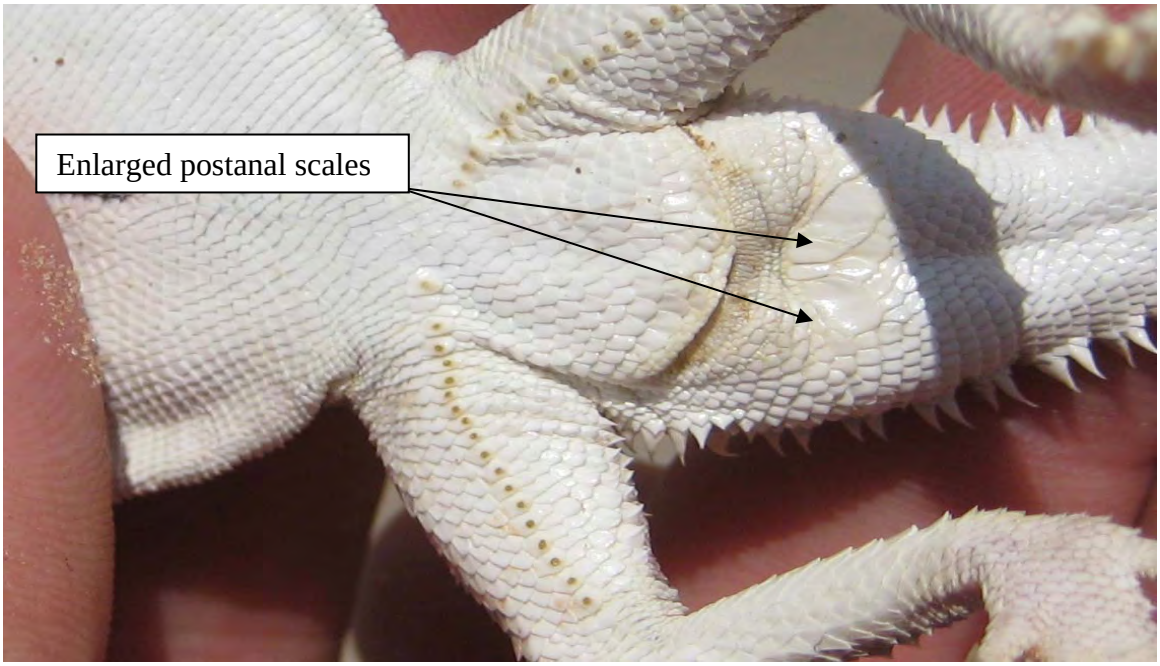
The Flat-tailed Horned Lizard detected August 12, 2009, during protocol surveys south of Interstate 8 near the eastern-most transect adjacent to the Yuha FTHL management area. Location is depicted in Figure 3b.

For scale, this pen, which measures 14 ½ centimeters, was placed next to the FTHL.

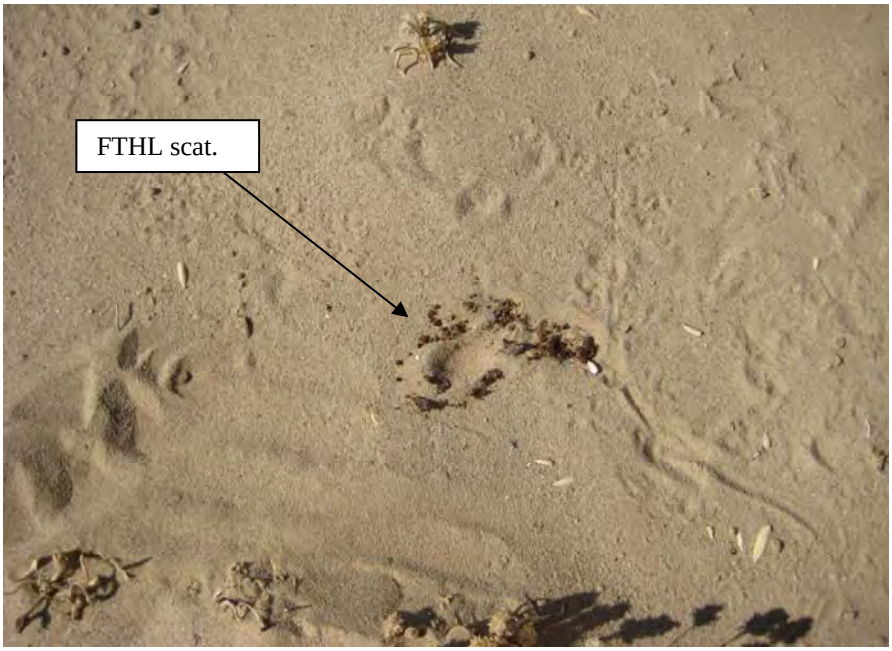


The FTHL was detected sunning near this piece of wood on a small patch of drift sand.

Determining the sex of the FTHL.



A zoomed-in image of the FTHL shows enlarged postanal scales, which determines the sex as a male.



This scat was detected, and is what initially made biologists aware of a horned lizard's presence. Notice FTHL tracks directly above the scat. Location is depicted in Figure 3b.

A zoomed-in image of the FTHL scat, which consists of the heads of harvester ants.

Looking north from the FTHL detection area.

Looking east from the FTHL detection area.

Looking south from the FTHL detection area.

Looking west from the FTHL detection area.

HABITAT ASSESSMENT of FTTH DETECTION AREA

This area of the FTTH detection is in an area dominated by creosote & atriplex (sp.). Sandy washes run through this eastern section of the survey area. Hardpan substrate is abundant as well; however, small dunes (hummocks) are abundant in this area with areas of scattered drift sand around. Occasionally I have seen evidence of OHV tracks & use in the washes and elsewhere not abundant. No OHV use is in the area of this detection. However further south on this transect there is old dirtbike tracks, who knows how old. I have seen no new impacts since surveys have begun.

James McMorran
8/12/2009

Incidental Horned Lizard Species Scat Detections within the Survey Area

The three images below are of scat incidentally found in close proximity of each other within the survey area (a short distance to the west of the FTHL detection).

* Locations of these three incidental horned lizard species scat detections are depicted in Figure 3b.

`

ATTACHMENT E

BURROWING OWL TECHNICAL REPORT

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 30, 2009

Robert Powell
Imperial Irrigation District
333 East Barioni Boulevard
Imperial, CA 92251

Subject: Report Summarizing Results of the ID 230-kV Transmission Line and Substation Expansion Project Western Burrowing Owl Presence/Absence Surveys, Imperial County, California

Dear Mr. Powell:

This letter summarizes results of focused protocol surveys conducted by EDAW, Inc. (EDAW) to determine the presence or absence of the western burrowing owl (*Athene cunicularia;* BUOW) within the proposed ID 230-kV Transmission Line and Substation Expansion project. For this report "the project, or the project site" will refer to "the proposed ID 230-kV Transmission Line and Substation Expansion project," which includes the proposed route, alternative routes, and all buffer zones surveyed for BUOW. EDAW conducted protocol surveys on behalf of Imperial Irrigation District (IID) in support of environmental documentation required by the Bureau of Land Management (BLM). Per the California Department of Fish and Game (CDFG) and the California Burrowing Owl Consortium (CBOC) Survey Guidelines (CBOC 1993), this report represents the Phase IV summary of the BUOW survey for the proposed ID Line project.

Project Location

The entire project will be located in Imperial County in the State of California. The ID line will start at the San Diego Gas & Electric (SDG&E)/IID Imperial Valley (IV) Substation located southwest of the City of El Centro, California. The line will exit at the north side of the IV Substation and run northwest and north on BLM land. Depending on the final route, the line will be constructed on a combination of BLM land, existing IID right-of-way, and private property that will have to be acquired as a right-of-way. The transmission line will extend for approximately 7.3 miles in a northwest and north direction before entering the Dixieland Substation north of Interstate 8 (I-8) (Figures 1, 2a, and 2b). The existing IV Substation, and the proposed ID Line starting point and new substation are located approximately 10.5 miles southwest of El Centro, California. The Dixieland Substation is located approximately 13 miles west of El Centro, California (refer to Figures 1, 2a, and 2b).

Project Description

IID is proposing to construct a 230-kV transmission line (referred to as the ID line) between the IV Substation and Dixieland Substation in Imperial County (Figure 1). The entire project site will span approximately 7.3 miles. Three routes are proposed (one proposed route and two alternatives) and depicted in Figures 2a and 2b.

An approximately 40-acre site immediately north of the existing IV Substation will be included in this assessment for contingency planning and possible future substation expansion. In addition, approximately 0.4 acre (60 feet by 300 feet) immediately adjacent to the Dixieland Substation has been identified for potential expansion of this substation.

Depending on the route chosen, the 230-kV ID line will require construction of approximately 48 new H-frame structures, four three-pole structures, and three single monopole steel structures. These structures will be an average height of 90 feet above ground and will be designed to support a single 230-kV three-phase electrical circuit, one optical ground wire, and one 3/8-inch static or overhead ground wire.

Proposed Project

This route would exit the IV Substation on the north side and run in a north direction for about 0.5 mile. The line would make a 90 degree westward turn and run for approximately 0.25 mile before turning in a northwest direction. The line would stay on this northwest axis for approximately 2.5 miles before turning in a north-northwest direction and running for another approximately 1.5 miles before turning north. The line will run north for approximately 2 miles while crossing I-8 and State Highway 80 (Evan Hewes Highway) before connecting with the Dixieland Substation.

This alternative would use two-pole-type H-frame structures, allowing longer spans (800 to 900 feet) between structures than that necessary for single-pole structures. This would allow for a less-permanent foundation area and less direct permanent impacts than Alternative 2 (see below). Shorter height H-frame structures also result in less visual impact.

H-pole-type structures use direct-embedded-type foundations, which require less ground disturbance than the single-type pole structures necessary for Alternative 2 (see below).

Because this alternative route would require fewer turns in the routing, fewer dead-end and angle structures would be required, resulting in lower costs and lower overall pole foundation areas (permanent direct impacts) compared to the other alternative routes.

Alternative 1

This alternative would follow the same route as the proposed route until a point approximately 0.75 mile after exiting the IV Substation, at which point this route would turn in a slightly more northward (running northwest) direction than the proposed alternative for about 2 miles until turning west and intersecting with the preferred route after running toward the west for 1 mile. At this point, this alternative would generally coincide with the proposed route for the rest of the route.

This alternative route would require more direction changes than the proposed project, resulting in an increased number of dead-end and angle-appropriate structures. These dead-end and angle structures are more costly than other structures, and require larger foundations (larger permanent impact) and larger work areas to install (larger ground disturbance and direct impact).

Alternative 2

This route would follow the same path as Alternative 1, until a point approximately 2.75 miles from the exit of the IV Substation. At this point, the route would continue in a generally northwest direction to intersect with the current IID Westside Main Canal right-of-way near the Foxglove Canal headgate. From this point, the line would generally follow within the Westside Main Canal right-of-way north and northwest until a point approximately 0.75 mile north of I-8. At this point, the line would turn 90 degrees toward the west. The line would run west for less than 0.5 mile before making a 90 degree turn toward the north and entering the Dixieland Substation approximately 0.5 mile to the north.

This route alternative has more direction changes than the other two alternative routes, requiring more higher cost, dead-end and angle-type structures.

Because the available right-of-way width within a large portion of this route alternative is limited, this alternative would require single-pole (monopole) structures, which require shorter spans (300 to 650 feet) between pole structures. The shorter line spans, combined with the frequent direction changes necessitated by this route, would require considerably more poles with larger foundations and a much higher cost then the other two route alternatives.

Project Survey Area

The project routes extend through low desert that ranges between approximately 30 feet below mean sea level to about 30 feet above mean sea level in the Sonoran Desert of California. The public lands portion of the proposed routes is primarily desert flats and gradually sloping bajadas. The predominant vegetation type is creosote (*Larrea tridentata*) scrub interspersed with a few microphyll woodlands, and supports a mosaic of open desert scrub, sand/desert pavement, and numerous seasonal washes.

Vegetation communities in addition to the disturbed and developed habitat throughout the site include the following:

Sonoran Creosote Bush Scrub

Sonoran creosote bush scrub is designated by Holland as Code 33100 and Sawyer and Keeler-Wolf as the Ocotillo Series 182. This community is characterized within the survey area by sandy well-drained soils, and, in limited areas, an underlying shallow caliche layer. The single dominant plant for this community is creosote bush (*Larrea tridentata*). Other associates that are mostly confined to this community are burro-weed (*Ambrosia dumosa*), Mormon tea (*Ephedra trifurca*), dot-seed plantain (*Plantago ovata*), and dune evening-primrose (*Oenothera* deltoides). This community is mostly restricted to the southern part of the survey area. This plant community is intergraded into the wetland-associated plant communities, with honey mesquite (*Prosopis glandulosa* var. *torreyana*), four-wing saltbush (*Atriplex canescens*), and tamarisk (*Tamarix* spp.) frequently mixed in.

Arrow Weed Scrub (includes "Canal Associated Wetland")

Arrow weed scrub is designated by Holland as Code 63820. It approximates Sawyer and Keeler-Wolf's Arrow weed scrub 99. This vegetation community is less a natural wetland habitat and more a function of a high water table and seepage in low and disturbed areas near irrigation canals. The dominant and indicator plants of this community within the survey area are arrow weed (*Pluchea sericea*), honey mesquite, tamarisk, cattail (*Typha* sp.), and common reed (*Phragmites australis*). Screw bean mesquite (*Prosopis pubescens*) occurs along the southern portion of Westside Main Canal near a private ranch and may have been introduced as barrier planting.

Desert Dry Wash Woodland

Desert dry wash woodland is designated by Holland as Code 62200. It also approximates the Sawyer and Keeler-Wolf's Catclaw Acacia Series 129. This vegetation community consists of riparian scrub that is commonly restricted to natural desert washes, but, in the survey area, is more a function of a high water table and seepage from irrigation canals. The dominant and indicator plants of this community are arrow weed (*Pluchea sericea*) and honey mesquite, though tamarisk has invaded this habitat from numerous plantings in agricultural areas. Smoke tree (*Psorothamnus spinosus)* occurs in a natural braided wash that blends into pluchea scrub where it merges with the irrigation canal, south of I-8 and west of the Proposed Project and Alternative 1.

Stabilized and Partially Stabilized Desert Dunes

Stabilized and partially stabilized desert dunes are designated by Holland as 22200 and by Sawyer and Keeler-Wolf as the Mesquite Series 274. This community occupies some areas near the northern part of the survey area, west of the Dixieland Substation, where honey mesquite forms circular clones within a matrix of Sonoran Creosote bush scrub. This also resembles Holland's Mesquite Bosque 61820; however, honey mesquite does not form a near continuous canopy.

Mesquite Bosque

Mesquite Bosque occurs in areas where honey mesquite form larger woodlands that are not directly associated with artificial irrigation systems or stabilized dune formations. It is designated by Holland as 61820 and by Sawyer and Keeler-Wolf as the Mesquite Series 274. One area was mapped within the survey area that occurs west of the Westside Main Canal where honey mesquite is the dominant tree and there is relatively little tamarisk.

Agriculture

The majority of the lands mapped as agriculture within the survey area are for hay production, mainly alfalfa. Also included is sorghum, Bermuda grass, and corn. The agricultural areas occur on both sides of the Foxglove Canal and Westside Main Canal and occupy a substantial amount of the survey area. Large fields were recently cleared at the time of vegetation mapping or had been temporarily fallow but did not support any substantial emergence native vegetation.

Tamarisk Woodland

Tamarisk woodland is not described in Holland and there is no Sawyer and Keeler-Wolf equivalent. Rows of shelter belt trees were planted on the edges of agricultural fields that occur mostly in the northern portion of the survey area. It differs from Tamarisk scrub as it is described below because these are intentional plantings rather than occurring as an invasive plant that has become naturalized within some other native plant community.

Tamarisk has been planted in most of the length of these narrow gallery woodlands, although some sections have been planted to Eucalyptus (*Eucalyptus* spp.) and some other exotic plant species. Areas where Tamarisk has become more extensively widespread and is mixed with other native wetland species, such as honey mesquite, are mapped as Tamarisk scrub.

Tamarisk Scrub

Tamarisk scrub is designated by Holland as 63810 and by Sawyer and Keeler-Wolf as the Tamarisk Series 203. This habitat occurs north of I-8 and west of Foxglove Canal in the survey area. This area may have been formerly dominated by honey mesquite. Other common associates include quail brush (*Atriplex lentiformis)* and Arrow weed.

Open Water

Open water is mapped within the survey area only within the systems of canals and drains that carry irrigation water. This consists of the Westside Main Canal, Foxglove Canal, Forgetmenot Canal, and the Dixie Drains.

Desert Saltbush Scrub

Desert saltbush scrub is designated by Holland as 36110 and by Sawyer and Keeler-Wolf as the Mixed Saltbush Series 173. This community occupies low areas with denser soils, possibly affected by caliche, and occurs on the dry edges of Arrow weed scrub. Desert saltbrush scrub is co-dominated by two saltbush species (*Atriplex lentiformis* and *A. canescens*) as well as *Isocoma acradenia* var. *eremophila*. It also occurs as an early successional phase in some old fallow agricultural fields.

The public lands portion of the proposed routes is administered and managed by BLM, and current land use is devoted to natural resource conservation with mixed recreational use, including hunting, camping, four-wheel-drive vehicle operation, and wildlife viewing. This area is within the Yuha Desert Management Area as designated in the 2003 Flat-tailed Horned Lizard Rangewide Management Strategy (2003). Private lands are owned by various property owners who use their properties for agricultural cropland. IID also maintains a right-of-way in this area associated with canals and other water-conveyance-related structures.

Western Burrowing Owl Background Information

Regulatory Status

The BUOW is considered a species of special concern by CDFG due to intensive development pressure on the habitat of the species (CDFG 2009). The species is also covered under the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP), which has been adopted by IID.

Habitat Status

BUOW habitat consists of annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974; CBOC 1993). Suitable BUOW habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of BUOW habitat, and both natural and artificial burrows provide protection, shelter, and nests for BUOWs. BUOWs typically use burrows made by mammals such as ground squirrels or badgers, but also may use human-made structures such as cement culverts; riprap; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement. BUOWs may use a site for migratory stopovers, or year-round for breeding and foraging. Suitable habitat is considered occupied if there is an observation of at least one BUOW occupying a burrow there within the last 3 years, or BUOW sign, including molted feathers, cast pellets, prey remains, eggshell fragments, or feces, around a burrow. BUOWs tend to exhibit high site fidelity, reusing the same site year after year (Rich 1984; Feeney 1992).

Population Status

BUOWs in California are generally nonmigratory and occur mostly in the Central and Imperial Valleys, primarily in agricultural areas. Small, scattered populations occur in the Mojave Desert. Population density seems to be correlated with prey availability, particularly small mammals (Klute et al. 2003).

Imperial Valley accounts for 70 percent of California's entire burrowing owl population (Audubon California 2005). Western burrowing owls are common, year-round residents and breeders on the project site, and they are found along the areas planned for line routing; however, areas bordering agricultural fields are definitely preferred in the Imperial Valley. The Proposed Project and Alternative 1 have much lower chances of impacting burrowing owls because of this owl's preference for agricultural margins over open desert. Because Alternative 2 is primarily situated on the margins and canals of agricultural areas, impact to burrowing owls are likely.

Survey Methodology

The habitat assessment Phase I BUOW survey was conducted by EDAW biologists during previous detailed vegetation mapping and habitat assessment surveys in the project site and buffer zones.

Southern Nevada Environmental biologists (on behalf of EDAW) conducted Phase II BUOW surveys by walking through the entire project site and a 150-meter (500-foot) buffer zone using 100 percent visual coverage and north/south transects focusing on visual signs of BUOW (burrows, pellets, owl

splash, etc.). Distance between transects was no greater than 30 meters (100 feet). All data were recorded with a Global Positioning System (GPS) Garmin 60 CSx in UTM NAD 83, and is presented in Table 1. Phase II BUOW surveys were conducted according to the California Burrowing Owl Consortium BUOW Survey Protocol and Mitigation Guidelines (CBOC 1993).

Table 1
Waypoints, Sign, UTM NAD 83, and Notes of Potential BUOW Burrows and Sign

Waypoint	Type of Sign	Easting	Northing	Notes
Burrow01	Burrow	614218	3629034	Collapsed.
B02	Burrow	614179	3629077	Mammal burrow w/ rodent hole in back. No BUOW sign.
B03	Burrow	614761.5	3628044	No BUOW sign.
B04	Burrow	614751.9	3628026	No BUOW sign.
B05	Burrow	614754.1	3628020	No BUOW sign.
B06	Burrow	614738.3	3628102	No BUOW sign.
B07	Burrow	614689	3628152	No BUOW sign.
B08	Burrow	614611.9	3628148	Three burrows. No BUOW sign.
B09	Burrow	614594.3	3628132	Two burrows. No BUOW sign.
B10	Burrow	614589.6	3628137	Two burrows. No BUOW sign.
B11	Burrow	614606.5	3628122	Two burrows. No BUOW sign.
B12	Burrow	614632.8	3628128	No BUOW sign.
B13	Burrow	614670.2	3628167	No BUOW sign.
B14	Burrow	614541.2	3628260	No BUOW sign.
B15	Burrow	614973.7	3627693	BUOW 4; 15 feet south of perch on irrigation lever.
B16	Burrow	614973.2	3627705	BUOW 5; 30 feet north of perch.
B17	Burrow	614981.7	3627822	Feather, whitewash, pellets, bone fragments, coyote scat, beetle exoskeleton.
B18	Burrow	615349.2	3626347	No BUOW sign.
B19	Burrow	616946.8	3624851	Next to BUOW 7 perched on stake. Feathers, pellet, whitewash, beetle exoskeleton.
B20	Burrow	616949	3624813	Whitewash, exoskeletons, pellets, feathers, and perch site next to it on stake.
B21	Burrow	616980.4	3624671	Feathers, whitewash, other animal scat, exoskeletons, pellet, two burrows.
B22	Burrow	616833.6	3624826	Sinkhole on bank of channel w/ nesting material and splash.
B23	Burrow	615964.9	3625640	No BUOW sign.
B24	Burrow	620048.5	3621012	Eight burrows, kit fox scat. No BUOW sign.
B25	Burrow	617957.9	3622877	No BUOW sign.
BUOW01	Burrow	614502.3	3628223	Female, flew to satellite burrow, many burrows around.
BUOW02	Burrowing Owl	614867.8	3627907	Male, found perched on white post.
BUOW03	Burrowing Owl	614970.5	3627589	Male, perched on irrigation lever.
BUOW04	Burrowing Owl	614973.6	3627696	Male; B15.
BUOW05	Burrowing Owl	614986.4	3627806	Male, possible burrow 30 feet north of BUOW 4; B16.
BUOW06	Burrowing Owl	616948.1	3624812	Male, one pellet at perch site.
BUOW07	Burrowing Owl	616986.9	3624717	Male, perched on stake next to B19 and B20.

Waypoint	Type of Sign	Easting	Northing	Notes
BUOW08	Burrowing Owl	616986.2	3624762	Male, perched on irrigation lever.
BUOW09	Burrowing Owl	619609.4	3622298	Unknown sex, flushed and flew to haystack west of canal.
Perch 01	Perch	616000.3	3625767	Potential cough pellet and perch site.
P02	Perch	616956.8	3624320	Perch site with beetle exoskeletons and pellets.
P03	Perch	616988.9	3624781	Dirt mound with splash and pellet along field.
P04	Perch	616965.2	3624817	Stake with splash and pellet.
P05	Perch	616862.7	3624630	Straw bales with BUOW reoccurrence.
P06	Perch	620437.7	3621115	T-line pole w/ splash and cough pellet from large raptor.
P07	Perch	620703.4	3620693	T-line pole w/ splash and cough pellet from large raptor.
P08	Perch	617649.2	3623042	Wooden post w/ splash, scattered bones and disarticulated pellet from large raptor.
P09	Perch	616441.1	3623165	8-inch PVC pipe and T-post rebar w/ splash.
Cough pellet 01	Cough Pellet	614869.7	3627893	One BUOW cough pellet on white post.
CP02	Cough Pellet	616845.5	3625024	Cough pellet in open dirt field.

EDAW biologists Andrew Fisher and James McMorran conducted Phase III presence/absence surveys for BUOWs between July 6 and July 9, 2009. Andrew Fisher has 3 years of experience as a wildlife biologist in southern California, and regularly conducts habitat assessments and focused surveys for various wildlife species, including raptors, BUOW, and various federally threatened and endangered song birds. James McMorran has 5 years of experience as a wildlife biologist conducting avian surveys throughout the United States, primarily in the desert southwest.

BUOW surveys were performed according to the protocol established by the CBOC (1993) and accepted by CDFG. To locate BUOWs, surveyors drove established paved and dirt roads, stopping at observation points that provided a wide view, and scanned for owls and burrows with 10 x 42, and 8 x 42 power binoculars. Vehicles were used as blinds, when possible, to minimize disturbance to owls. If burrows with sign were not visible from established roads, surveyors approached the burrows on foot, carefully verifying presence or absence of BUOWs at the burrows. Burrows, perches, or other areas where BUOWs might live and forage were searched during each survey for new BUOW sign. All BUOW locations were mapped using GPS units.

Results

Table 1 describes any sign of BUOW that was detected within the proposed project site, and the locations of these resources are depicted in Figures 3a–d.

Each of the waypoints in Table 1 was visited four times on 4 consecutive days during Phase III BUOW protocol surveys (July 6 to 9, 2009) conducted by EDAW biologists. Table 2 describes the dates, pertinent survey information, and any BUOWs or new sign detected during the Phase III surveys. Copies of field data sheets are provided in Appendix A.

Table 2
Dates, Times, Personnel, Weather Conditions, and Observations for BUOW Phase III Surveys

Survey #	Date	Time	Personnel	Weather	Observations
1	07/06/2009	1800–2050	Andrew Fisher James McMorran	Start: 102°F, 0% clouds, wind E 7 mph End: 94°F, 0% clouds, wind E 1 mph	1 pair of BUOW plus 3 juv., 3 other BUOW; **Total 8 BUOW**
2	07/07/2009	1755–2027	Andrew Fisher James McMorran	Start: 104°F, 0% clouds, wind W 1–3 mph End: 94°F, 0% clouds, wind W 5–7 mph	1 group of 3 BUOW, 1 group of 7 BUOW (includes 1 pair and some juv.); **Total 10 BUOW**
3	07/08/2009	1754–2010	Andrew Fisher James McMorran	Start: 106°F, 2% clouds, wind W 7 mph End: 94°F, 2% clouds, wind W 6 mph	1 pair and 4 juv. BUOW, 1 pair and 3 juv. BUOW, 2 adult BUOW at other locations; **Total 13 BUOW**
4	07/09/2009	0500–0802	Andrew Fisher James McMorran	Start: 84°F, 0% clouds, wind W 4.5 mph End: 87°F, 0% clouds, wind SE 1–4 mph	8 BUOW in one area (includes 1 pair and a few juv), 11 BUOW in another area (includes 1 pair with a few juv), 2 adult BUOW at other locations; **Total 21 BUOW**

As Table 2 indicates, detectability and numbers of BUOW increased as surveys were conducted. Of the four surveys, the first three were conducted during the evening hours (2 hours before sunset to 1 hour after sunset), and the final survey was conducted during the morning hours (1 hour before sunrise to 2 hours after sunrise). Once the first two surveys were completed, it was clear where the BUOW detections were likely to be concentrated. All BUOW detections were from areas along agricultural ditches and canals, with the exception of two individuals detected during surveys 3 and 4 (waypoints B3 and B10), which were detected within the open desert (Figure 3a). There were two main concentrations of BUOW that consisted of possibly two family groups and unpaired or dispersed adults. The family groups seemed to have had two successful clutches with noticeably very young juveniles usually in close proximately to one another, and older juveniles dispersed within the same general area. Various detections were scattered outside of these areas. As shown in Table 2, during Survey 4, the total numbers of detections increased dramatically. It seems that the morning survey was more conducive for getting a better representation of the numbers of BUOW actually within the area. Perhaps the owls are more active in the morning hours, as temperatures are cooler and the young have not retreated to their burrows after hunting throughout the night. The locations of all detections and resources of possible BUOW sign are depicted in Figures 3a–d.

Discussion

Given that portions of the proposed project site lie within open desert bounded by active agricultural fields and irrigation canals and ditches, detecting numerous BUOWs was expected. As previously mentioned, Imperial Valley accounts for 70 percent of California's entire BUOW population, and factoring in that they are year-round residents and breeders, the likeliness of BUOW presence within the project site was high. As can be seen in the information presented in the results section of this report and depicted in Figures 3a–d, it is clear that BUOW prefer to inhabit burrows immediately next to

irrigation canals and ditches or in close proximity to them. This can be attributed to the influx of rodents and insects that occupy agricultural lands and waterways compared to those in the open desert. In addition to the food supply, the attraction of using burrows beneath or near water or concrete-lined irrigation canals in the midst of exceedingly hot weather conditions likely plays a big roll. With these surveys being focused on the breeding season, it is unknown how these owls utilize the project site and how they may disperse once the breeding season is complete. In addition, the two BUOWs detected at burrows in the open desert may in fact have been post-breeding-season dispersers and scouting out their wintering burrows. With this in mind, the winter season may have an entirely different outcome for the locations of BUOW throughout the project site.

Two sensitive wildlife species (other than BUOW) were observed during BUOW surveys in the project site: the loggerhead shrike (*Lanius ludovicianus*, CDFG species of special concern) and northern harrier (*Circus cyaneus*, CDFG species of special concern). These two sensitive bird species detections were mapped and displayed in Figure 4. All other wildlife species detected during BUOW surveys are listed in Appendix B.

Certification Statement

Qualified EDAW biologists who conducted BUOW surveys for the ID 230-kV Transmission Line and Substation Expansion project certify that the information in this survey report fully and accurately represents the work performed by EDAW biologists. Signatures of EDAW biologists (Andrew Fisher and James McMorran) who conducted protocol surveys are included below. The results of focused surveys for listed species are typically considered valid for 1 year by the resource agencies. If you have any questions or require additional information, feel free to contact me at (619) 233-1454.

Sincerely,

Andrew Fisher
Wildlife Biologist

James McMorran
Wildlife Biologist

Attachments:
Figure 1 – Regional Map
Figure 2a – Vicinity Map (Topography)
Figure 2b – Vicinity Map (Aerial)
Figure 3a – BUOW Resources and Observations
Figure 3b – BUOW Resources and Observations
Figure 3c – BUOW Resources and Observations
Figure 3d – BUOW Resources and Observations
Figure 4 – Other Sensitive Wildlife Species Detected
Appendix A – Field Data Sheets
Appendix B – Wildlife Species Detected during BUOW Surveys
Appendix C – Burrowing Owl Survey Photographs

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FIGURES

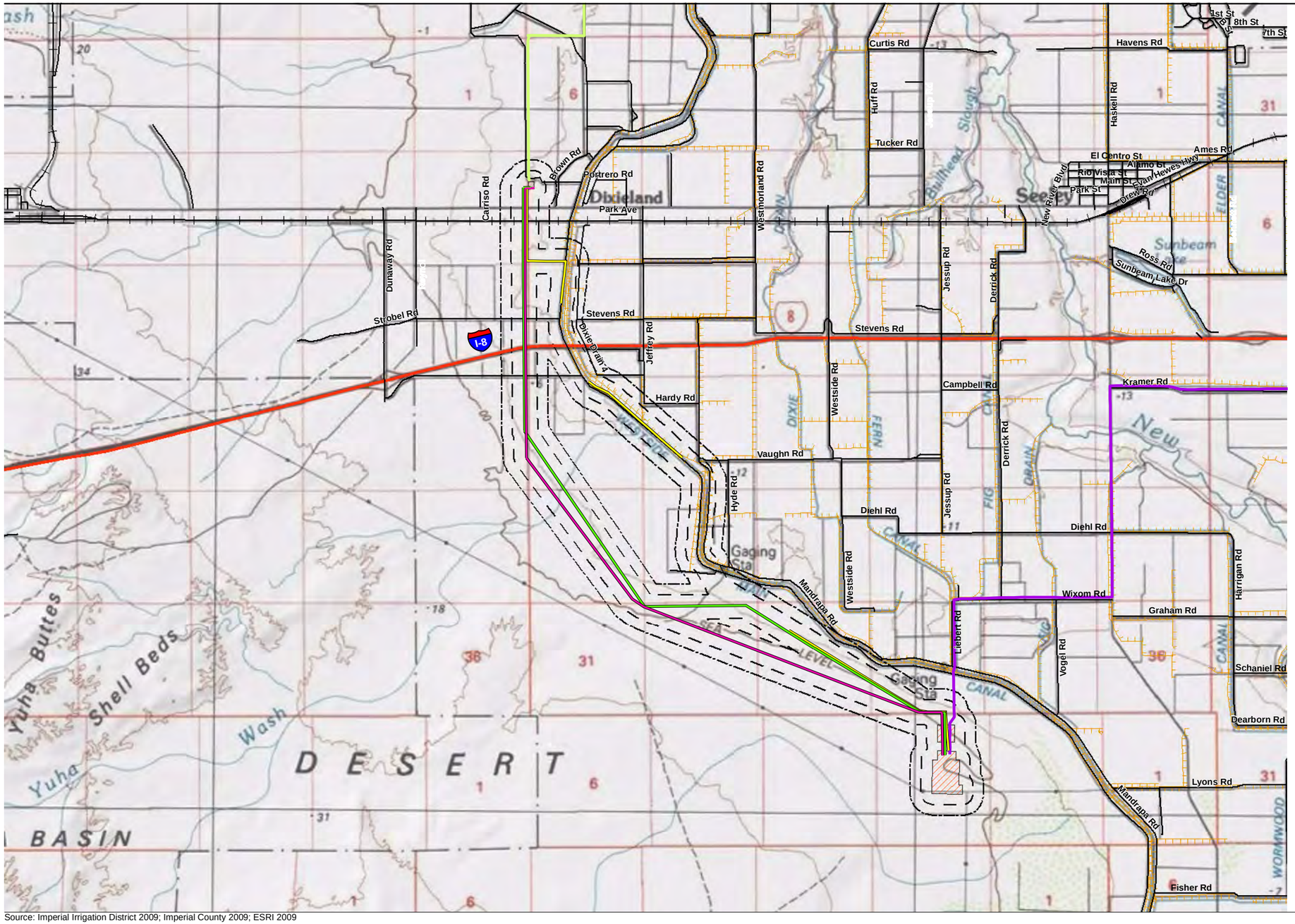
Source: Imperial Irrigation District 2009; ESRI 2009

20 10 0 20 Miles

Scale: 1 = 1,266,786.8; 1 inch = 20 mile(s)

Figure 1

Regional Map



LEGEND

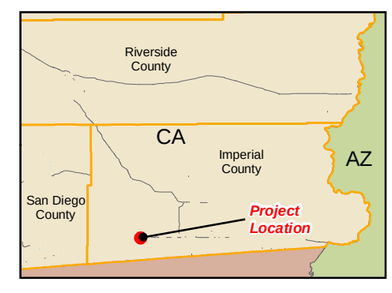
Transmission Line

Existing

- R-Line
- S- Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- BUOW Survey Area Buffer - 500 ft
- Survey Area Buffer - 1000 ft
- Canal
- Highways



Source: Imperial Irrigation District 2009; Imperial County 2009; ESRI 2009

5,000 2,500 0 5,000 Feet

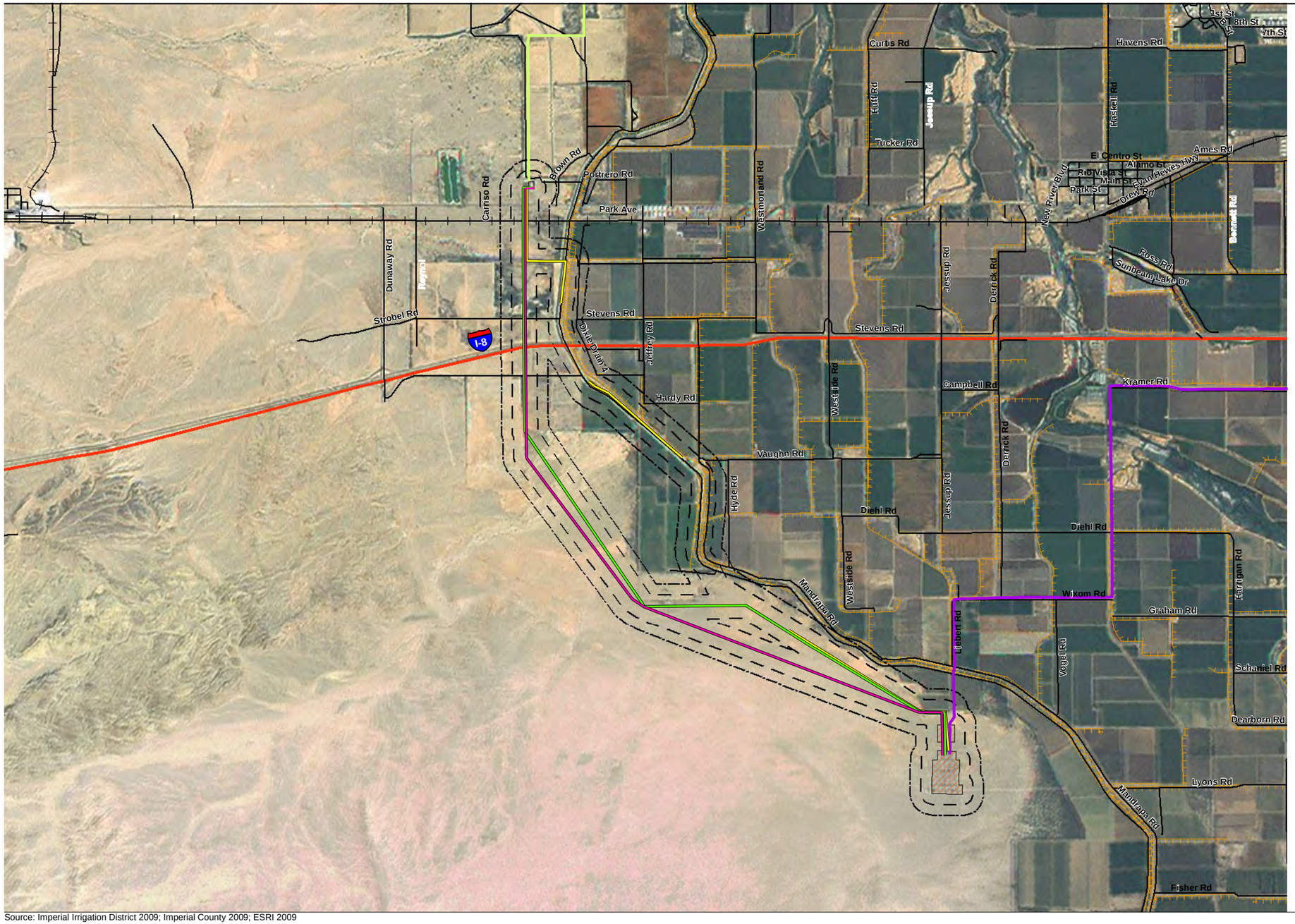
Scale: 1 = 60,000; 1 inch = 5,000 feet

Figure 2a

Vicinity Map

ID Line - Imperial Valley to Dixieland 230 kV Transmission Line Burrowing Owl Survey Report

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BUOW_Report\BUOW_Rpt_20090728\Fig2a_BUOW_Vicinity_Topo.mxd, 07/28/09, ShahS2



LEGEND

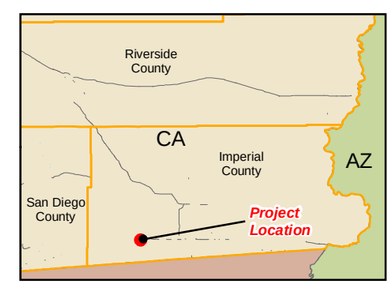
Transmission Line

Existing

- R-Line
- S- Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- BUOW Survey Area Buffer - 500 ft
- Survey Area Buffer - 1000 ft
- Canal
- Highways



Source: Imperial Irrigation District 2009; Imperial County 2009; ESRI 2009

5,000 2,500 0 5,000 Feet

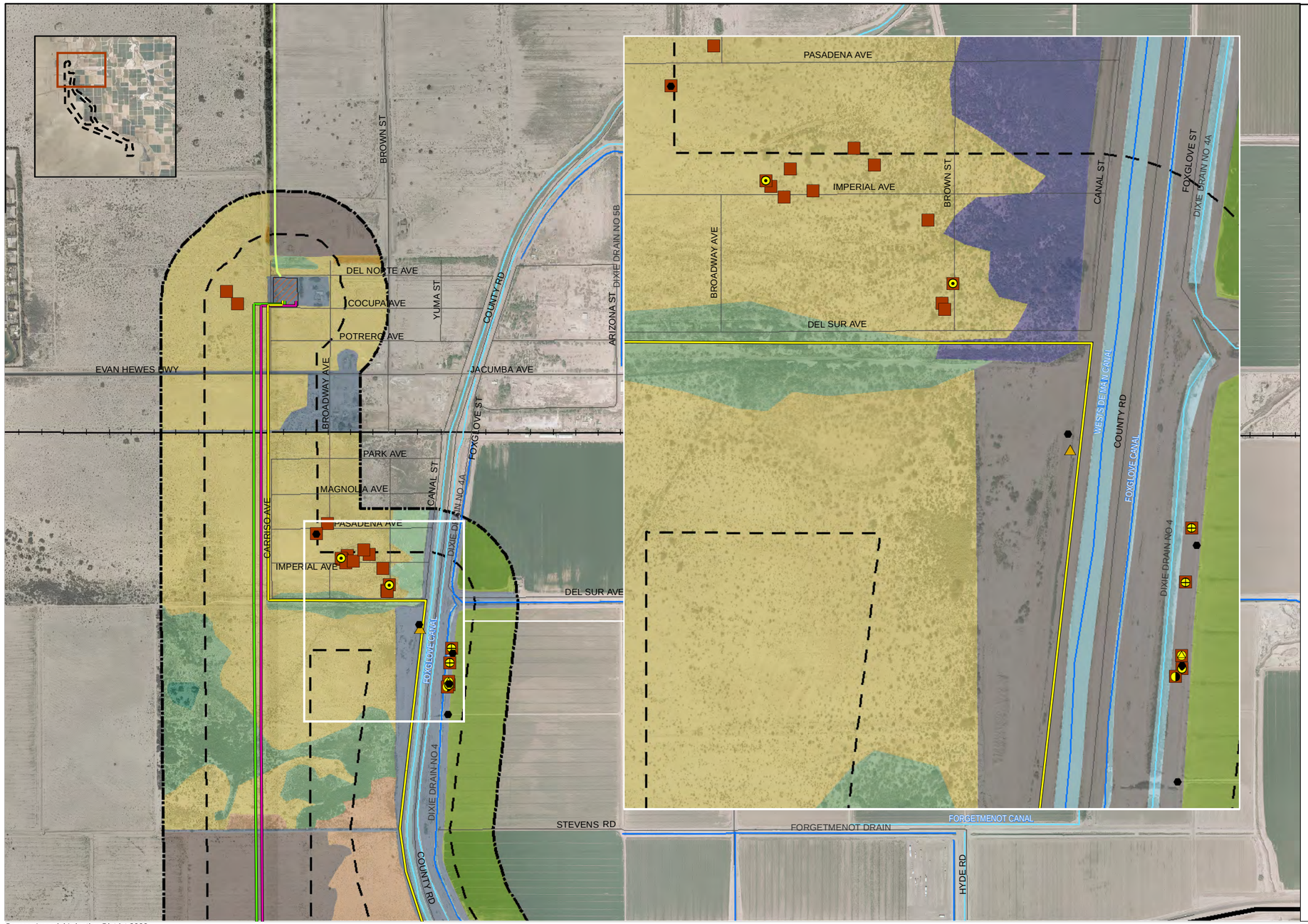
Scale: 1 = 60,000; 1 inch = 5,000 feet

Figure 2b

Vicinity Map

ID Line - Imperial Valley to Dixieland 230 kV Transmission Line Burrowing Owl Survey Report

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BUOW_Report\BUOW_Rpt_20090728\Fig2_BUOW_Vicinity.mxd, 07/28/09, ShahS2



Source: Imperial Irrigation District 2009

1,250 625 0 1,250 Feet

Scale: 1 = 15,000; 1 inch = 1,250 feet

LEGEND

Transmission Line

Existing

- R-Line
- S-Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- Canals
- Drains
- Streets/Roads
- RailRoad
- BUOW Survey Area Buffer - 500 ft
- Survey Area Buffer - 1000 ft

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Eucalyptus Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Burrowing Owl Resources

- Burrow
- Cough Pellet
- Pellet
- Perch

Burrowing Owl, Phase II

- 1 Burrowing Owl

Burrowing Owl, Phase III

- 1 Burrowing Owl
- 2 Burrowing Owls
- 3 Burrowing Owls
- 4 Burrowing Owls
- 6 Burrowing Owls
- Fresh Sign, No Burrowing Owl present

Figure 3a
Burrowing Owl Resources and Observations

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BUOW_Report\BUOW_Rpt_20090728\Fig3a_BUOW_Resources.mxd, 07/28/09, ShahS2

LEGEND

Transmission Line

Existing

- R-Line
- S-Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- Canals
- Drains
- Streets/Roads
- RailRoad
- BUOW Survey Area Buffer - 500 ft
- Survey Area Buffer - 1000 ft

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Eucalyptus Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Burrowing Owl Resources

- Burrow
- Cough Pellet
- Pellet
- Perch

Burrowing Owl, Phase II

- 1 Burrowing Owl

Burrowing Owl, Phase III

- 1 Burrowing Owl
- 2 Burrowing Owls
- 3 Burrowing Owls
- 4 Burrowing Owls
- 6 Burrowing Owls
- Fresh Sign, No Burrowing Owl present

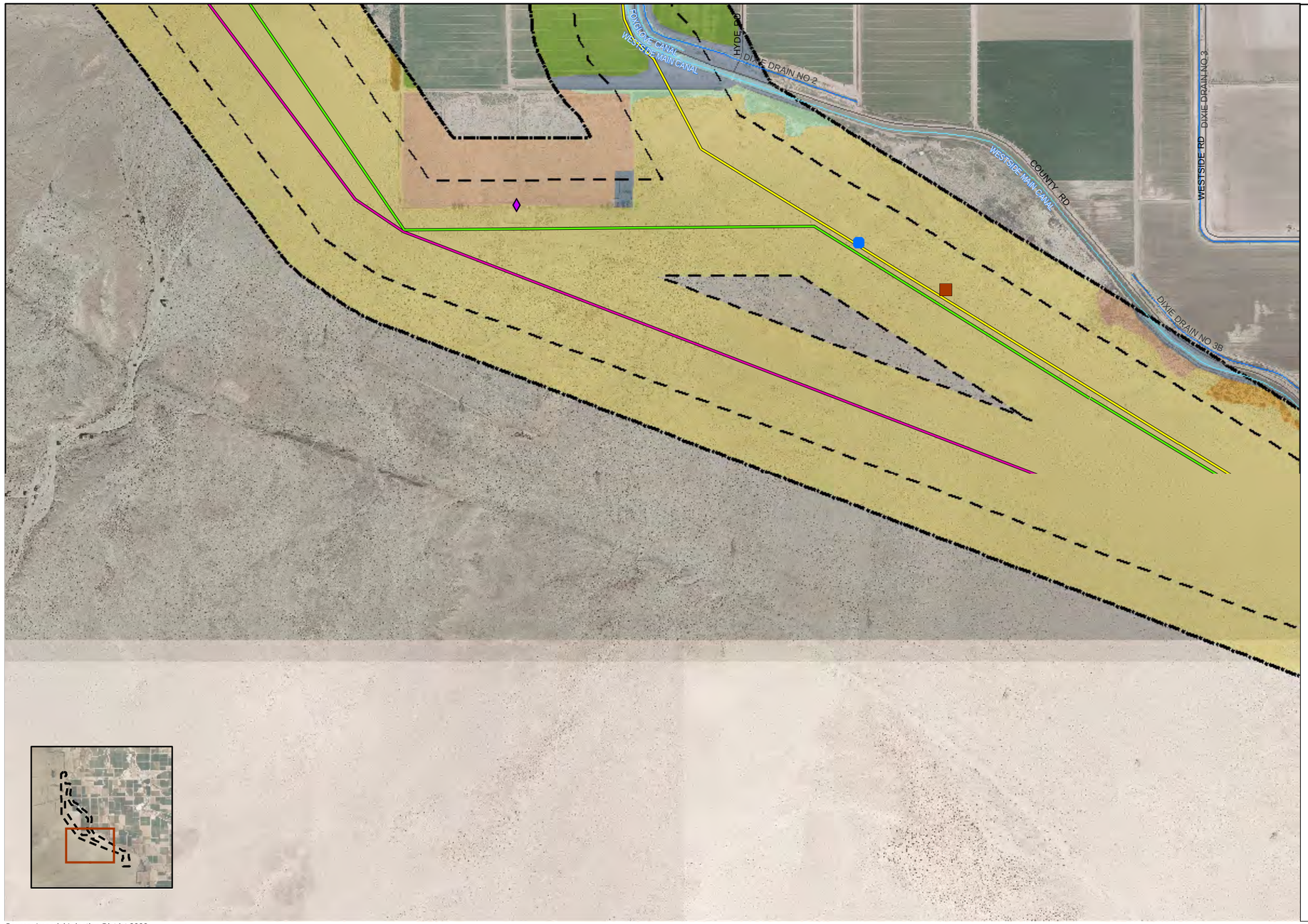
Source: Imperial Irrigation District 2009

1,250 625 0 1,250 Feet

Scale: 1 = 15,000; 1 inch = 1,250 feet

Figure 3b
Burrowing Owl Resources and Observations

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BUOW_Report\BUOW_Rpt_20090728\Fig3b_BUOW_Resources.mxd, 07/28/09, ShahS2



LEGEND

Transmission Line

Existing

- R-Line
- S-Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- Canals
- Drains
- Streets/Roads
- RailRoad
- BUOW Survey Area Buffer - 500 ft
- Survey Area Buffer - 1000 ft

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Eucalyptus Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Burrowing Owl Resources

- Burrow
- Cough Pellet
- Pellet
- Perch

Burrowing Owl, Phase II

- 1 Burrowing Owl

Burrowing Owl, Phase III

- 1 Burrowing Owl
- 2 Burrowing Owls
- 3 Burrowing Owls
- 4 Burrowing Owls
- 6 Burrowing Owls
- Fresh Sign, No Burrowing Owl present

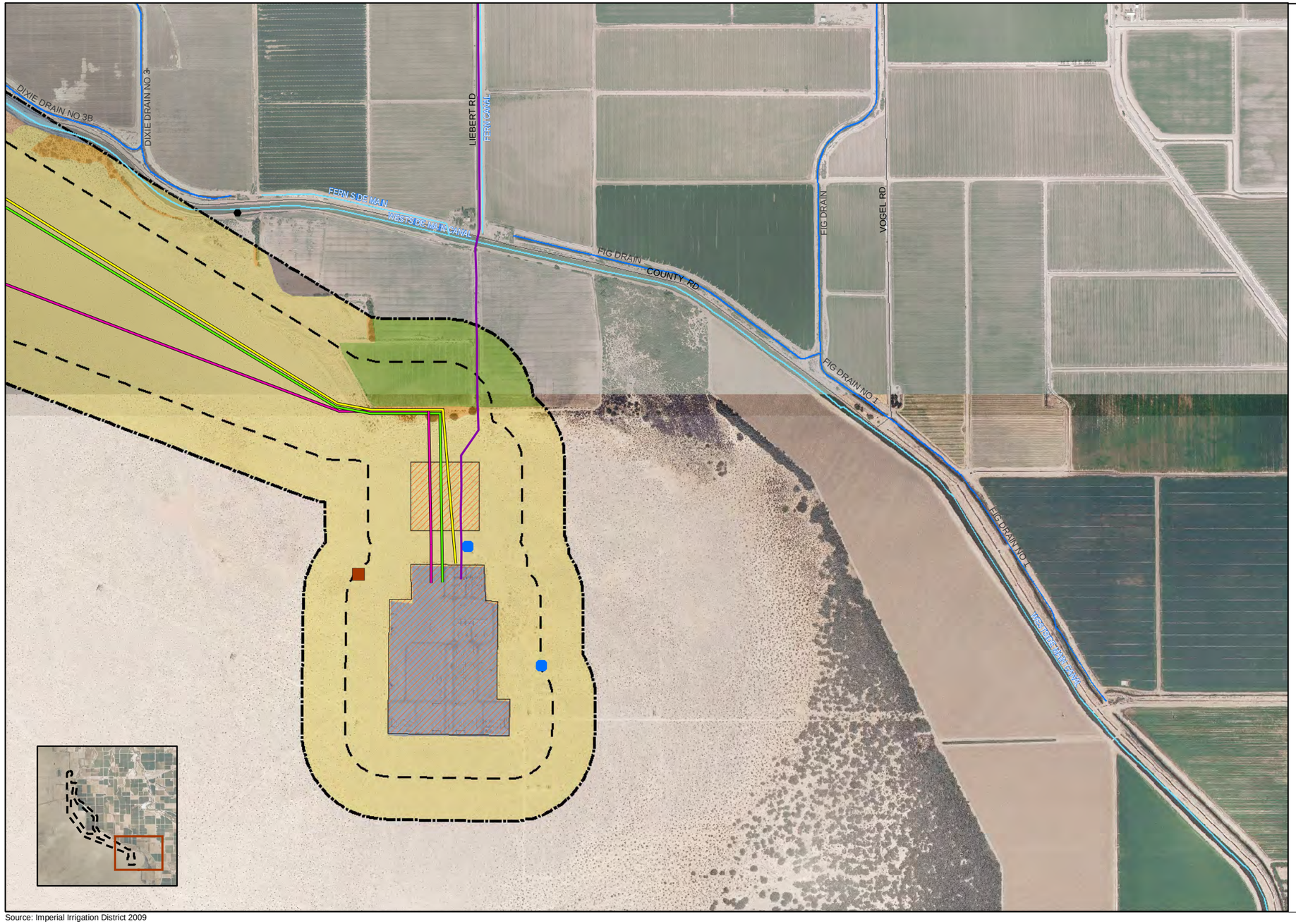
Source: Imperial Irrigation District 2009

1,250 625 0 1,250 Feet

Scale: 1 = 15,000; 1 inch = 1,250 feet

Figure 3c
Burrowing Owl Resources and Observations

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BUOW_Report\BUOW_Rpt_20090728\Fig3c_BUOW_Resources.mxd, 07/29/09, ShahS2



LEGEND

Transmission Line

Existing

- R-Line
- S-Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- Canals
- Drains
- Streets/Roads
- RailRoad
- BUOW Survey Area Buffer - 500 ft
- Survey Area Buffer - 1000 ft

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Eucalyptus Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Burrowing Owl Resources

- Burrow
- Cough Pellet
- Pellet
- Perch

Burrowing Owl, Phase II

- 1 Burrowing Owl

Burrowing Owl, Phase III

- 1 Burrowing Owl
- 2 Burrowing Owls
- 3 Burrowing Owls
- 4 Burrowing Owls
- 6 Burrowing Owls
- Fresh Sign, No Burrowing Owl present

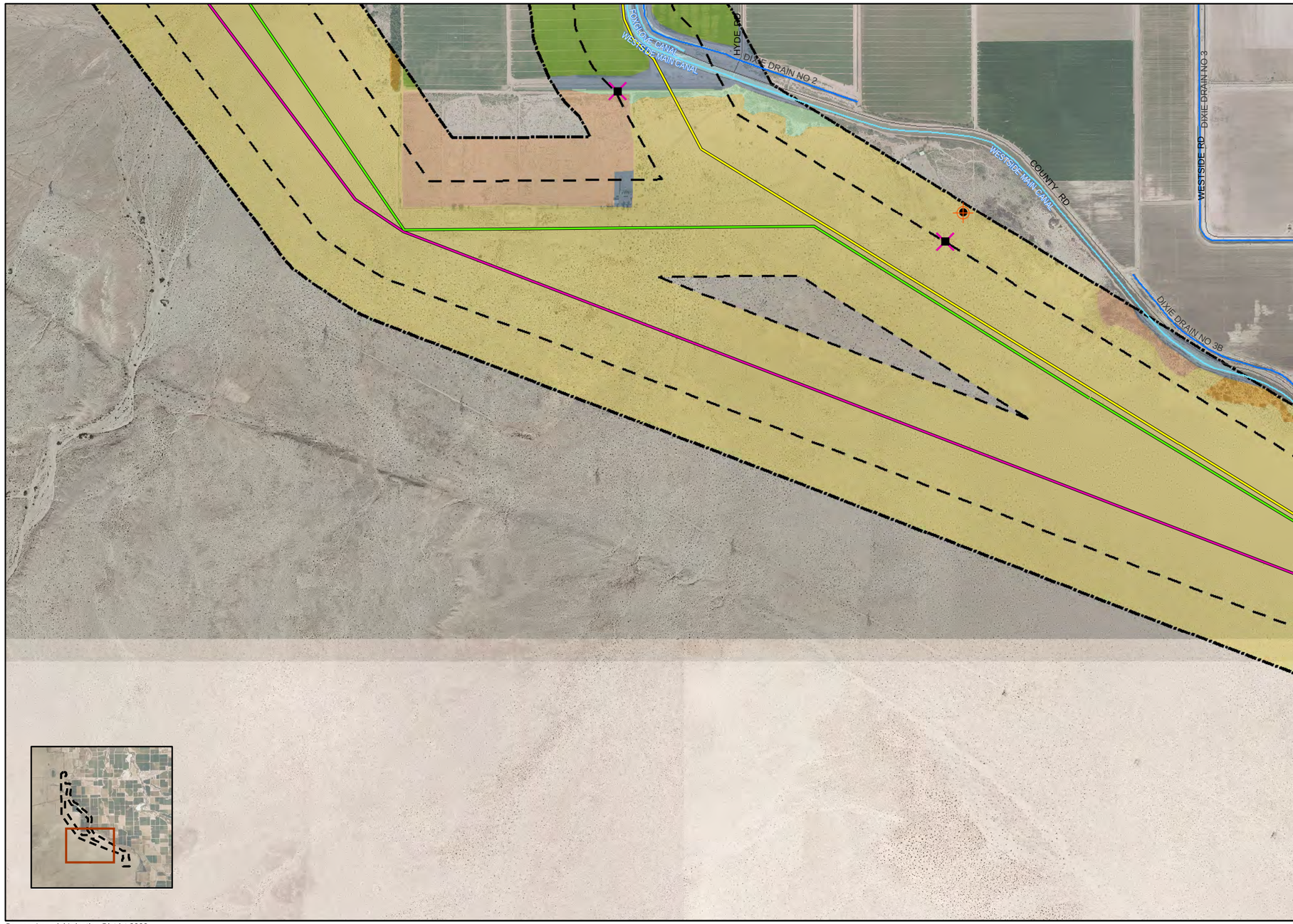
Source: Imperial Irrigation District 2009

1,250 625 0 1,250 Feet

Scale: 1 = 15,000; 1 inch = 1,250 feet

Figure 3d
Burrowing Owl Resources and Observations

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\BUOW_Report\BUOW_Rpt_20090728\Fig3d_BUOW_Resources.mxd, 07/28/09, ShahS2



LEGEND

Transmission Line

Existing

- R-Line
- S-Line

Proposed

- ID Line Alternative 1
- ID Line Alternative 2
- ID Line Proposed
- Substation
- Canals
- Drains
- Streets/Roads
- RailRoad
- BUOW Survey Area Buffer - 500 ft
- Survey Area Buffer - 1000 ft

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Eucalyptus Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

Other Sensitive Wildlife Species

- Loggerhead Shrike
- Northern Harrier

Source: Imperial Irrigation District 2009

1,250 625 0 1,250 Feet

Scale: 1 = 15,000; 1 inch = 1,250 feet

Figure 4
Other Sensitive Wildlife Species Detected

APPENDIX A

FIELD DATA SHEETS

Burrowing Owl (BW) Survey

Recorder: AFI
Project: IID Dixieline
GPS Unit: GTF4
START Time: 1800
END Time: 2050

Add'l Person: JMC
Survey Sxn: All
Survey Type: BUOW
Temp (F°): 102°F Wind/Dir: 7 mph E % CC/Pcp: 0%
Temp (F°): 94 Wind/Dir: 1 mph E % CC/Pcp: 0%

Date: 7-6-09
Map #: All
Survey 1 of 4

Burrow Number	BW Presence	BW Sign Presence[1] (circle)	Observations (note Burrow Condition, or note BW-# activity)
P07	none	W P T B S Other	edge of Raptor wash – tall steel power pole
P06	none	W P T B S Other	" " " " " " "
B24	none	W P T B S Other	tab fox complex – no new sign
BUOW9	no owl	W P T B S Other	
D025		W P T B S Other	burrow – no BUOW sign
P08	none	W P T B S Other	pole w/ white wash.
	NOHA 01	W P T B S Other	IDAFNH01 – foraging ind. in GPS
P09	none	W P T B S Other	perch – no fresh sign
P02	none	W P T B S Other	no new sign
B21		W P T B S Other	
D05	none	W P T B S Other	
	BUOW 1	W P T B S Other	1 Pair w/ Young @ Burrow 20 in Area.
	2	W P T B S Other	
	3	W P T B S Other	
	4	W P T B S Other	
	5	W P T B S Other	
CP02	no BUOW	W P T B S Other	
B19		W P T B S Other	1 BUOW flushed from here.
B20	Owl (owl post)	W P T B S Other	
B22	no BUOW	W P T B S Other	no new sign
B23	" "	W P T B S Other	Sidewinder in hole
P01	" "	W P T B S Other	
B18		W P T B S Other	
CP01	no BUOW	W P T B S Other	
B03	No new sign	W P T B S Other	
B04		W P T B S Other	
B5		W P T B S Other	
B6		W P T B S Other	
B7		W P T B S Other	
B13		W P T B S Other	
B12		W P T B S Other	
B8		W P T B S Other	
B9		W P T B S Other	
B10		W P T B S Other	
B11		W P T B S Other	
B14		W P T B S Other	
BUOW01		W P T B S Other	downy feathers – no BUOW
B01	no new sign	W P T B S Other	
B02	" " "	W P T B S Other	

Comments

PRFA, CREG, MOQD, GRPO, AMKE, WEME, CLSW, BTGN, RT grd sq. NOHA, LOSH, RTJ rabbit, RTHA, HOLA, ABTO, GBHE, SAPH, BCNW, GTGN, RWBB, GRHE, SOSP, BUDIT, WERI, CENI, GAQW, GHSW, Striped Skunk.

[1]BW Sign =W-Whitewash, P-Pellets, T- BW Tracks, B- Bones (from degraded pellets), S-Sticks

Burrowing Owl (BW) Survey - Other Species Observations

Recorder: AFI
Project: ~~Harper Lake~~

Add'l Person: JMC
Survey Sxn:

Date: 7-6-09
Map #:

Species Abb.	Observations
	B17 & BUOWS hard to see; flushed & possible BUOW
	B15 & 16 — getting dark — no birds flushed
	B18 — dark — no BUOW flushed

Comments

Burrowing Owl (BW) Survey

Recorder: JMC
Project: HD PIXELINE
GPS Unit: GPS 4
START Time: 0545
END Time: 0827

Add'l Person: AFI
Survey Sxn: ALL
Survey Type: BUOW
Temp (F°): 104 Wind/Dir: 1-3 % CC/Pcp: 0
Temp (F°): 94 Wind/Dir: 5-7 gust 12 % CC/Pcp:

Date: 7/7/09
Map #: ALL
Survey 2 of 4

Burrow Number	BW Presence	BW Sign Presence[1] (circle)	Observations (note Burrow Condition, or note BW-# activity)
B02		W P T B S Other	No new sign / shallow depth ~2' / narrows
B01		W P T B S Other	No new sign / shallow depth ~2
B17	ACTIVE	W P T B S Other	Active; feathers, whitewash
BUOW05	Vis obs.	W P T B S Other	ACTIVE, whitewash, scat, feathers; small snake + reptile
B15	ACTIVE	W P T B S Other	owl flushed from burrow
B16	ACTIVE	W P T B S Other	feathers, whitewash, sticks
BUOW04	Vis. obs.	W P T B S Other	
IDB01		W P T B S Other	Culvert underneath irrigation ditch w/pellet + scat
→ Possibly Two Pairs?		W P T B S Other	
BUOW	Vis obs	W P T B S Other	
B18		W P T B S Other	No new sign
P01		W P T B S Other	nothing detected
CP02		W P T B S Other	No new sign
P04		W P T B S Other	No new sign
B19		W P T B S Other	No new sign
B20		W P T B S Other	IMM likely flew from B20; up to 4 within vicinity of B20
		W P T B S Other	Crayfish, small reptile bones etc. very active.
P03		W P T B S Other	No owl
B21		W P T B S Other	— from P04–B21 · Maybe 2 pairs up to 4 IMM.
		W P T B S Other	
P02		W P T B S Other	No BUOW; no new sign
P05		W P T B S Other	No BUOW; no new sign
P06		W P T B S Other	No new activity; no BUOW
P07		W P T B S Other	no new activity
B24		W P T B S Other	No new sign
BUOW09		W P T B S Other	No BUOW
P08		W P T B S Other	No new sign
B25		W P T B S Other	~~No~~ no new sign
P09		W P T B S Other	No BUOW / no new sign
B22		W P T B S Other	No new sign
B23		W P T B S Other	No new sign - Sidewinder in Burrow
BUOW2		W P T B S Other	No BUOW
CP01		W P T B S Other	No new sign
B13		W P T B S Other	No new sign
B07		W P T B S Other	No new sign
B06		W P T B S Other	No new sign
B05		W P T B S Other	No new sign
B04		W P T B S Other	No new sign
B03		W P T B S Other	No new sign

up to 3 BUOW observed

up to 7 BUOW in area

Comments

* new active burrow = IDB01

KILL, HOLA, GTGR, EUCD, WWSO, RWBL, BUOW, CAEG, CLSW, ABTO, HOFI, COPA
LOSH, LEAU

Bullfrog

[1]BW Sign =W-Whitewash, P-Pellets, T- BW Tracks, B- Bones (from degraded pellets), S-Sticks

Burrowing Owl (BW) Survey - Other Species Observations

Recorder: JMC
Add'l Person: AKI
Date: 7/7/09
Project: ~~Harper Lake~~ IID Dixie Line
Survey Sxn: ALL
Map #: ALL

Species Abb.	Observations
B8	no new sign
B9	
B10	
B11	
B14	no new sign
BUOWO1	- Two sidewinders at burrows

Comments

Burrowing Owl (BW) Survey

Recorder: AFI
Project: IID Dixieline
GPS Unit:
START Time: 1735
END Time: 2010

Add'l Person: JMC
Survey Sxn: All
Survey Type: BUOW
Temp (F°): 100°F Wind/Dir: 7mph W % CC/Pcp: 2%
Temp (F°): 94°F Wind/Dir: 10mph % CC/Pcp: 2%

Date: 7-8-09
Map #:
Survey 3 of 4

Burrow Number	BW Presence	BW Sign Presence[1] (circle)	Observations (note Burrow Condition, or note BW-# activity)
B01	No new sign	W P T B S Other	
B02	" " "	W P T B S Other	
B17	" " "	W P T B S Other	
B15	1 BUOW	W P T B S Other	1 BUOW flushes
~~B16~~		W P T B S Other	(3 BUOW around here
IDB01	2 BUOW	W P T B S Other	2 BUOW flushes nearby - 1 juv } 1 pair & young 6 BUOW TOTAL
B16	No new sign	W P T B S Other	
IDB02	3 BUOW	(W) P T B S Other	Feathers
		W P T B S Other	
B18	No new sign	W P T B S Other	
P01	" " "	W P T B S Other	
GP02	No BUOW	W P T B S Other	
B19	1 BUOW	W P T B S Other	Juv. - Young.
B20	2 BUOW	W P T B S Other	2 Juv. - 2 A. } Same family grp.
B21	1 BUOW	W P T B S Other	A (♂). - Humans/Farmers walking by.
P02	No BUOW	W P T B S Other	
P05	No BUOW	W P T B S Other	
P06	No new sign	W P T B S Other	
P07	" " "	W P T B S Other	
B24	" " "	W P T B S Other	
P08	" " "	W P T B S Other	
B25	" " "	W P T B S Other	
P09	" " "	W P T B S Other	
B22	" " "	W P T B S Other	
B23	S(DEW) inside	W P T B S Other	
B03	1 BUOW	W P T B S Other	+ Tracks (Possibly a Juv).
B14	No new sign	W P T B S Other	
B13		W P T B S Other	
B12		W P T B S Other	
B11		W P T B S Other	
B10		W P T B S Other	
B9		W P T B S Other	
B8		W P T B S Other	
B7		W P T B S Other	
B6		W P T B S Other	
B5		W P T B S Other	
B4		W P T B S Other	
BUOW01		W P T B S Other	Found old Pellets + feathers + Scat of BUOW
		W P T B S Other	

6 BUOW using these

1 pair

1 Pair

Comments

[1]BW Sign =W-Whitewash, P-Pellets, T- BW Tracks, B- Bones (from degraded pellets), S-Sticks

Burrowing Owl (BW) Survey

Recorder: AFI
Project: ID Dixieline
GPS Unit:
START Time: 0500
END Time: 0802

Add'l Person: Jon C
Survey Sxn: All
Survey Type: BNOW
Temp (F°): 84°F Wind/Dir: 4.5 mph SW % CC/Pcp: 0
Temp (F°): 87°F Wind/Dir: ~~[illegible]~~ 1-4 SE % CC/Pcp: 0

Date: 7-9-09
Map #:
Survey 4 of 4

Burrow Number	BW Presence	BW Sign Presence[1] (circle)	Observations (note Burrow Condition, or note BW-# activity)
B01		W P T B S Other	No new sign
B02		W P T B S Other	No new sign
B17	4	W P T B S Other	up to 8 Buows around the areas
B15/B16	~~4~~	W P T B S Other	from ~~B15 B17~~
~~B16~~		W P T B S Other	
ID BUOW02	4	W P T B S Other	
B18		W P T B S Other	No new sign
P01		W P T B S Other	
CP02		W P T B S Other	No new sign
B19	6	W P T B S Other	4 imm; 6 TOTAL BUOW
B20	4	W P T B S Other	4 BUOW
P03	~~1~~	W P T B S Other	No BUOW
B21	1	W P T B S Other	1 ~~imm~~ ADULT BUOW
P02		W P T B S Other	~~No BUOW~~ No new sign
P06		W P T B S Other	No new sign
P07		W P T B S Other	no new sign
B24		W P T B S Other	no new sign
B25		W P T B S Other	no new sign
P08		W P T B S Other	no new sign
~~B25~~ P09		W P T B S Other	no new sign
~~P09~~		W P T B S Other	no new sign / no BUOW
P05		W P T B S Other	no ~~new~~ sign that its BUOW burrow, shallows
B22		W P T B S Other	no new sign
B23		W P T B S Other	no new sign
CP01		W P T B S Other	no new sign
B03	1 BUOW	W P T B S Other	Tracks - smoked BUOW
B10	1 BUOW	(W) P T B S Other	A BUOW flew to BUOW 01 + feather
B4	No New Sign	W P T B S Other	
B5		W P T B S Other	
B6		W P T B S Other	
B7		W P T B S Other	
B8		W P T B S Other	
B9		W P T B S Other	
B11		W P T B S Other	
B12		W P T B S Other	
B13		W P T B S Other	
B14		W P T B S Other	
BUOW01	1 BUOW flew	W P T B S Other	
	from B10	W P T B S Other	

Comments

*RSHA, BLGR

COYOTE

[1]BW Sign =W-Whitewash, P-Pellets, T- BW Tracks, B- Bones (from degraded pellets), S-Sticks

APPENDIX B

WILDLIFE SPECIES DETECTED DURING BURROWING OWL SURVEYS

APPENDIX B

Wildlife Species Detected During Burrowing Owl Surveys

	Scientific Name	Common Name
INVERTEBRATES		
Order Hymenoptera		**Insects**
	Family Formicidae	
	Pogonomyrmex barbatus	harvester ant
REPTILES and AMPHIBIANS		
Order Anura (salientia)		**Frogs and Toads**
	Rana catesbeiana	bullfrog
Order Squamata		**Lizards and Snakes**
	Family Viperidae	
	Crotalus cerastes	sidewinder
BIRDS		
Order Galliformes		**Magapodes, Curassows, Pheasants, and Relatives**
	Family Odontophoridae	
	Callipepla gambelii	Gambel's quail
Order Ciconiiformes		**Herons, Storks, Ibises, and Relatives**
	Family Ardeidae	
	Butorides striatus	green heron
	Bubulcus ibis	cattle egret
	Ardea herodias	great blue heron
Order Falconiformes		**Vultures, Hawks, and Falcons**
	Family Accipitridae	
	Circus cyaneus	northern harrier
	Buteo lineatus	red-shouldered hawk
	Buteo jamaicensis	red-tailed hawk
	Family Falconidae	
	Falco sparverius	American kestrel
	Falco mexicanus	prairie falcon (overhead)
Order Charadriiformes		**Shorebirds, Gulls, and Relatives**
	Family Charadriidae	
	Charadrius vociferus	killdeer
Order Columbiformes		**Pigeons and Doves**
	Family Columbidae	
	Zenaida macroura	mourning dove
	Streptopelia decaocto	Eurasian collared-dove
	Zenaida asiatica	white-winged dove
	Columbina passerina	common ground-dove
Order Cuculiformes		**Cuckoos and Relatives**
	Family Cuculidae	
	Geococcyx californianus	greater roadrunner
Order Strigiformes		**Owls**
	Family Strigidae	
	Bubo virginianus	great horned owl
	Athene cunicularia	burrowing owl
Order Caprimulgiformes		**Goatsuckers and Relatives**
	Family Caprimulgidae	
	Chordeiles acutipennis	lesser nighthawk
Order Passeriformes		**Song birds**
	Family Tyrannidae	
	Sayornis saya	Say's phoebe
	Sayornis nigricans	black phoebe
	Tyrannus verticalis	western kingbird
	Family Laniidae	
	Lanus ludovicianus[1]	loggerhead shrike

	Scientific Name	Common Name
	Family Corvidae	
	Corvus corax	common raven
	Family Alaudidae	
	Eremophila alpestris	horned lark
	Family Hirundinidae	
	Petrochelidon pyrrhonota	cliff swallow (overhead)
	Family Polioptilidae	
	Polioptila melanura	black-tailed gnatcatcher
	Family Emberizidae	
	Pipilo aberti	Abert's towhee
	Melospiza melodia	song sparrow
	Family Cardinalidae	
	Guiraca caerulea	blue grosbeak
	Family Icteridae	
	Sturnella neglecta	western meadowlark
	Agelaius phoeniceus	red-winged blackbird
	Quiscalus mexicanus	great-tailed grackle
	Family Fringillidae	
	Carpodacus mexicanus	house finch
MAMMALS		
Order Lagomorpha		**Rabbits, Hares, and Pikas**
	Family Leporidae	
	Lepus californica	black-tailed jackrabbit
Order Rodentia		**Rodents**
	Family Heteromyidae	
	Spermophilus tereticaudus	round-tailed ground squirrel
Order Carnivora		**Carnivores**
	Family Canidae	
	Canis latrans	coyote
	Family Mustelidae	
	Mephitis mephitis	striped skunk

[1] State Species of Special Concern
(CDFG 2009)

APPENDIX C

WESTERN BURROWING OWL SURVEY PHOTOGRAPHS

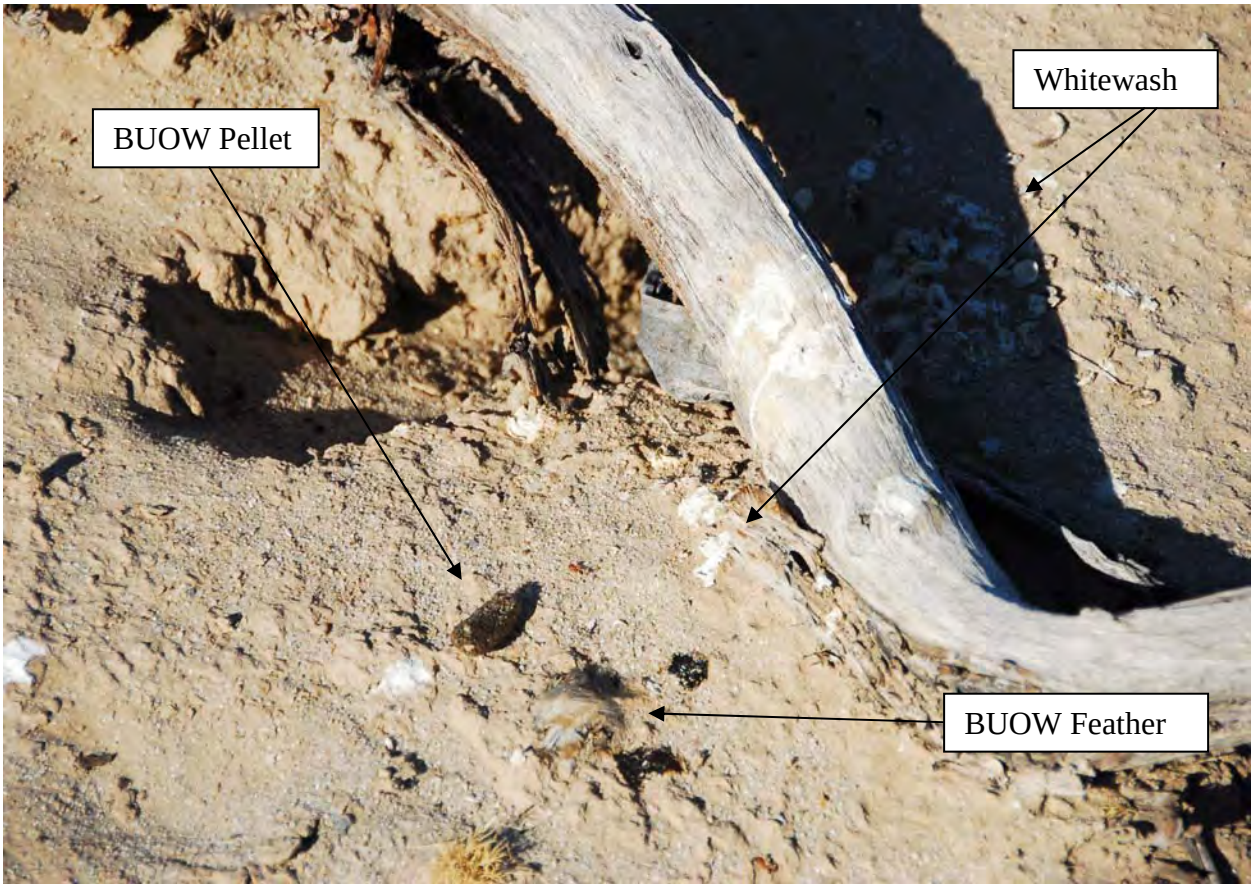
Appendix C
Western Burrowing Owl Survey Photographs

A very young juvenile Western Burrowing Owl at the entrance of a burrow along a canal.

This image shows the same burrowing owl and the location of the burrow along this active canal.

A typical active burrow next to an irrigation canal.

A burrow in the open desert currently occupied by a dispersing juvenile or a post-breeding adult.



Western Burrowing Owl sign found near a burrow in the open desert.

ATTACHMENT F

MOUNTAIN PLOVER SURVEY REPORT

AECOM
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619.233.0952 fax

February 22, 2011

Mr. Geary Hund
United States Fish and Wildlife Service
Carlsbad Field Office
6010 Hidden Valley Road, Suite 101
Carlsbad, CA 92009

Subject: Imperial Valley to Dixieland ID 230-kV Transmission Line and Substation Expansion Project Mountain Plover Surveys, Imperial County, California

Dear Mr. Hund:

AECOM is pleased to submit this mountain plover (*Charadrius montanus*; MOPL) survey report for biological services in support of the Imperial Irrigation District (IID) 230-kilovolt (kV) Transmission Line (ID Line) and Substation Expansion project, Imperial County, California (Figures 1 and 2). The term "survey area" in this report refers to areas with suitable MOPL habitat where surveys were conducted. AECOM biologists conducted a habitat assessment of the proposed transmission line and substation construction sites plus a 1,000-foot survey buffer on January 27, 2011 (the first survey), to determine habitat suitability for MOPL. This report summarizes results for the three protocol surveys conducted January 27 through February 14, 2011, to determine the presence or absence of MOPL, a California Department of Fish and Game (CDFG) species of special concern and a Bureau of Land Management (BLM) sensitive species.

Project Location

The entire project site is located in Imperial County, approximately 12 miles southwest of El Centro, California (Figures 1 and 2). The ID Line will start at the San Diego Gas & Electric (SDG&E)/IID Imperial Valley (IV) Substation located southwest of El Centro. The line will exit at the north side of the IV Substation and run northwest on BLM land. Depending on the final route, the line will be constructed on a combination of BLM land, existing IID right-of-way, and private property that will be acquired as a right-of-way. The transmission line will extend for approximately 7.3 miles in a northwest and then north direction before entering the Dixieland Substation north of Interstate 8 (I-8).

Project Description

IID is proposing to construct the ID Line between the IV Substation and Dixieland Substation in Imperial County. The entire project site will span approximately 7.3 miles. Three routes are proposed (one proposed route and two alternatives), which are depicted in Figure 2. An approximately 40-acre site immediately north of the existing IV Substation and an approximately 0.4 acre site (60 by 300 feet) immediately adjacent to the Dixieland Substation have been identified for potential expansion of this substation. Depending on the route chosen, the 230-kV ID Line will require construction of a combination of new H-frame, three-pole, and single-monopole steel structures. These structures will be an average height

of 90 feet above ground and will be designed to support a single 230-kV three-phase electrical circuit, one optical ground wire, and one 3/8-inch static or overhead ground wire.

Proposed Project

This route would exit the IV Substation on the north side and run north for about 0.5 mile. The line would make a 90 degree westward turn and run for approximately 0.25 mile before turning in a northwest direction. The line would stay on this northwest axis for approximately 2.5 miles before turning in a north-northwest direction and running for another approximately 1.5 miles before turning north. The line would run north for approximately 2 miles while crossing I-8 and Evan Hewes Highway before connecting with the Dixieland Substation.

Alternative 1

This route would follow the same route as the proposed route until a point approximately 0.75 mile after exiting the IV Substation, at which point this route would turn in a slightly more northward (running northwest) direction than the proposed route for about 2 miles until turning west and intersecting with the proposed route after running toward the west for 1 mile. At this point, this route generally coincides with the proposed route for the rest of the way.

Alternative 2

This route would follow the same path as Alternative 1, until a point approximately 2.75 miles from the exit of the IV Substation. At this point, the route would continue in a generally northwest direction to intersect with the current IID Westside Main Canal right-of-way near the Foxglove Canal headgate. From this point, the line would generally follow within the Westside Main Canal right-of-way north and northwest until a point approximately 0.75 mile north of I-8. At this point, the line would turn 90 degrees toward the west. The line would run west for less than 0.5 mile before making a 90 degree turn toward the north and entering the Dixieland Substation approximately 0.5 mile to the north.

<u>Project Survey Area</u>

The project routes extend through low desert that ranges between approximately 30 feet below mean sea level to about 30 feet above mean sea level in the Sonoran Desert of California. The public lands portion of the proposed routes is primarily desert flats and gradually sloping bajadas. The predominant vegetation type is creosote bush scrub dominated by creosote (*Larrea tridentata*) and interspersed with a few microphyll woodlands, and supports a mosaic of open desert scrub, sand/desert pavement, and numerous seasonal washes. In addition, Alternative 2 follows the existing west side main irrigation canal with both desert scrub vegetation and active and fallow agricultural fields to either side. All possible alternatives were included in the habitat assessment and the subsequent focused MOPL surveys. Representative photographs of the MOPL survey area are included in Appendix A.

Background Information

MOPL was proposed for listing by the U.S. Fish and Wildlife Service (USFWS) in 1999 and 2002. USFWS withdrew its proposed listing on September 9, 2003, on the conclusion that the threats to the plover were not as significant as previously believed. On July 31, 2010, USFWS issued a notice to reopen its 2002 proposal to list MOPL as threatened, allowing for public comment. The final listing determination for MOPL will occur no later than May 1, 2011. MOPL is currently a CDFG designated species of special concern and a BLM Sensitive Species.

MOPL is a small shorebird similar in size and shape to killdeer (*Charadrius vociferus*) and associated with short grass prairie and shrub steppe landscapes. Several attempts have been made to estimate the current North American (world) population of MOPL, with estimates ranging from 12,500 to 28,000 based on work by Tipton (2007) and cited in the Conservation Plan for the Mountain Plover (Andres and Stone 2009). This species breeds in the western Great Plains and Rocky Mountain states from the Canadian border to northern Mexico. MOPL do not breed in California; however, they winter in central and southern California, southern Arizona, southern Texas, and northern Mexico; primary wintering areas are the Central and Imperial valleys of California (Knopf 1996). Non-breeding, or wintering, grounds for MOPL are located primarily in California, specifically in the Sacramento, San Joaquin, Panoche, and Imperial Valleys. In addition, roughly 90% of the total population of MOPLs is believed to spend winters in the Imperial Valley, with wintering numbers steadily decreasing in the Central Valley areas and coastal plains (Knopf 1996; Wunder and Knopf 2003).

In California, MOPLs primarily occur from September to mid-March, with peak numbers from December through February (Garrett and Dunn 1981; Knopf 1996; Knopf and Rupert 1995). Currently, the largest numbers occur in the Imperial Valley and the portion of the Central Valley from southern Colusa County south to Kern County (Edson 2001; Edson and Hunting 1999; Hunting et al. 2001; Knopf and Rupert 1995; Shuford et al. 2004; USFWS 2003). At all seasons, MOPLs are strongly associated with short-grass prairie habitats or their equivalents that are flat and nearly devoid of vegetation (Graul and Webster 1976; Knopf 1996). They also use burned fields for night roosting (Knopf and Rupert 1995). Agricultural field use by MOPLs in the Imperial Valley seems to be influenced by the type and condition of the crops. Wintering MOPLs in the Imperial Valley tend to prefer alfalfa fields actively or recently grazed by sheep and Bermuda grass fields recently harvested or burned (Wunder and Knopf 2003). Habitat loss and degradation of the wintering and breeding grounds appear to be the main factors in population decline (USFWS 2003).

Survey Methodology

Interim survey guidelines developed by the USFWS Carlsbad Field Office (USFWS 2010) were used for these surveys. The guidelines stipulate that any suitable habitat, including abandoned, idle, or active agricultural fields with bare ground or vegetation shorter than 25 centimeters, be included in surveys. Based on a habitat assessment conducted by AECOM,

a small segment near the IV Substation where all three alignments (Proposed Project, Alternative 1, and Alternative 2) overlap, several active and fallow agricultural fields that coincide with the Alternative 1 and Alternative 2 alignment near and immediately adjacent to the west side main irrigation canal, and fallow agriculture fields along the Proposed Project just north and south of I-8 have the potential to support MOPL and were included in surveys (Figure 3; Appendix A).

During surveys, AECOM biologists familiar with MOPL calls used spotting scopes and binoculars to scan all suitable habitats in the survey area. Surveys were completed during the appropriate time of day (between 8 a.m. and 4 p.m.), time of year (December 1 through February 28), and under ideal weather conditions for detecting MOPLs. Generally active alfalfa fields were the dominant crop growing within the MOPL survey area. The amount of potentially suitable MOPL habitat changed throughout the survey period as crops grew past the 25-centimeter mark and as fields were harvested, flooded, and burned. Therefore, the total amount of survey area was smaller than the total 865 acres of potentially suitable MOPL wintering habitat and changed throughout the surveys. Biologists drove existing roads and periodically stopped to scan for MOPL in suitable fields, which changed throughout the survey period. The MOPL survey area and any sensitive wildlife species detected are depicted in Figure 3. The survey routes and observation points are depicted in Figures 4a and 4b.

Results

A summary of the survey effort and field conditions is presented in Table 1. The survey area, which consisted of 865 acres of potentially suitable MOPL wintering habitat, was visited three times. However, no MOPLs were observed or recorded. Copies of field data sheets are included in Appendix B and a list of all wildlife species detected is included in Appendix C.

Table 1
Protocol MOPL Surveys
Dates, Personnel, Weather Conditions, and Observations

Date	Time	Weather	Personnel	Acres/Hour/Biologist	Detections
01/27/11	0800–1100	65–73°F; 0% cloud cover; 0–2 miles per hour (mph)	AFI, ELA	144*	None
02/03/11	0935–1200	55–67°F; 0% cloud cover; 0–2 mph	AFI, ELA	144*	None
02/14/11	0900–1230	68–74°F; 0% cloud cover; 2–4 mph	ELA	247*	None

Note: A list of all wildlife species detected is located in Appendix C.
AFI=Andrew Fisher, ELA=Erik LaCoste
*Total survey area changed throughout surveys as active agricultural field conditions changed.

No MOPLs were detected during any of the protocol surveys within the MOPL survey area. Two sensitive wildlife species (northern harrier [*Circus cyaneus*] and burrowing owl [*Athene cunicularia*]) were incidentally detected; the locations of these species can be found in Figure 3.

Discussion

No MOPLs were detected during surveys. Surveyors focused on those areas of potentially suitable habitat identified during the habitat assessment. These survey areas included both abandoned and active agricultural fields. The abandoned agricultural fields generally consisted of large swaths of bare ground with sparse, dry vegetation on mostly sand or gravelly soils (see representative photographs in Appendix A). These fields appeared to have long since been abandoned by agricultural activities and appear to be returning to a more desert-like state. Active agricultural fields varied greatly; some fields contained crops (alfalfa or other crop) greater than 25 centimeters in height, some were recently burned and in varying stages of recovery, some fields contained recently harvested alfalfa, and others appeared recently abandoned or unused during winter.

MOPL were present in the Imperial Valley during the time of these surveys, and were observed by Andrew Fisher and Erik LaCoste following the survey on February 3, 2011, using harvested agricultural grasslands north and east of the project area near Calipatria and the Salton Sea. In addition, surveys conducted by the Los Angeles Natural History Museum for MOPL and long-billed curlew (*Numenius americanus*) from January 21 through January 23, 2011, found that MOPL numbers are smaller than in previous years; 827 MOPLs in 2011 compared to 2,955 in 2008, and 4,687 in 2007 (Molina 2011). These surveys also found that no MOPLs were detected south of I-8, where a majority of the survey area is located. Because the species was verified in the Imperial Valley at the time of these focused surveys, MOPL, if present in the project area, would have likely been detected.

Certification Statement

Qualified AECOM biologists who conducted MOPL surveys for the Imperial Irrigation District (IID) 230-kV Transmission Line (ID Line) and Substation Expansion project certify that the information in this survey report fully and accurately represents their work. Signatures of current AECOM biologists (Andrew Fisher and Erik LaCoste) who conducted the protocol surveys are below. The results of focused surveys for listed species are typically considered

valid for 1 year by the resource agencies. If you have any questions or require additional information, please feel free to contact either of us at (619) 233-1454.

Sincerely,

Andrew Fisher
Wildlife Biologist

Erik LaCoste
Wildlife Biologist

Attachments: Figure 1 – Regional Map
Figure 2 – Vicinity Map
Figure 3 – MOPL Survey Area and Sensitive Species Observed
Figure 4a – MOPL Survey Routes and Observation Points North
Figure 4b – MOPL Survey Routes and Observation Points South
Appendix A – Site Photographs
Appendix B – Field Datasheets
Appendix C – Wildlife Species Observed During MOPL Surveys

09080060 MOPL 10 Day Rpt.doc

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FIGURES

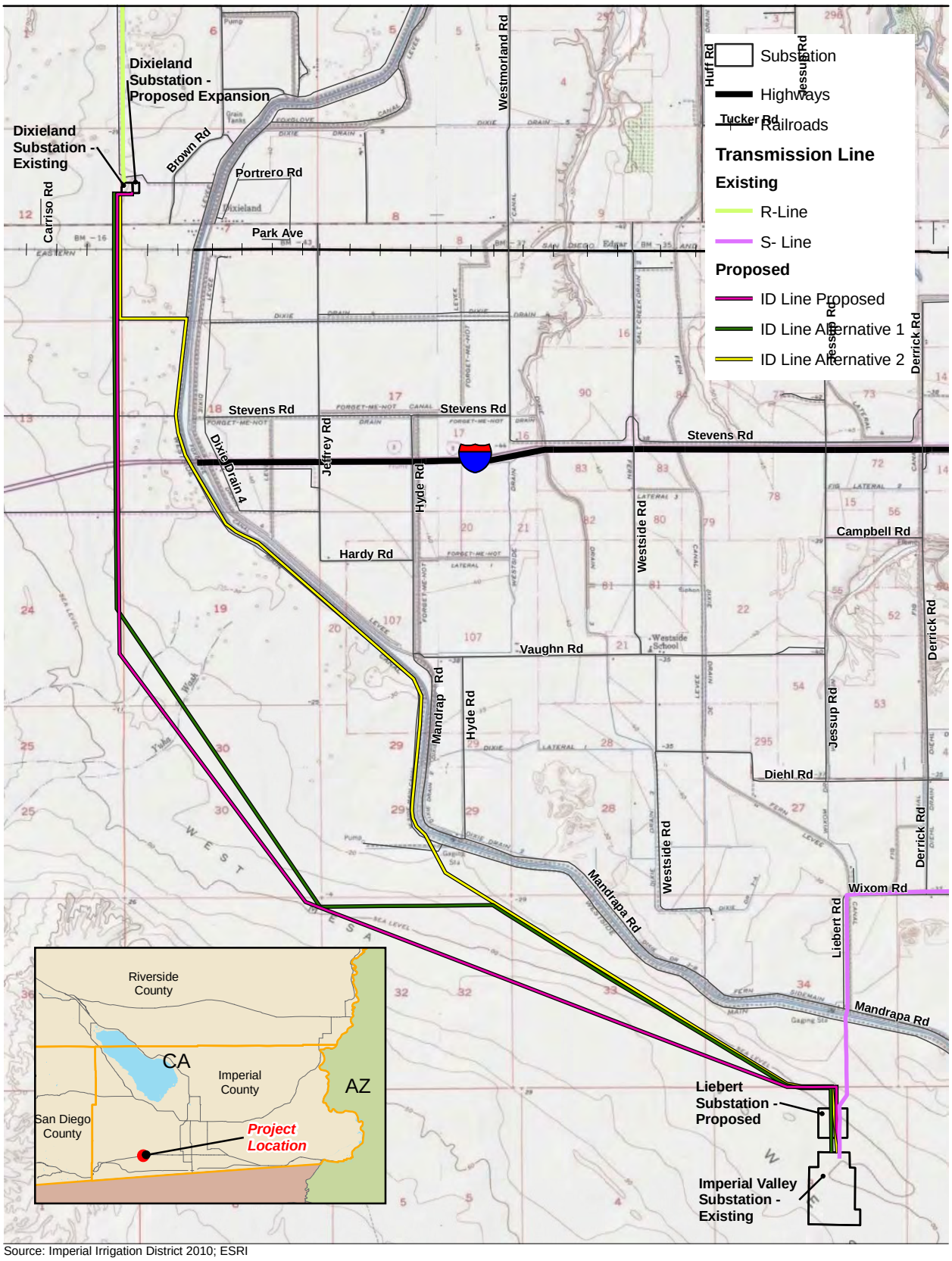
Source: Imperial Irrigation District 2009; ESRI 2009

20 10 0 20 Miles

Scale: 1 = 1,266,786.8; 1 inch = 20 mile(s)

Figure 1

Regional Map



Source: Imperial Irrigation District 2010; ESRI

4,000 2,000 0 4,000 Feet

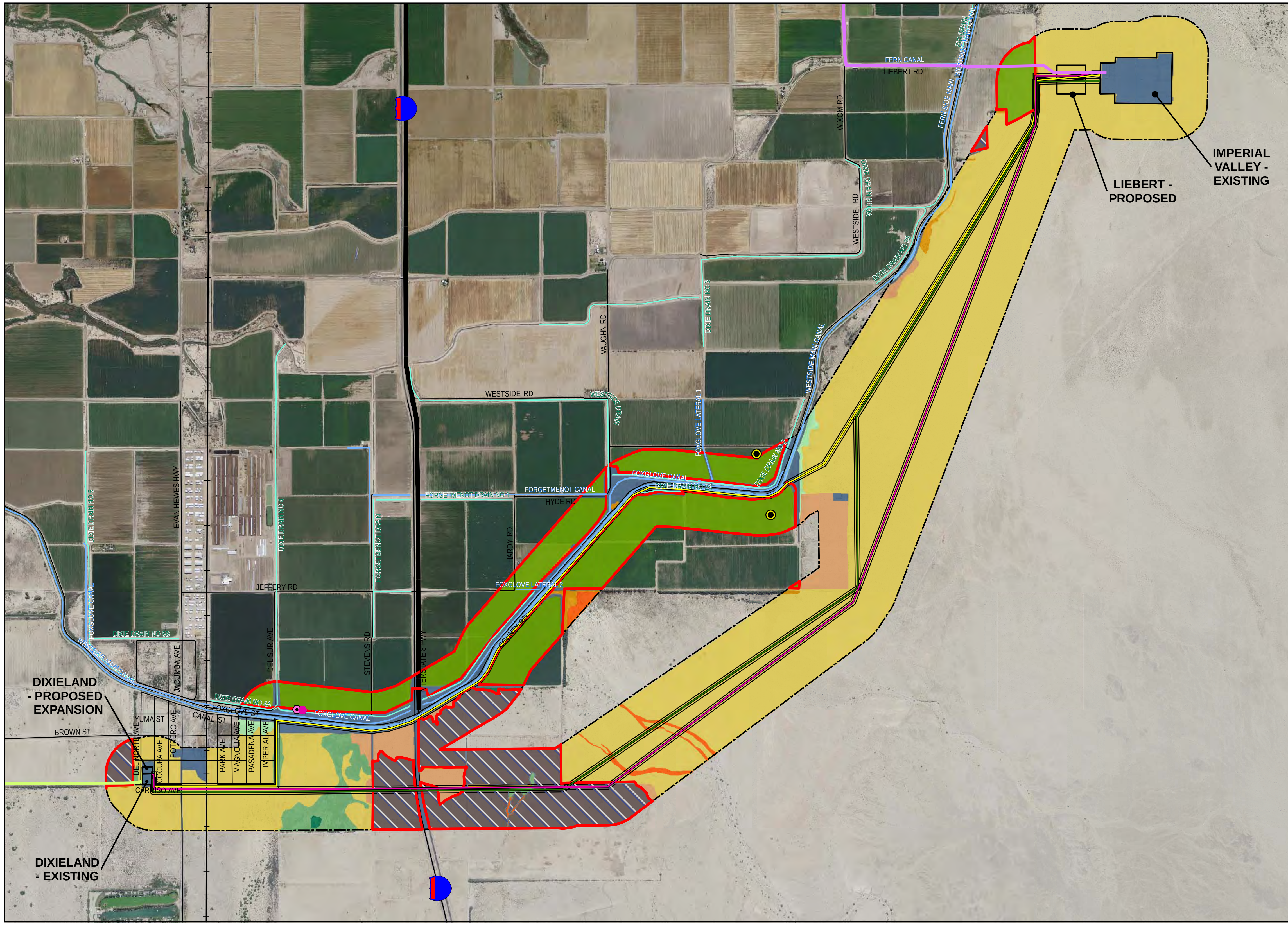
Scale: 1 = 48,000; 1 inch = 4,000 feet

Figure 2

Vicinity Map

ID Line - Imperial Valley to Dixieland 230 kV Transmission Line Mountain Plover Survey Report

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\MOPL\Fig2_MOPL_Vicinity_Topo.mxd, 02/21/11, ShahS2



LEGEND

Transmission Line

Existing

- R-Line
- S- Line

Proposed

- ID Line Proposed
- ID Line Alternative 1
- ID Line Alternative 2
- Substation
- Highways
- Streets/Roads
- RailRoad
- Drains
- Canals
- Transmission Lines - Proposed 140 ft ROW
- Survey Area Buffer - 1000 ft
- Mountain Plover Survey Area
- Fallow Agriculture

Sensitive Wildlife Species

Detected during Mountain Plover Survey

- Northern Harrier
- 1 Burrowing Owl
- 5 Burrowing Owls

Vegetation Type

- Agriculture
- Arrow Weed Scrub
- Desert Dry Wash Woodland
- Desert Saltbush Scrub
- Developed
- Disturbed Habitat
- Tamarisk Woodland
- Mesquite Bosque
- Open Water
- Sonoran Creosote Bush Scrub
- Tamarisk Scrub

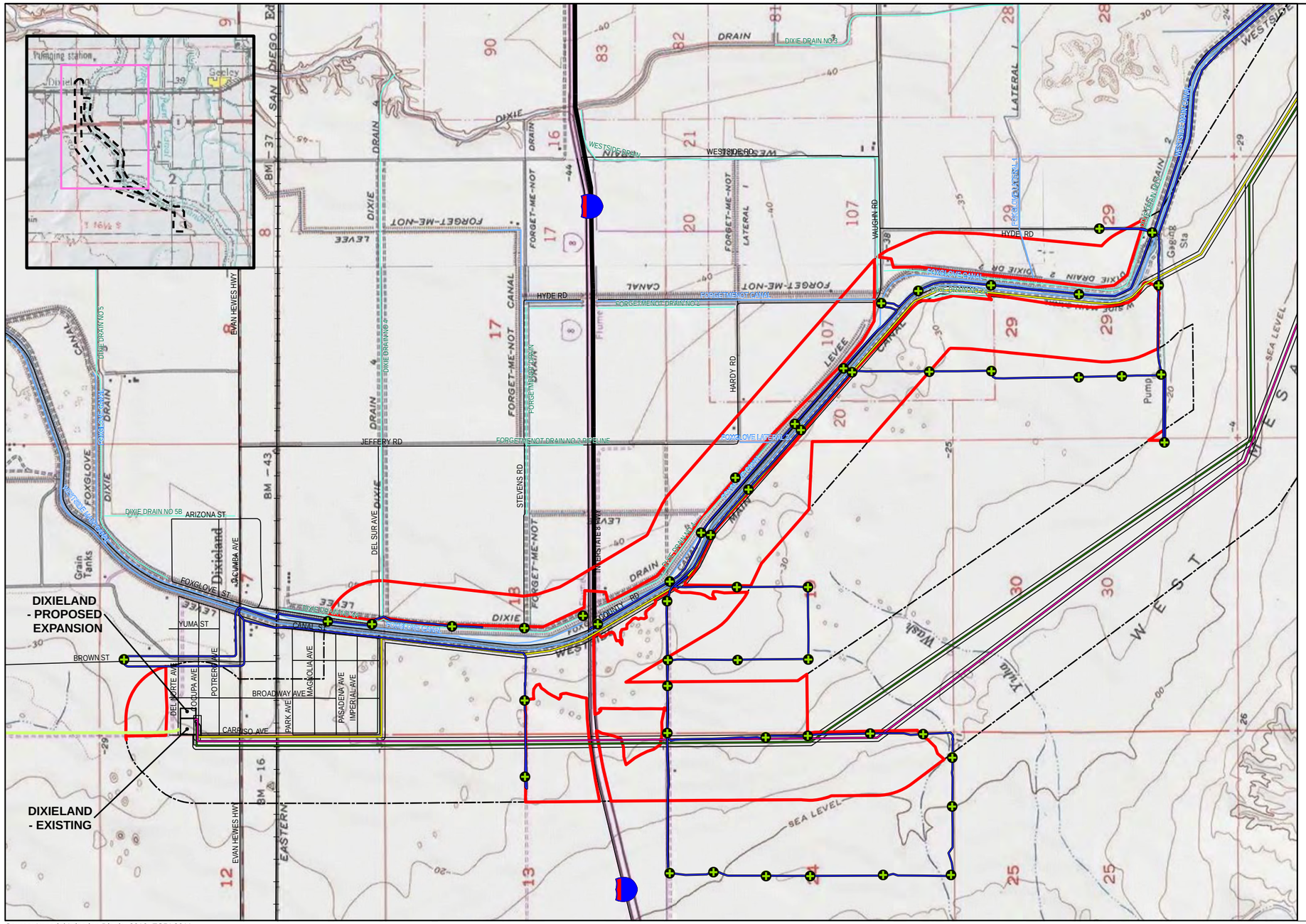
Source: Imperial Irrigation District 2010; NAIP 2009

3,000 1,500 0 3,000 Feet

Scale: 1 = 36,000; 1 inch = 3,000 feet

Figure 3

Mountain Plover Survey Area and Sensitive Species Observed



Source: Imperial Irrigation District 2010; ESRI 2011

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

LEGEND

Transmission Line

Existing

- R-Line
- S- Line

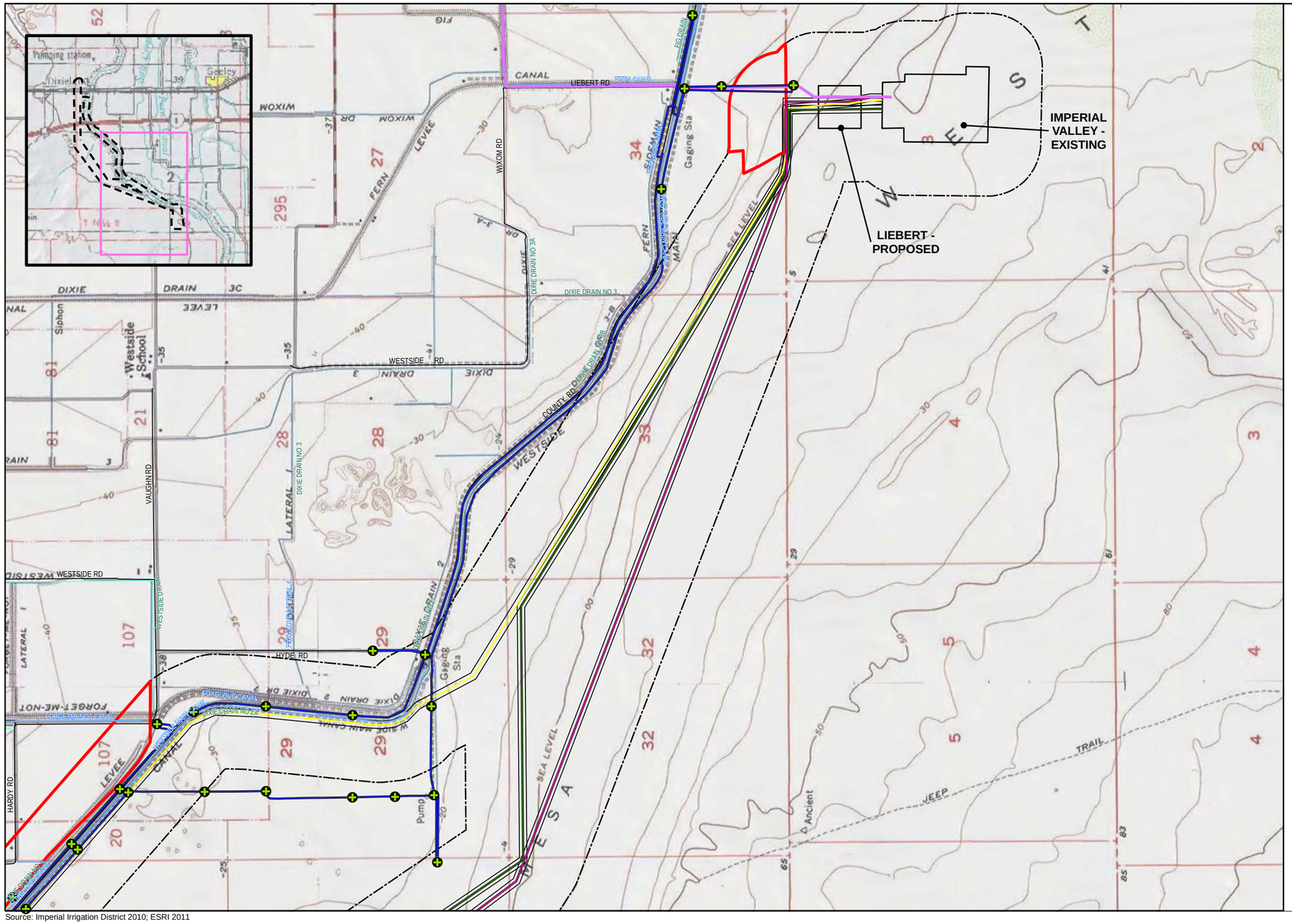
Proposed

- ID Line Proposed
- ID Line Alternative 1
- ID Line Alternative 2
- Substation
- Highways
- Streets/Roads
- RailRoad
- Drains
- Canals
- Transmission Lines - Proposed 140 ft ROW
- Survey Area Buffer - 1000 ft
- Mountain Plover Survey Observation Points
- Mountain Plover Survey Route
- Mountain Plover Survey Area

Figure 4a

Mountain Plover Survey Routes and Observation Points - North

Path: P:\2009\09080060 IID 230kV\6.0 GIS\6.3 Layout\REPORT_Maps_ALL\MOPL\Fig4_MOPLSurveyRoutes_and_ObsPts.mxd, 02/22/11, ShahS2



Source: Imperial Irrigation District 2010; ESRI 2011

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

LEGEND

Transmission Line

Existing

- R-Line
- S- Line

Proposed

- ID Line Proposed
- ID Line Alternative 1
- ID Line Alternative 2
- Substation
- Highways
- Streets/Roads
- RailRoad
- Drains
- Canals
- Transmission Lines - Proposed 140 ft ROW
- Survey Area Buffer - 1000 ft
- Mountain Plover Survey Observation Points
- Mountain Plover Survey Route
- Mountain Plover Survey Area

Figure 4b

Mountain Plover Survey Routes and Observation Points - South

APPENDIX A

SITE PHOTOGRAPHS

Photo 1. Facing north-west: Fallow agricultural field in MOPL survey area.

Photo 2. Facing south-west: Fallow agricultural field in MOPL survey area.

Photo 3. Facing east: Recently burned agricultural field in MOPL survey area.

APPENDIX B

FIELD DATASHEETS

Mountain Plover
~~BIRD~~ SURVEYS

Recorder: ELA Add'l Person: AFI GPS Unit: GTF4
Project: ID Dixieland Survey Section: Map #:
Date: 01-27-2010 Survey Type: Mnt. Plover Survey 1 of 3
Time Start: 0800 Time End: 1100

Start: T: 65°F CC: Ø Wind Sp/Dir: 0-1 W General Weather Condition: Sunny
End: T: 73°F CC: Ø Wind Sp/Dir: 1-2 W General Weather Condition: "

Map/GPS #	Time	Species	Age	Sex	Point Type	Comments
		WCSP	A J U	M F U		
		MODO	A J U	M F U		
		WEME	A J U	M F U		
		VEMP	A J U	M F U		
		GREG	A J U	M F U		
		EAQU	A J U	M F U		
		HOLA	A J U	M F U		
		CORA	A J U	M F U		
		ARFO	A J U	M F U		
		BLPH	A J U	M F U		
		RTHA	A J U	M F U		
		HOFI	A J U	M F U		
		LASP	A J U	M F U		
		VERW	A J U	M F U		
		SAPH	A J U	M F U		
		AMCO	A J U	M F U		
		KILL	A J U	M F U		
		NOHA	(A) J U	(M) F U	1 Ind. Mapped	
		BRSP	A J U	M F U		
		SAVS	A J U	M F U		
		AMKE	A J U	M F U		
		MAWR	A J U	M F U		
		WISN	A J U	M F U		
		BEKI	A J U	M F U		
		TRSW	A J U	M F U		
		TUVU	A J U	M F U		
		GBHE	A J U	M F U		
		VESP	A J U	M F U		
		BUOW	(A) J U	M F U	1 Ind. Mapped.	
		SSHA	A J U	M F U		

Mountain Plover

~~BIRD~~ SURVEYS

Recorder: ELAFI Project: IID Dixieland Survey Section: _____

Date: 1-27-2011 Survey Type: Mour Map #: _____

#	Time	Species	Age	Sex	Vegetation Type	Distance/ Direction
		FEHA	A J U	M F U		
			A J U	M F U		
			A J U	M F U		NO
			A J U	M F U		Mountain
			A J U	M F U		Plovers
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		

Comments:

Mountain Plover

BIRD SURVEYS

Recorder: ECA Add'l Person: AFI GPS Unit: 4
Project: IID Dixieland Survey Section: Map #:
Date: 2-4-2011 Survey Type: MOUP Survey 2 of 3
Time Start: 0935 Time End: 1235

Start: T: 55°F CC: Ø Wind Sp/Dir: Ø General Weather Condition: Sunny, Cool
End: T: 67°F CC: Ø Wind Sp/Dir: 2 W General Weather Condition: " " "

Map/GPS #	Time	Species	Age	Sex	Point Type	Comments
		BCPH	A J U	M F U		
		MOUO	A J U	M F U		
		RTHA	A J U	M F U		
		SSNA	A J U	M F U		
		WCSP	A J U	M F U		
		VERN	A J U	M F U		
		HOFI	A J U	M F U		
		YRWA	A J U	M F U		
		SAGS	A J U	M F U		
		GRRO	A J U	M F U		
		WTSW	A J U	M F U		
		AMKE	A J U	M F U		
		WEME	A J U	M F U		
		TRVU	A J U	M F U		
		BABB	A J U	M F U		
		RWBB	A J U	M F U		
		EUST	A J U	M F U		
		CREG	A J U	M F U		
		LBCU	A J U	M F U		
		KILL	A J U	M F U		
		NOWA	A J U	M F U	Blnd. Mapper.	
		GREG	A J U	M F U		
		NFIB	A J U	M F U		
		AMCO	A J U	M F U		
		BEKI	A J U	M F U		
		BGGN	A J U	M F U		
		BTGN	A J U	M F U		
		RCKI	A J U	M F U		
		COYE	A J U	M F U		
		GBHE	A J U	M F U		

Mountain Plover

~~BIRD~~ SURVEYS

Recorder: AFI / ELA Project: ND Dixieland Survey Section: _____

Date: 2-4-2011 Survey Type: MOUP Map #: _____

#	Time	Species	Age	Sex	Vegetation Type	Distance/ Direction
		CGDO	A J U	M F U		
		CORA	A J U	M F U		
		FERR	A J U	M F U		
		SNEG	A J U	M F U		
		ABTO	A J U	M F U		
		CHSP	A J U	M F U		
		BHOW	A J U	M F U	5 individuals	already mapped during Burrow survey.
		SPSA	A J U	M F U		
			A J U	M F U		NO Mountain
			A J U	M F U		Plovers.
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		

Comments:

MIOP Mountain Plover ~~[illegible]~~ SURVEYS #3

Recorder: ERIK LaCoste Add'l Person: NONE GPS Unit: —

Date: 2/14/11 Project DIXIELAND Survey 3 of 3

Time Start: 0900 Time End: 1230 Map #: —

Start: T: 68 CC: 0 Wind Sp/Dir: 2-4 General Weather Condition: Clear calm

End T: 74 CC: 0 Wind Sp/Dir: 2-4 General Weather Condition: Clear Calm

Map/ GPS #	Time	Species	Age	Sex	Point Type	Comments
		TUVU	A J U	M F U		
		MODO	A J U	M F U		
		GRRO	A J U	M F U		
		RTHA	A J U	M F U		
		WCSP	A J U	M F U		
		BGGN	A J U	M F U		
		VERD	A J U	M F U		
		PHAI	A J U	M F U		
		YRWA	A J U	M F U		
		INDO	A J U	M F U	INCA DOVE	
		BLPH	A J U	M F U		
		WEME	A J U	M F U		
		ABTO	A J U	M F U		
		ANHU	A J U	M F U		
		HOLA	A J U	M F U		
		AMKE	A J U	M F U		
		EUCD	A J U	M F U		
		NOHA	A J U	M F U		
		GREG	A J U	M F U		
		KILL	A J U	M F U		
		SNEG	A J U	M F U		
		HOFI	A J U	M F U		
		SAPH	A J U	M F U		
		AMCO	A J U	M F U		
		CORA	A J U	M F U		
		SSHA	A J U	M F U		
			A J U	M F U		ND Mountain
			A J U	M F U		Plovers
			A J U	M F U		
			A J U	M F U		
			A J U	M F U		

APPENDIX C

WILDLIFE SPECIES OBSERVED DURING MOPL SURVEYS

Wildlife Species Observed During MOPL Surveys

	Scientific Name	Common Name
BIRDS		
Order Ciconiiformes		**Herons, Storks, Ibises, and Relatives**
	Family Ardeidae	
	Ardea herodias	great blue heron
	Egretta thula	snowy egret
	Bubulcus ibis	cattle egret
	Ardea alba	great egret
	Family Threskiornithidae	
	Plegadis chihi	white-faced ibis
	Family Cathartidae	
	Cathartes aura	turkey vulture
Order Falconiformes		**Diurnal Birds of Prey**
	Family Accipitridae	
	Accipiter striatus	sharp-shinned hawk
	Buteo jamaicensis	red-tailed hawk
	Buteo regalis	ferruginous hawk
	*Circus cyaneus**	northern harrier
	Family Falconidae	
	Falco sparverius	American kestrel
Order Galliformes		**Magapodes, Curassows, Pheasants, and Relatives**
	Family Odontophoridae	
	Callipepla gambelii	Gambel's quail
Order Gruiformes		**Cranes, Rails, and Relatives**
	Family Rallidae	
	Fucila americana	American coot
Order Charadriiformes		**Shorebirds, Gulls and Relatives**
	Family Charadriidae	
	Charadrius vociferus	killdeer
	Family Scolopacidae	
	Actitis macularia	spotted sandpiper
	Gallinago delicata	Wilson's snipe
	Numenius americanus	long-billed curlew
Order Columbiformes		**Pigeons and Doves**
	Family Columbidae	
	Zenaida macroura	mourning dove
	Streptopelia decaocto	Eurasian collared-dove
	Columbina passerina	common ground-dove
	Columbina inca	Inca dove
Order Cuculiformes		**Cuckoos and Relatives**
	Family Cuculidae	
	Geococcyx californianus	greater roadrunner
Order Strigiformes		**Owls**
	Family Stringidae	
	*Athene cunicularia**	burrowing owl
Order Apodiformes		**Hummingbirds and Swifts**
	Family Apopidae	
	Aeronautes saxatalis	white-throated swift
	Family Trochilidae	
	Calypte anna	Anna's hummingbird
Order Coraciiformes		**Kingfishers**
	Family Alcedinidae	
	Ceryle alcyon	belted kingfisher
Order Passeriformes		**Song birds**
	Sayornis nigricans	black phoebe
	Sayornis saya	Say's phoebe

	Scientific Name	Common Name
	Family Corvidae	
	Corvus corax	common raven
	Family Alaudidae	
	Eremophila alpestris actia+	California horned lark
	Family Hirundinidae	
	Tachycineta bicolor	tree swallow
	Family Remizidae	
	Auriparus flaviceps	verdin
	Family Troglodytidae	
	Cistothorus palustris	marsh wren
	Family Sylviidae	
	Polioptila caerulea obscura	blue-gray gnatcatcher
	Polioptila melanura	black-tailed gnatcatcher
	Family Regulidae	
	Regulus calendula	ruby-crowned kinglet
	Family Sturnidae	
	Sturnus vularis	European starling
	Family Ptilogonatidae	
	Phainopepla nitens	phainopepla
	Family Parulidae	
	Dendroica coronata	yellow-rumped warbler
	Geothlypis trichas	common yellowthroat
	Family Emberizidae	
	Chondestes grammacus	lark sparrow
	Melospiza melodia	song sparrow
	Passerculus sandwichensis	savannah sparrow
	Spizella passerina	chipping sparrow
	Spizella breweri	Brewer's sparrow
	Pipilo aberti	Abert's towhee
	Zonotrichia leucophrys	white-crowned sparrow
	Pooecetes gramineus	vesper sparrow
	Family Icteridae	
	Sturnella neglecta	western meadowlark
	Agelaius phoeniceus	red-winged blackbird
	Euphagus cyanocephalus	Brewer's blackbird
	Family Fringillidae	
	Spinus tristis	American goldfinch
	Carpodacus mexicanus	house finch

[1] Federally threatened or endangered species
[2] State threatened or endangered species
[3] State fully protected species
[*] State species of special concern
[+] State special animal (CDFG 2011)

ATTACHMENT G

MEMO SUMMARIZING WRI INFORMATION

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February 11, 2011

Donna Clinton
Bureau of Land Management
El Centro Field Office
1661 South 4th Street
El Centro, CA 92243

Subject: Golden Eagle Information within the Imperial Valley

Dear Ms. Clinton:

This letter has been prepared to summarize AECOM's efforts to discern nesting golden eagle information in the Imperial Valley, California, within a 10-mile buffer of the Imperial Irrigation District's (IID) proposed 230kV Imperial Valley to Dixieland transmission line (herein referred to as the project site).

AECOM contacted Wildlife Research Institute Inc. (WRI) in August 2010. AECOM presented the project site and a 10-mile buffer around the project site to WRI representatives seeking information on golden eagle nesting data. WRI indicated that they had no data and were not aware of any golden eagle nests within the 10-mile buffer around the project site, north of the United States-Mexico international border. A portion of the 10-mile buffer overlaps with mountains in Mexico. No helicopter surveys have been conducted in those mountains in Mexico to determine if golden eagles are nesting there. The Cerro Centinela Mountains to the south (in Mexico), which are within 10-miles of the project, have the potential to harbor nesting golden eagles. Currently, the Coyote Mountains (13 miles) to the west of the project site are the closest known nest location to the project site for which WRI has data.

AECOM also contacted Bloom Biological Inc., (BBI) for golden eagle data in August 2010. BBI indicated that they were familiar with the Imperial Valley floor and that no known golden eagles have nested in the Imperial Valley floor from 2006 through 2008 based on known data. BBI also stated that there is no reason to believe the species would ever nest there (even on towers) based on their expertise regarding the suitable nesting characteristics for the species. The nearest plausible nesting location, according to BBI expert opinion, would be the mountains to the west of the project approximately 11 miles away (2 miles closer to the project site than the Coyote Mountains).

Using this information AECOM established that there were no nesting golden eagles nesting within the Imperial Valley within 10 miles of the project site in the United States.

There is potential for golden eagles to migrate through the valley though it is highly unlikely that they would use the site for nesting purposes.

If you have any questions feel free to contact me.

Lyndon Quon, Sr. Biologist

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