

APPENDIX J
SWAINSON'S HAWK AND GENERAL RAPTOR SURVEY REPORT
(Report for 2012)

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**WEST OF DEVERS
SWAINSON'S HAWK
&
GENERAL RAPTOR NESTING REPORT
FOR THE
2012 BREEDING SEASON**

PREPARED FOR:

Art Homrighausen
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, CA 92614
(949) 553-0666

PREPARED BY:

Jeff W. Kidd
Kidd Biological, Inc.
18562 Frantz Road
Perris, CA 92570
(951) 776-0304



DATE:

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EXECUTIVE SUMMARY

Kidd Biological, Inc. (Kidd) conducted nest searches for Swainson's hawks and other nesting raptors for the Southern California Edison (SCE) West of Devers Project (Project) during spring and summer 2012 (Figure 1; all figures in Appendix A). The Project includes the upgrade of transmission lines and associated towers within an existing transmission corridor approximately 48-miles long in Southern California. Specifically, the Project is located between the Devers Substation, in an unincorporated area of Riverside County near Desert Hot Springs to the east, and the Vista Substation in the City of Grand Terrace to the west, with an additional transmission line section to the San Bernardino Substation in the City of San Bernardino to the north.

Surveys for nesting raptors were conducted within the SCE transmission line right-of-way (ROW) easement and an adjacent 500-foot (ft) buffer. Surveys for Swainson's hawks extended to a 1/2 mile radius beyond the ROW. Although Swainson's hawks were observed migrating northward during the surveys, none were observed to be perched, foraging, or nesting within the Study Area. Based on our survey results, Swainson's hawks did not nest within the ROW or within a 1/2-mile radius of the ROW. A total of 52 active raptor nests were recorded within the ROW and 500-ft buffer representing four raptor species: 1) red-tailed hawk (45 nests); 2) Cooper's hawk (one [1] nest); 3) American kestrel (one [1] nest); 4) great-horned owl (three [3] nests); and 5) barn owl (two [2] nests). During the Swainson's hawk surveys in the expanded 1/2-mile Study Area, another 25 nests representing six [6] raptor species were identified. During the surveys, three [3] adult Golden Eagles were observed. These individuals likely represent residents of one or two territories in the Whitewater River watershed and mountain foothills to the west near the Morongo Band of Indians Reservation. In addition, common ravens, which are protected under the Federal Migratory Bird Treaty Act of 1918, were recorded in at least 22 confirmed nest sites, making them the second-most abundant, large nesting bird on transmission towers in the easement after the red-tailed hawk.

Burrowing owl and golden eagle survey results are reported in separate stand-alone documents and are not addressed in detail in this report.

INTRODUCTION

Kidd Biological, Inc. (Kidd) conducted nest searches targeting Swainson's hawks and other raptors for the proposed Southern California Edison (SCE) West of Devers (WOD) Project (Project) during the 2012 breeding season (Figure 1). The Project corridor and 500-ft buffer were surveyed for all nesting raptors. The buffer was expanded to ½ mile on each side of the ROW for Swainson's hawks. The objective of these surveys was to document all raptor nests, including Swainson's hawks, within the Project area and buffers (Study Area). This report summarizes the methods and results of the surveys. Project-related impacts and proposed minimization measures will be provided in the Proponent's Environmental Assessment (PEA).

PROJECT DESCRIPTION

At this time, SCE does not have a final detailed project description; however, it will be provided when it becomes available. In general terms, the preliminary alignment being considered for the West of Devers Project occurs within an SCE Right-of-Way (ROW) and extends along an existing transmission line corridor from the Vista Substation in the City of Grand Terrace, San Bernardino County, to the Devers Substation, near North Palm Springs, Riverside County (Figure 1). The project would also include re-conductoring and transmission facility upgrades extending up to the San Bernardino Substation between the Cities of San Bernardino and Redlands, San Bernardino County.

PROJECT LOCATION

The preliminary alignment being considered for the WOD Project is located within an SCE ROW easement and extends along an existing transmission line corridor from the Vista Substation in the City of Grand Terrace in San Bernardino County to the Devers Substation, near North Palm Springs in Riverside County (Figure 1). The proposed Project ROW crosses private, public and tribal lands, and the Cities of Banning, Beaumont, Calimesa, Colton, Grand Terrace, Loma Linda, Redlands, and unincorporated areas, including Cabazon and Whitewater.

SWAINSON'S HAWK

SPECIES ACCOUNT

The Swainson's hawk (*Buteo swainsonii*) is a large, wide-ranging raptor that breeds in open habitats throughout western North America extending from southern Canada to northern Mexico and from California to the Great Plains, with small numbers in Alaska and northwestern Canada.

Swainson's hawks are extremely variable in appearance. Adults exhibit a wide range of plumage coloration, but all individuals possess universally distinguishing characteristics

including a dark head, rufous or dark brown breast forming a 'bib' separating the white throat patch, and pale, light to heavily barred belly.

The Swainson's hawk occurs in several lowland habitats, including sparsely-vegetated expanses of valleys, plateaus, floodplains, and desert. Preferred foraging habitat includes dry land, pastures, fallow and low-growing crop fields, alfalfa and other forage crop fields, and open shrublands, desert scrub communities, and grasslands.

During the breeding season it primarily preys on small mammals, including Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), kangaroo rats (*Dipodomys* spp.) and occasional birds, amphibians, and reptiles. During winter it shifts to an almost exclusively insectivorous diet and forages in flocks. As its preferred foraging habitat of native grasslands and other open communities has been converted for agricultural purposes, the Swainson's hawk has become progressively more dependent on cultivated land for foraging (Bechard et al. 2010; Bloom 1980).

The majority of California-breeding Swainson's hawks arrives from March to April and immediately begins pairing and occupying territories. Swainson's hawks tend to maintain strong nest site fidelity, and some studies have suggested long-term monogamy among pairs. Dispersal from natal sites to breeding sites ranged from 0 km (bred in natal nest) to 18.1 km in one northern California study, but much longer dispersal distances have been suggested by studies on populations in other regions (Bechard et al. 2010; Woodbridge et al. 1995).

Nest sites are most often located in tall and isolated trees, often along the edges of riparian woodlands near open areas with suitable foraging habitat (Bechard et al. 2010; Bloom 1980). Where tall trees are not readily available, nests may be located in smaller trees such as junipers, or very rarely on rock ledges or outcrops, manmade structures, or even on the ground. In urban areas, a variety of ornamental landscape trees may serve for nest sites, provided that they are relatively close to suitable foraging habitat (Bechard et al. 2010). In the Mojave Desert, Joshua tree woodlands or desert riparian strips may be utilized.

Home range size can be large, but is variable by location and available resources. An average home range of 40.38 square kilometers (km²) was defined by one study in the Central Valley, while the average home range defined by another study conducted in southeastern Washington was 6.21 km² (Bechard et al. 2010).

Most North American populations of the Swainson's hawk migrate to South America for the winter, primarily to the pampas of Argentina. Wintering Swainson's hawks appear to almost exclusively roost in exotic trees like eucalyptus, elm, and pine (Bechard et al. 2010; Bloom 1980; CEC and CDFG 2010). Some small populations winter in central California, southern Texas, and southern Florida. The majority of the Central Valley population migrates to northwestern Mexico for the winter. Juveniles sometimes do not migrate during their first winter (Bechard et al. 2010; Herzog 1996; CEC and CDFG 2010).

The majority of the remaining California population resides in the Central Valley and the Great Basin region in northeastern California (Bechard et al. 2010; Bloom 1980). Small numbers of Swainson's hawks continue to nest in Mono and Inyo Counties, and a very small population of approximately 10-12 pairs in the Antelope Valley and western Mojave Desert. These represent the southernmost edge of the current breeding range in California (Bechard et al. 2010; Risebrough et al. 1989; CEC and CDFG 2010). During 2011, an active Swainson's hawk nest was reported by an Audubon Society member as being located in the San Jacinto/Mystic Lake area of Riverside County south of the WOD Project; however, this observation was not confirmed or photo-documented.

The Swainson's hawk's restricted and fragmented range, low abundance, history of decline, and suspected limited genetic exchange make it vulnerable to further extirpation throughout California, particularly in the Antelope Valley. A number of factors have likely contributed to its declining numbers, including breeding and wintering habitat loss, pesticide poisoning and contamination and other, as yet unqualified, environmental influences. Solar and other alternative-energy development projects in the Mojave Desert region may threaten the few pairs persisting there (Bechard et al. 2010; Risebrough 1989; CEC and CDFG 2010).

The Swainson's hawk is considered a Bird of Conservation Concern by the U.S. Fish and Wildlife Service (USFWS)¹, Sensitive by the U.S. Forest Service (USFS)², a California State-listed Threatened Species, and is included on the American Bird Conservancy Watch List³.

SWAINSON'S HAWK METHODOLOGY AND STUDY AREA

Surveys for Swainson's hawks were conducted throughout the Project ROW and within a 1/2-mile radius buffer on each side. Surveys were conducted to maximize the potential to observe adult hawks and nests or young in accordance with recommendations from the Swainson's Hawk Technical Advisory Committee (TAC) and the California Department of Fish and Game (CDFG) (CEC and CDFG 2010; TAC 2000). Swainson's hawk surveys followed CDFG and TAC recommendations, and also included Project-specific amended/modified procedures approved by SCE and CDFG. Due to access issues with the Morongo Reservation, significant survey schedule delays were caused; therefore, prescribed

¹ FWS: BCC: Fish and Wildlife Service: Birds of Conservation Concern: The goal of the BCC 2008 report is to accurately identify the bird species (beyond those already designated as threatened or endangered) that represent highest conservation priorities and draw attention to species in need of conservation action. The hope is by focusing attention on these highest priority species, it will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities.

² USDA Forest Service defines sensitive species as those plant and animal species identified by a regional forester that are not listed or proposed for listing under the federal ESA for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

³ American Bird Conservancy: United States WatchList of Birds of Conservation Concern: a joint project between the American Bird Conservancy and the National Audubon Society. It reflects a comprehensive analysis of all the bird species in the U. S. It reveals those in greatest need of immediate conservation to survive environmental challenges, including habitat loss, invasive species, and global warming. The list builds on the species assessments conducted for many years by Partners in Flight (PIF) for land birds, the latest available research and assessments from the bird conservation community, along with data from the Christmas Bird Count and Breeding Bird Survey.

survey time-windows were impossible to follow. Aerial surveys were conducted by helicopter to ensure some level of data collection during the period pedestrian access had not been granted on the Morongo Reservation.

Topography, land use, and vegetation communities vary widely across the Study Area. Vegetative cover types mapped within the Study Area include active and fallow agricultural fields, cat-claw acacia scrub, chaparral, coast live oak woodland, coastal sage scrub, creosote scrub, desert brittle bush scrub, developed or disturbed land, forb-land, grassland, riparian woodland, recently burned habitat, and riparian or wash scrubland. The most common types of cover present in the Study Area are 1) developed and/or disturbed land, 2) creosote scrub, 3) coastal sage scrub, and 4) grassland habitats (GANDA 2011).

RESEARCH AND LITERATURE REVIEW

We investigated many sources for Swainson's Hawk current and historical occurrences within the Study Area including reports and information from SCE/LSA, recognized scientific journals, local experts, and the Audubon Society. were investigated. The CNDDDB and other site-specific resources, including earlier reports and assessments conducted for the WOD Project, were consulted along with local and regional experts (CNDDDB; GANDA 2011). Relevant information on vegetation communities, current and past land use, topography, and other biological resources within the Study Area was collected and evaluated prior to commencing the field surveys.

FIELD METHODS

Four complete Swainson's hawk nest surveys were conducted in the Study Area during the approved survey windows. Dates, times, and weather conditions of each are listed in Table A. Surveys were conducted by qualified raptor biologists with Swainson's hawk survey and trapping/banding experience, in a manner that maximized the likelihood of detecting adult Swainson's hawks, nests, and/or young by sight and/or sound.

Surveys were initiated with an aerial assessment to determine where focused efforts were most appropriate based on habitat type(s). Following this initial assessment, two aerial surveys were conducted to identify potential nest sites (trees and surface structures) adjacent to suitable foraging habitat (grasslands and other open space) within the Study Area (Figure 2). The third and fourth sets of surveys were conducted from the ground that were focused in, and around, areas identified as suitable for nesting and foraging. In addition to these focused efforts, various biologists from LSA, Kidd, BioGin Consulting (BioGin), BioResource Consultants (BRC), and Dudek conducted other biological surveys in which raptor nests were documented and reported.

Table A. Swainson's Hawk Survey Periods, Dates & Times

2012 Date	Surveyors	Survey Period	Task	Time
3/14	JK/ST	1	Aerial pre arrival surveys to map suitable areas and existing nests	All day
3/28	JK/ST	1	Ground pre-arrival surveys	All day
4/6	JK/ST	1	Aerial Surveys during nest building stage	All day
4/1	JK/ST	2	Ground Surveys during nest building stage	All day
4/14	JK/ST	2	Ground Surveys during nest building stage	All day
4/28	JK/ST	2	Ground Surveys during nest building stage	All day
5/9	JK/NK	3	Ground Surveys during egg-laying and incubation stage	All day
5/16	JK/NK	3	Ground Surveys during egg-laying and incubation stage	All day
5/23	JK/NK	3	Ground Surveys during egg-laying and incubation stage	All day
7/1	JK/ST	4	Ground Surveys - Fledging and Post Fledging Period	0600-1200, 1600-2000
7/8	JK/NK	4	Ground Surveys - Fledging and Post Fledging Period	0600-1200, 1600-2000
7/15	JK/ST	4	Ground Surveys - Fledging and Post Fledging Period	0600-1200, 1600-2000
7/22	JK/NK	4	Ground Surveys - Fledging and Post Fledging Period	0600-1200, 1600-2000
7/29	JK/ST	4	Ground Surveys - Fledging and Post Fledging Period	0600-1200, 1600-2000

Surveyor: JK = Jeff Kidd; NK = Nina Jimerson-Kidd; ST = Scott Thomas

On the ground and per protocol, vehicle-based “windshield surveys” were conducted throughout suitable portions of the Study Area wherever roads were accessible. These surveys were conducted as quietly as possible and with minimal distractions. Driving allowed the surveyor to approach hawks or potential nests to a closer proximity compared with on-foot, thus minimizing disturbance to any nesting hawks present in the Study Area. Vehicle surveys were conducted in both directions to maximize detection rates. Driving speeds were limited to no more than 5 miles per hour (mph) when possible, and surveyors stopped as frequently as necessary to scan trees or structures with binoculars and spotting scopes.

Where roads were not present or drivable, walking surveys were performed in order to identify any nesting Swainson’s hawks in the Study Area. Potential nest sites were surveyed from multiple fixed-points, with the aid of binoculars and spotting scopes at distances of 50 to 200 meters (m), in order to minimize disturbance yet maintain maximum detection effectiveness of nests or young.

All surveys were conducted during favorable weather conditions that avoided periods of heavy wind or rain, fog, or other climate conditions that could potentially reduce hawk activity or visibility to surveyors.

Any observations of Swainson's hawk individuals or pairs, regardless of breeding status, were recorded by location, along with any behaviors observed. Any indications of nesting activity, including vocalizations, observation of nests, perched adults, displaying adults, or young were also recorded by surveyors.

GENERAL RAPTOR SURVEY METHODS

During the spring of 2012, Kidd biologists conducted aerial and ground surveys for all nesting raptors in the Project area in conjunction with the Swainson's hawk survey effort. The Study Area for the general nesting raptor surveys summarized in this report incorporates the entire Project footprint and a 500-ft buffer surrounding the Project corridor.

RESEARCH AND LITERATURE REVIEW

Available sources of current and historical information on raptors known within the Study Area were reviewed. Sources included, but were not limited to, The California Natural Diversity Database (CNDDDB), site-specific reports and assessments previously prepared for the WOD Project, local experts, published reports in recognized scientific journals and local Audubon Society groups. Additional sources included communication with other local and regional raptor experts (CNDDDB; GANDA 2011). Relevant information regarding vegetation communities, topography, current and past land use, and other biological resources within the region of the Study Area was compiled and reviewed prior to initiating the field surveys.

FIELD METHODS

Kidd conducted four nesting-raptor surveys, using combined aerial and ground surveys, throughout the Study Area during the 2012 breeding season. Dates and times of each survey are listed in Table B. All surveys were conducted by qualified raptor biologists with knowledge and expertise of the species occurring in the Study Area. Surveys using visual and auditory identification techniques were conducted in a manner that maximized detection and minimized disturbance of nesting birds.

Table B. Raptor Survey Dates and Tasks

2012 Date	Surveyors	Task
3/14	JK/ST	Aerial surveys to map existing nests
3/28	JK/ST	Ground surveys to map existing nests checking status
4/6	JK/ST	Aerial Surveys Mapping nests checking status
4/13	JK/ST	Ground Surveys check status of nests
4/14	JK/ST	Ground Surveys check status of nests
4/28	JK/ST	Ground Surveys check status of nests
5/9	JK/NK	Ground Surveys checking status and counting young
5/16	JK/NK	Ground Surveys checking status and counting young
5/23	JK/NK	Ground Surveys checking status and counting young
7/1	JK/ST	Ground Surveys checking status and counting young
7/8	JK/NK	Ground Surveys checking status and counting young
7/15	JK/ST	Ground Surveys checking status and counting young
7/22	JK/NK	Ground Surveys checking status and counting young
7/29	JK/ST	Ground Surveys checking status and counting young

Surveyor: JK = Jeff Kidd; NK = Nina Jimerson-Kidd; ST = Scott Thomas

The first and second sets of surveys were conducted by experienced raptor biologists via helicopter. These aerial surveys examined the entire Project corridor and 500-ft buffer. Areas along cliffs, linear stream corridors, and other topographic and landscape features, such as ornamental woodlands, parks, and golf courses where raptors would be expected to occur, were identified and mapped. Additionally any potential nest sites, such as trees, man-made structures (e.g. poles, towers, transmission lines, buildings, billboards) and rock formations were visually scanned from the air for indications of raptor activity.

The initial aerial surveys provided the best coverage of the Study Area given its extensive size, and enabled us to survey areas with limited or no ground accessibility. During these surveys, conspicuous raptors and other cliff-nesting birds with high nest-visibility were targeted. All active raptor nests or any observable nesting behaviors were identified, as well as inactive nests, which might serve as nest sites for raptors in future breeding seasons (Fuller and Mosher 1987; Andersen 2007).

The third and fourth sets of surveys were conducted on the ground to verify the aerial surveys, and inspect areas that were determined unsafe for aerial surveys due to close proximity to horses and other livestock, and residential housing. Ground surveys were also used to visit historic or known nesting territories, and to check the status of active nests.

Ground surveys by vehicle were conducted throughout the Study Area where accessible roads existed. Driving allowed the surveyors to approach any raptors or potential nests generally closer than when walking, to minimize disturbance. These road surveys were

conducted in both directions with vehicle speed limited to 5 mph wherever possible. Surveyors stopped frequently to scan trees or other features with binoculars and spotting scopes (Fuller and Mosher 1987; Andersen 2007).

We conducted walking surveys wherever roads were absent or impassible, and as a follow-up wherever a territory had been identified, but closer observation was required to confirm a suspected nest. Walking surveys also permitted detection of less-conspicuous raptors and nests, particularly in cavity trees, or where indications of nesting activity were not readily visible by other methods. Trees and other potential nest sites were surveyed from multiple fixed points, using binoculars and spotting scopes (77mm, 20x–60x). Observations were conducted quickly and carefully, from safe distances that minimized the likelihood of flushing adult birds off their nests. All surveys were conducted during times of favorable weather, avoiding adverse conditions, such as heavy sustained winds, prolonged rain, or fog, which might reduce accurate detection of raptor nesting activities (Fuller and Mosher 1987; Andersen 2007).

Indications of nesting activity, such as vocalizations of adults or young, and observations of perched or displaying adults, nests, young, or down feathers on or around nests were all recorded by the surveyors. Ancillary observations of non-nesting raptors present in the Study Area were also recorded. Thorough notes were taken on nest sites that included species, time and date, location, nesting stage, and behavioral observations of individuals. Location coordinates of nests were recorded with handheld Global Positioning System (GPS) units, or estimated on maps if the site was not fully accessible

GENERAL NESTING RAPTOR

SPECIES ACCOUNTS

The following section provides background information for other raptor species that we recorded in or around the Study Area; however, not all species listed here were detected nesting in the Study Area in 2012. This report does not include nesting results for the burrowing owl or golden eagle as those are being reported in separate stand-alone documents.

RED-TAILED HAWK

The red-tailed hawk, (*Buteo jamaicensis*) is the most common, large raptor in southwestern California. It is considered common throughout its broad range from Central Alaska south to Venezuela. It is also abundant in the local region, and will nest in all habitats where sufficient natural or man-made structures exist to support its nest. Nest sites can be located in a variety of different trees, including coast live oaks, sycamores, willows, and eucalyptus, on cliffs, and also on man-made structures such as power poles or buildings (Bloom 1980). This hawk is capable of great longevity, with the oldest known individual in California surviving in the wild 28 years 10 months (Bloom unpub.).

Red-tailed hawk breeding populations in Southern California are comprised mostly of resident birds that migrate primarily only during their first few years, although some adults may make substantial seasonal movements (Bloom unpub.). Typical egg laying occurs in early-mid March but can be as early as February and as late as early-mid April. Young individuals may disperse up to 1,000 miles from their natal site, but most return to breed within 50 miles of where they fledged (Bloom 1985). Wintering red-tailed hawks will often make protracted stays in many Southern California habitats, temporarily increasing local populations significantly.

Home range size varies from 1.6 to 2.4 km² in coastal Southern California (Bloom unpub.).

Red-tailed hawks are typically sit-and-wait predators that hunt from tall perches. It is a predator of primarily small mammals, including Audubon's cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), woodrats (*Neotoma* spp.), and Botta's pocket gopher (*Thomomys bottae*); snakes, including the gopher snake (*Pituophis catenifer*) and other larger species are also included in the prey base (Bloom 1980).

RED-SHOULDERED HAWK

The red-shouldered hawk (*Buteo lineatus*) is a typically solitary, medium-sized raptor with a distinct distribution division between its various subspecies. The geographically-isolated western subspecies, *Buteo lineatus elegans*, ranges from northern Baja California through California west of the Sierra Nevada, with recent range expansions into southern Oregon, Arizona, and east of the Sierra Nevada in California. Vagrant individuals have strayed as far as Washington, Nevada, Idaho, and Utah (Dykstra et al. 2008; Bloom et al. 2011).

In southwestern California, the red-shouldered hawk is a common resident that prefers dense deciduous riparian and oak woodland habitats. Locally, it is generally associated with linear-riparian habitats or urban landscapes with mature native or non-native trees.

It breeds from February to June in typically monogamous pairs. Nest sites are most often located in native trees such as sycamore, willow, coast live oak, but it will also use non-native trees within urban areas. In valleys of the Mojave and Sonoran Deserts, it frequently nests in riparian bosques and windbreaks around agricultural areas.

Home range size averages 1.01 km² for females and 1.21 km² for males in coastal Southern California, although these tend to contract during the breeding season. Resident individuals maintain territories year-round (Dykstra et al. 2008; Bloom et al. 1993; Bloom et al. 2011). Most young disperse fewer than 100 km, but instances of greater distances have been recorded (Bloom, et al. 2011).

Red-shouldered hawks are typically sit-and-wait predators that hunt by visually scanning for prey from a perch. They have a variable and opportunistic diet that consists of small

mammals such as the California vole (*Microtus californicus*), small or young birds, snakes and lizards, amphibians, crustaceans and other invertebrates (Dykstra et al. 2008; Bloom et al. 1993).

FERRUGINOUS HAWK

The ferruginous hawk (*Buteo regalis*) prefers open habitats such as grasslands, scrublands, and deserts. It breeds in the Great Basin and Great Plains regions of North America, and winters west, east, and south of its breeding range, including throughout California. It may roost communally on its wintering grounds (Bechard and Schmutz 1995).

In Southern California, the ferruginous hawk is generally observed in winter months, but during years with poor climate conditions, it may be seen as early as August or as late April. Nests are located on cliffs, trees, utility structures, or in buildings. Its breeding season can begin in March, with a typical clutch of 2 to 4 (Bechard and Schmutz 1995).

Ferruginous hawks will hunt from perches, the ground, and the air for mammal prey, which includes jackrabbits (*Lepus* spp.) and cottontails (*Sylvilagus* spp.), ground squirrels (*Spermophilus* spp.), and pocket gophers (*Thomomys* spp.) (Bechard and Schmutz 1995).

Conversion of open and grassland habitats to development and agriculture has likely been a significant factor contributing to the decline of ferruginous hawk populations (Bechard and Schmutz 1995).

The ferruginous hawk is on the CDFG Watch List⁴.

COOPER'S HAWK

The Cooper's hawk (*Accipiter cooperii*) is a medium-sized, slender-bodied, long-tailed raptor that breeds throughout most of the U.S., southern Canada, and northern Mexico and is a year-round resident species in coastal Southern California.

Cooper's hawks prefer deciduous, evergreen, and mixed woodland habitats, including riparian lowlands, oak woodlands, open and semi-arid woodlands, and will also occupy urban and suburban landscapes. It will often use the same territory each year to produce a single clutch of 3 to 5 eggs between late March and early May (Curtis et al. 2006).

Cooper's hawks often hunt from a concealed perch using a short, rapid attack to ambush prey. It may also hunt by coursing low through vegetation, or from high above ground. Preferred prey includes medium-sized songbirds such as towhees, doves, sparrows and starlings, as well as jays, crows, and small mammals, including deer mouse (*Peromyscus maniculatus*), squirrels (*Citellus* spp.), and rabbits (*Sylvilagus* spp.) (Curtis et al. 2006).

⁴ The birds on this Watch List are 1) not on the current Special Concern list but were on previous lists and they have not been state listed under CESA; 2) were previously state or federally listed and now are on neither list; or 3) are on the list of "Fully Protected" species.

Destruction or degradation of riparian woodland and other wooded habitats throughout southern California has reduced breeding populations of the Cooper's hawk. Despite habitat impacts, it has proven adaptable to urban environments and is expanding its range into suburban settings, although this may be a temporary expansion over time (Curtis et al. 2006).

The Cooper's hawk is on the CDFG Watch List.

PRAIRIE FALCON

The prairie falcon (*Falco mexicanus*) is an uncommon, generally solitary raptor inhabiting drier hill and mountain habitats of the western North America. It is characterized by having a relatively stocky body with a large, blocky head marked by white patches behind each eye and narrow, dark mustache.

Prairie falcons breed from from southwestern Canada into northern Mexico, extending from the Great Plains westward almost to the Pacific coast. It may be considered more of a "wanderer" rather than a true migrant, but it does disperse during winter in response to seasonal availability of food resources. In southwestern California, it is a resident and winter visitor (Steenhof 1998; Steenhof et al. 2005).

The prairie falcon prefers open habitats such as grasslands, desert scrub, sagebrush scrub, and agricultural areas. It is primarily a cliff-nester and selects nest sites located in in crevices, potholes, caves, or on ledges during its breeding season, which is from early March to May. As other falcons, it does not construct a nest, but may appropriate an old nest of another species such as the red-tailed hawk, common raven, or golden eagle, or simply utilize a shallow depression in a soft substrate. It may occasionally nest in trees, on buildings, or on other man-made structures (Steenhoff 1998; Baicich and Harrison 2005; Boyce 1987).

Prairie falcons forage widely for prey and hunt from perches, high-soaring flight, or low-active flight. Prey includes ground-nesting songbirds such as horned larks (*Eremophila alpestris*), mourning doves (*Zenaidura macroura*), meadowlarks (*Sturnella neglecta*), small mammals such as ground squirrels (*Spermophilus* spp.), Botta's pocket gophers (*Thomomys bottae*), woodrats (*Neotoma* spp.), and kangaroo rats (*Dipodomys* spp.), lizards, and insects. It will often cache prey within its nesting territory, particularly during brood-rearing (Steenhof 1998; Boyce 1985).

The prairie falcon is on the CDFG Watch List.

AMERICAN KESTREL

The American kestrel (*Falco sparverius*) is a diminutive falcon that is widespread and common across North America. It breeds from central Alaska south into Mexico. This small raptor is resident in southern California. It prefers open to semi-open habitats such as grasslands, deserts, oak savannas, and scrublands, but also occurs in agricultural areas, parklands and other suburban landscapes.

American kestrels are a secondary cavity-nester that will utilize natural tree hollows, cavities excavated by other birds such as woodpeckers, rock crevices, or man-made structures including birdhouses and buildings as nest sites, which may often be re-used in subsequent seasons (Smallwood and Bird 2002). Its breeding season extends from early April to early September, during which it will rear more than one brood per season, if adequate resources are available.

The longevity record for a wild individual is 11 years and 7 months (Smallwood and Bird 2002).

Primarily a perch hunter, the American kestrel also actively hunts by hovering while scanning the ground and dropping on its prey from the air. Prey includes a variety of insects and small rodents, passerine birds, and small reptiles and amphibians (Smallwood and Bird 2002).

The American kestrel has no status.

WHITE-TAILED KITE

The white-tailed kite (*Elanus leucurus*) is a small, but conspicuous raptor. Adults are characterized by long and narrow wings, white underparts, tail and face; with gray upperparts, black shoulder patches, and red eyes. It ranges from southwestern Washington to northern Baja California, and irregularly to southeastern Arizona, the Gulf Coast, peninsular Florida, and South America.

In southwestern California, the white-tailed kite occurs in primarily in low-elevation and foothill riparian strips and oak woodlands adjacent to grasslands, sage scrub, wetlands, or agricultural and ruderal fields that are suitable for foraging. It is resident raptor throughout most of its breeding range, but some range expansion occurs as a result of dispersal during the non-breeding season.

The white-tailed kite typically breeds in late winter to early spring and can produce more than one brood in a season, depending on available prey resources (Dunk 1995; Niemela 2007). Nest sites are located the tops of oaks, sycamores or other deciduous trees. Essential characteristics for nesting habitat are vegetation structure and prey availability, rather than tree species (Dunk 1995; Niemela 2007). It has been suggested it may become nomadic in response to shifting population peaks of the California vole, but the actual nature of such a migration remains unknown (Dunk 1995; Niemela 2007).

The white-tailed kite hunts in open habitats by hovering less than 100-ft above the ground while scanning for prey. It feeds almost exclusively on the California vole, but will also take the harvest mouse (*Reithrodontomys megalotis*), other small rodents, and occasional insects, birds, and reptiles (Dunk 1995).

Territory size is directly related to prey abundance, and territories can average from 0.29 km² to 0.44 km² in coastal southern California. White-tailed kites will often roost communally in the fall and winter, sometimes in large numbers (Dunk 1995; Niemela 2007).

The white-tailed kite experienced rapid decline in the mid to late 1900's and is considered vulnerable to extinction. Although it has rebounded, and even expanded, in some portions of its range, it remains threatened in coastal Southern California. The white-tailed Kite appears to be in decline again in this region, likely due to continuing habitat loss and more frequent extended periods of drought (Dunk 1995).

The white-tailed kite is a California Fully Protected Species.⁵

NORTHERN HARRIER

The northern harrier (*Circus cyaneus*) is an uncommon, slender-bodied, long-tailed and long-winged raptor. Also referred to as the "marsh hawk", the northern Harrier typically breeds in open habitats throughout the western and northern United States and Canada, extending south and east to northern Texas and Virginia. It winters in the southern United States to central America. During winter months, northern harriers may roost communally on the ground (Smith et al. 2011, Baicich and Harrison 2005, Davis and Niemela 2008).

Although the northern harrier ranges widely and appears to be nomadic, it maintains a year-round presence within its southern California breeding range. In southwestern California, it typically occurs in a variety of habitats such as freshwater marsh, wet meadow, annual and perennial grassland, sagebrush flats, desert sinks, margins of lakes, rivers and streams, and around agricultural fields.

Breeding generally begins in mid-March. Northern harriers construct their nests on the ground, making them vulnerable to trampling by livestock or destruction by vehicles, and land management practices such as mechanical weed control. Breeding pairs are known to often cache food when rearing young (Smith et al. 2011; Davis and Niemela 2008).

The northern harrier typically forages by coursing low over the ground while searching for small mammals and birds. Unlike most other hawks, it actively employs both auditory and visual cues to locate and capture prey. The California vole, deer mouse, waterbirds, and small songbirds comprise its primary diet. The northern harrier will sometimes subdue larger prey by drowning it.

⁵ DFG: Fully Protected: The classification of Fully Protected was the State's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts; White-tailed Kite, Golden Eagle, trumpeter swan, northern elephant seal and ring-tailed cat are the exceptions. The Fish and Game Code sections dealing with Fully Protected species state that these species "...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected" species, although take may be authorized for necessary scientific research. This language arguably makes the "Fully Protected" designation the strongest and most restrictive regarding the "take" of these species.

The northern harrier is still declining and has been extirpated from many locations (Sibley 2003; Smith et al. 2011; Davis and Niemela 2008).

The northern harrier is a California Species of Special Concern.⁶

GOLDEN EAGLE

The golden eagle (*Aquila chrysaetos*) inhabits open, semi-open habitats such as grasslands, scrublands, oak savannas, riparian woodlands, and deserts within mountainous and canyon terrain. It is mostly resident in Southern California, and generally does not migrate, although individuals may make seasonal elevational movements in order to exploit available resources (Kochert et al. 2002; Wheeler and Clark 2003).

The golden eagle breeds throughout most of western North America and south to central Mexico. Nests are typically located on cliff ledges or in large, tall trees. These are usually reused from year to year, and pairs may continue to add material to their nest year-round. Nesting may begin as early as late January, and last more than 6 months. A typical clutch contains 1 to 3 eggs (Kochert et al. 2002). Most individuals mature after 4 years of age and maintain their nesting territories once established.

Golden eagles will hunt from perches, and from high soaring or low-couring flight. They typically prey on small mammals such as jackrabbits and ground squirrels, as well as feeding on carrion (Kochert et al. 2002).

The longevity record for this species in the wild in North America is 23 years 10 months (Kochert et al. 2002).

This species is declining in many parts of its range as a result of human disturbance and habitat degradation or alteration.

The golden eagle is a California Fully Protected Species and USFWS Bird of Conservation Concern.

OSPREY

The osprey (*Pandion haliaetus*) is a large, long-winged raptor characterized by a distinctive pale gray head and underparts. In North America it ranges across Canada, the northwestern United States, and scattered locations along the Pacific, Atlantic, and Gulf Coasts, occurring in habitats that are near water bodies.

Historically, ospreys nested throughout much of California, but their numbers declined dramatically as a result of human activities in coastal areas. Recently they have resumed nesting in greater numbers in coastal Southern California (Poole et al. 2002). Nests are

⁶ DFG: SSC: California Species of Special Concern. It is the goal and responsibility of the CDFG to maintain viable populations of all native species. To this end, the Department has designated certain vertebrate species as "Species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

typically located at the tops of trees, on cliffs or ledges, and increasingly on man-made structures such as communications towers, utility poles, and constructed platforms specifically intended as nest sites. The typical breeding season would occur between March and June.

Ospreys consume a wide variety of fish species found in salt-water marshes, lagoons, estuaries, rivers, marshes, reservoirs, lakes and ponds. It hunts in flight and from perches overlooking open water (Poole et al. 2002).

Longevity records for osprey from North America include a 23 year old female and a 25 year old male (Poole et al. 2002).

The osprey is on the CDFG Watch List.

TURKEY VULTURE

The turkey vulture (*Cathartes aura*) is a common, widespread raptor that breeds widely from southern Canada to South America. It is migratory in parts of its range, but is resident in coastal southern California. It will utilize a wide variety of open and forested habitats where abundant carrion and sites for perching, roosting, and nesting are available. It prefers to roost communally in stands of trees, rocky outcrops, or structures (Kirk and Mossman 1998).

Nest sites can include sheltered crevices on cliffs or rocky ledges, hollow logs and stumps, or buildings subject to little human or animal disturbance. Nesting occurs as early as February, with pairs producing a typical clutch of 2 eggs.

The turkey vulture is almost exclusively an opportunistic scavenger of carrion, and readily feeds on carcasses of mammals, birds, and reptiles that are encountered. On rare occasions it will also take small live animals. Its flexible adaptability has allowed the Turkey Vulture to exploit both natural and human-altered landscapes (Kirk and Mossman 1998).

BARN OWL

The barn owl (*Tyto alba*) is a medium-sized raptor that, due to its great adaptability, is the most widespread of all owls. It Ranges from southwestern Canada south to Central America, and from the Pacific Coast east across the southern United States, and north and east to southeastern Canada. It tends to avoid mountainous or heavily forested regions throughout its range. The barn owl is resident generally within its breeding range, although northern populations may migrate to areas of more reliable resources during the year (Sibley 2003; Marti et al. 2005).

The barn owl is found in a wide variety of rural and urban habitats. Usually solitary, it prefers open habitats such as grasslands, scrublands, deserts, marshes, or agricultural fields. They also occur in suburban and metropolitan areas, wherever natural or man-made shelter is present for nesting and roosting. (Marti et al. 2005).

Nest sites can be located in tree cavities, rock and cliff crevices, buildings, nest boxes, or other structures. The barn owl does not construct its own nest, but opportunistically uses any sheltered depression or platform with existing debris. In coastal Southern California, it can nest at any time of year, and can rear two or more broods per year (Marti et al. 2005). It often caches prey around its nest site during the breeding season (Marti et al. 2005).

The barn owl typically hunts in flight or from perches. It primarily takes small mammal prey, including California vole and pocket mouse (*Perognathus* spp.), but may also hunt small birds, reptiles, amphibians and insects.

The barn owl has no status.

GREAT HORNED OWL

The great horned owl (*Bubo virginianus*) is a large, long-lived raptor that is most readily recognized by its size and prominent ear tufts. It has the largest range of any North American owl, occurring in a wide variety of habitats such as grassland, oak and riparian woodland, deserts, and even suburban areas.

The great horned owl will nest in trees, cavities, ledges, caves, buildings, or rarely on open ground. It does not construct its nest, but instead appropriates abandoned nests of other large birds. This species is highly territorial and pairs will occupy their territories year-round. In Southern California, nesting can begin as early as November, although nesting typically occurs December to January (Houston et al. 1998; Baicich and Harrison 2005). If prey is abundant, it may cache food at the nest (Houston et al. 1998).

Home range size in coastal Southern California averages 1.80 km² for females and 4.25 km² for males, each range having much smaller core areas (Houston et al. 1998; Bennett and Bloom 2005).

The great horned owl is a crepuscular and nocturnal hunter with the broadest diet of any North American owl. It will take mammals such as rabbits, skunks, rodents, large and small birds, reptiles, amphibians, and invertebrates.

The great horned owl has no status.

LONG-EARED OWL

The long-eared owl (*Asio otus*) is a small, slender-bodied raptor with prominent ear tufts that is uncommon to rare in southwestern California. It ranges from western Canada south to northern Baja California and east to New Mexico, across central Canada and the northern United States, and from southeastern Canada south to Virginia. The long-eared Owl may be either nomadic or migratory. Some individuals will travel long distances during winter to areas of reliable resources. Southern California breeding populations are principally resident, but may make seasonal elevational movements. Winter migrants augment local population numbers during some part of the year (Marks et al. 1994; Hunting 2008).

In Southern California, long-eared owls nest primarily in wooded foothills and inland valleys, and also in wooded washes and oases of desert areas. The typical nesting season occurs between February and June. The species prefers closed-canopy oak and riparian woodlands, or dense and brushy vegetation near open grassland, sagebrush scrub, desert scrub, and agricultural fields. It typically nests in tree cavities or cliffs, often appropriating abandoned raptor nests, squirrel and woodrat nests, or occasionally it will use hollows on the ground (Marks et al. 1994; Hunting 2008).

The long-eared owl is generally an active-search hunter that forages by flying low over open ground and occasionally hovering while searching for prey, although it will also hunt from a perch. In coastal Southern California, it preys primarily on small rodents and occasional songbirds (Hunting 2008).

The long-eared owl has experienced extensive declines in coastal southern California due to substantial loss of woodland and grassland habitats.

The long-eared owl is a California Species of Special Concern.

COMMON RAVEN

Although the common raven (*Corvus corax*) is not a raptor, it is often nests on utility poles, and is therefore included in this report. It occurs throughout Canada south through most of the western United States, and is resident throughout most of this range. The common raven experienced an earlier decline in many parts of its range, but has recently rebounded in most regions.

In parts of southwestern California, it has benefited from human expansion, particularly due to resources offered by open landfills and the introduction of water into desert landscapes. Common ravens have become a pest species due to their persistent depredation of certain threatened and endangered vertebrates that negatively affect their recovery (Sibley 2003; Boarman and Heinrich 1999).

Common ravens usually occur in pairs or in small groups in almost all terrestrial habitats such as forest, arid brushland, grassland, deserts, coastal and mountain regions, and urban areas. The common raven constructs large, stick nests on rock ledges, cliffs, trees, and various man-made structures (Boarman and Heinrich 1999).

The common raven is a general omnivore with a diet that can vary substantially in response to regional food availability and time of year. It will opportunistically scavenge on carcasses or garbage, and also actively hunts and pirates food items that are cached on the ground. Common ravens often forage in groups, and will prey upon various rodents, nestling birds, reptiles and amphibians, and insects (Boarman and Heinrich 1999).

The common raven has no status.

RESULTS

SWAINSON'S HAWK

During Spring 2012, numerous Swainson's hawks were encountered migrating north on three dates (Table C, Figures 2 and 3). No individuals were ever detected perched in the Study Area, or observed engaged in any breeding behaviors such as copulation, nest construction, or courtship displays.

Table C. Swainson's Hawk Observations

2012 Date	Surveyor	Location	UTM		Observation
3/28	JK	San Timoteo Cyn	485661	3760580	Kettle of at least 4 SHWA's thermalling heading northwest
3/31	DC	South Loma Linda	476767	3766137	Kettle of at least 6 SWHA's thermalling heading north and west
4/13	JK	North Beaumont	504963	3756274	Group of 3 SWHA's thermalling heading north and west

Surveyor: DC = Dave Compton; JK = Jeff Kidd

GENERAL NESTING RAPTORS

Figure 2, Sheets 1–9 is a map of the raptor survey results.

RED-TAILED HAWK

A total of 45 active red-tailed hawk nests were identified within the ROW and the 500-ft buffer of the Study Area (Figure 2).

RED-SHOULDERED HAWK

The red-shouldered hawk was not detected nesting within the ROW or 500-ft buffer of the Study Area, however we identified at least 11 active territories. Six (6) of these were within San Timoteo Canyon between the San Bernardino County Flood Control Basins and the El Casco Substation.

FERRUGINOUS HAWK

The ferruginous hawk was detected within the ROW near Banning. Three (3) individuals two (2) after second-year (ASY) adults, and one (1) hatch-year (HY) juvenile) were frequently observed foraging within the same grassland location immediately west of the Morongo Reservation in Banning. On March 29, 2012, the juvenile was found dead within the ROW and immediately reported by LSA field biologists to SCE. The carcass did not exhibit signs of visible trauma.

COOPER'S HAWK

The Cooper's hawk was detected both within and adjacent to the Project area. A total of seven (7) nesting pairs were identified during the raptor surveys. Locations of these pairs were: 1) along the Whitewater River outside the Project area; 2) 0.4 miles south of the ROW in an urban area in eastern Banning; 3) 0.3 miles north of the ROW in native oak woodland within a narrow, north/south-oriented canyon in Banning; 4) 0.3 miles south of the ROW within eucalyptus woodland in Beaumont; 5) within the ROW east of the El Casco Substation in native oak woodland; and 6) two pairs north of the ROW within San Timoteo Canyon. Only one pair of these seven was actually located within the ROW and 500-ft buffer of the Study Area.

PRAIRIE FALCON

The prairie falcon was detected within the Project area. We identified one (1) prairie falcon nest in the Badlands east of Redlands Boulevard and south of San Timoteo Canyon Road. This nest was located on a south-facing cliff just south of the ROW within the Swainson's Hawk Study Area (Figure 2). Perched and/or foraging individuals were also frequently observed within the ROW on the Morongo Reservation and in several locations west of Whitewater River.

AMERICAN KESTREL

The American kestrel was detected nesting within the ROW or 500-ft buffer of the Study Area. One (1) pair was nesting within the ROW east of the El Casco Substation. No other active American kestrel nests were observed within the Study Area.

WHITE-TAILED KITE

The white-tailed kite was detected within the Study Area over the hills west of the San Gorgonio River, but nesting was not confirmed.

NORTHERN HARRIER

The northern harrier was detected during both vehicle and walking surveys in the Badland areas south of San Timoteo Canyon; however, nesting was not confirmed. Northern harrier nests are constructed on the ground and are difficult to locate. Behaviors indicating presence of a nest or that breeding may have occurred were not observed.

GOLDEN EAGLE

The golden eagle was detected within the Study Area; however, no nests were located during the breeding season. Perched individuals were recorded on SCE towers located in the Whitewater River area and on and just west of the Morongo Reservation.

OSPREY

The osprey was detected in the Project area. We documented osprey during early spring at El Casco Lakes and the Fisherman's Retreat facility south of San Timoteo Canyon Road, and perched on a transmission tower in the ROW in northwestern Banning; however, no nests were located in the Study Area.

TURKEY VULTURE

The turkey vulture was detected within the ROW or the 500-ft buffer. One (1) active nest site was recorded within the Study Area located on a southwest-facing cliff near the prairies falcon nest reported above. One (1) young was observed near-fledging and based on the age and behavior of the young and adults, it is expected that this nest site was successful in 2012. In addition, turkey vultures were observed flying overhead (foraging) and perched on transmission line towers and wooden poles within the Study Area.

BARN OWL

The barn owl was detected within the the 500-ft buffer, and two (2) nests were found. While surveying the ½-mile Swainson's Hawk Study Area, several possible nest and/or roost sites were located in cliffs in the San Timoteo Badlands portion of the Study Area, but no sign of nesting was confirmed.

GREAT-HORNED OWL

The great-horned owl was detected within the ROW or the 500-ft buffer. Three (3) great-horned owl nests were recorded on the ROW transmission towers. During surveys in the Swainson's Hawk Study Area, five (5) additional nests were recorded west of Banning. Three (3) of these were located in cliffs and one (1) was in a eucalyptus grove.

LONG-EARED OWL

The long-eared owl was not detected in any location associated with the Project. No significant nesting habitat occurs within the ROW or the 500-ft buffer.

COMMON RAVEN

The common raven was detected nesting in towers and other structures within the ROW and 500-ft buffer. A total of 22 active nests were recorded on transmission towers, making it the second most-frequent large bird nesting within the Project area after red-tailed hawk (Figure 2).

CONCLUSIONS

1. The Swainson's hawk did not nest within the Study Area in 2012, although suitable habitat, including some high-quality sites in the central portions of the Study Area between the west end of Morongo and west of the badlands near Loma Linda, was identified (Figure 2).
2. The Study Area contains suitable foraging habitats for the red-tailed hawk and most of the tall nesting structures supporting the dozens of active nests recorded. It is expected that red-tailed hawks will continue to be present during and after Project implementation..
3. The Study Area is used by red-shouldered hawk for activities other than nesting, but it does not contain nesting habitat preferred by this hawk.
4. The ferruginous hawk is a migrant raptor in Southern California and is therefore unlikely to be significantly affected by the Project.

5. The frequency of prairie falcon observations around the Morongo Reservation and Whitewater River suggest that a second nest was located north of the Study Area in the nearby foothills; however, the location of this suspected nest was not determined.
6. The Study Area generally lacks appropriate nesting habitat to attract breeding American kestrels; however, many of the existing towers have platforms near their top that could provide ledge-type nesting habitat.
7. The white-tailed kite could potentially occupy the Study Area from Banning west through the badlands when rodent prey is at peak abundance. Because kite populations are cyclical in response to prey abundance, it is possible that nesting within the ROW or woodlands adjacent to the ROW may occur in the future.
8. The Study Area from Banning westward contains suitable grassland habitat for the northern harrier; however, it is not expected that the existing habitat would support more than a few territories.
9. The golden eagle did not nest within the Study Area, but was recorded during surveys. These observations were of likely resident birds. Breeding adults are known to nest north of the Study Area and in the Whitewater River watershed and in mountains north of the Morongo Reservation (Kidd unpublished). Although golden eagle is known to nest in utility easements throughout Southern California deserts and wildlands, none are known to nest within the Project ROW or on the SCE transmission towers.
10. The Southern California osprey nesting population is increasing and it is possible, however, very unlikely, that future nesting would occur near the El Casco Substation or at the two nearby recreational ponds along San Timoteo Canyon Road.
11. The turkey vulture likely had multiple nest sites in the vicinity of the Study Area in areas that support cliffs and rock outcrops. Further aerial and pedestrian surveys with a significantly increased level of effort could identify additional nest locations, although nests are unlikely to occur within the Study Area.
12. The barn owl is generally a cavity-nester and suitable habitat occurs within the Study Area, particularly in any structure or grove of trees. This species is not expected to nest on transmission towers; however, it is possible, but highly unlikely, that abandoned common raven nests on transmission towers may be appropriated as nest sites.
13. The great horned owl nesting population can change significantly from year to year due to: (1) the number of available nest sites on the transmission towers; (2) changes in the number of inactive red-tailed hawk or common raven nests; however, these are not preferred sites; and (3) food resources.
14. The long-eared owl is not expected to nest within the Study Area; however, there is an oak grove with suitable nesting habitat east of the El Casco Substation that could be occupied in the future. The ½-mile Swainson's Hawk Study Area contains additional suitable nesting habitats, particularly the riparian woodland associated with San Timoteo Creek north of the Study Area.
15. The common raven nesting population is expected to remain stable within the Study Area; however, declines in local red-tailed hawk and great horned owl populations could translate to an increased common raven population.

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APPENDIX A

FIGURES

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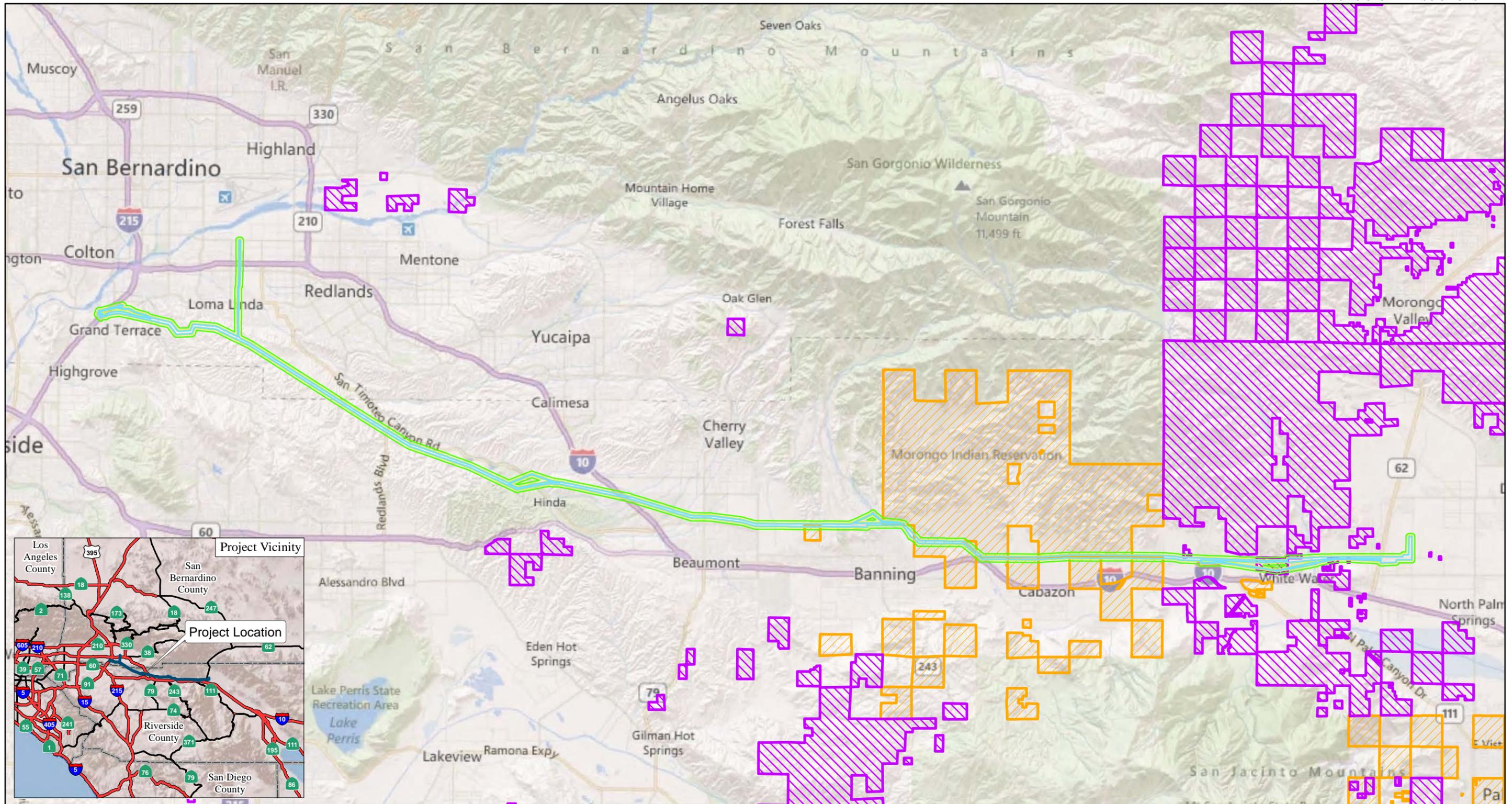
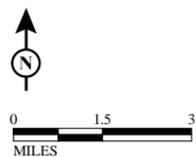


FIGURE 1

LEGEND

- Transmission Right-of-Way
- 100' from Right-of-Way
- 500' from Right-of-Way
- Morongo Indian Reservation Lands
- U.S. Bureau of Land Management Lands

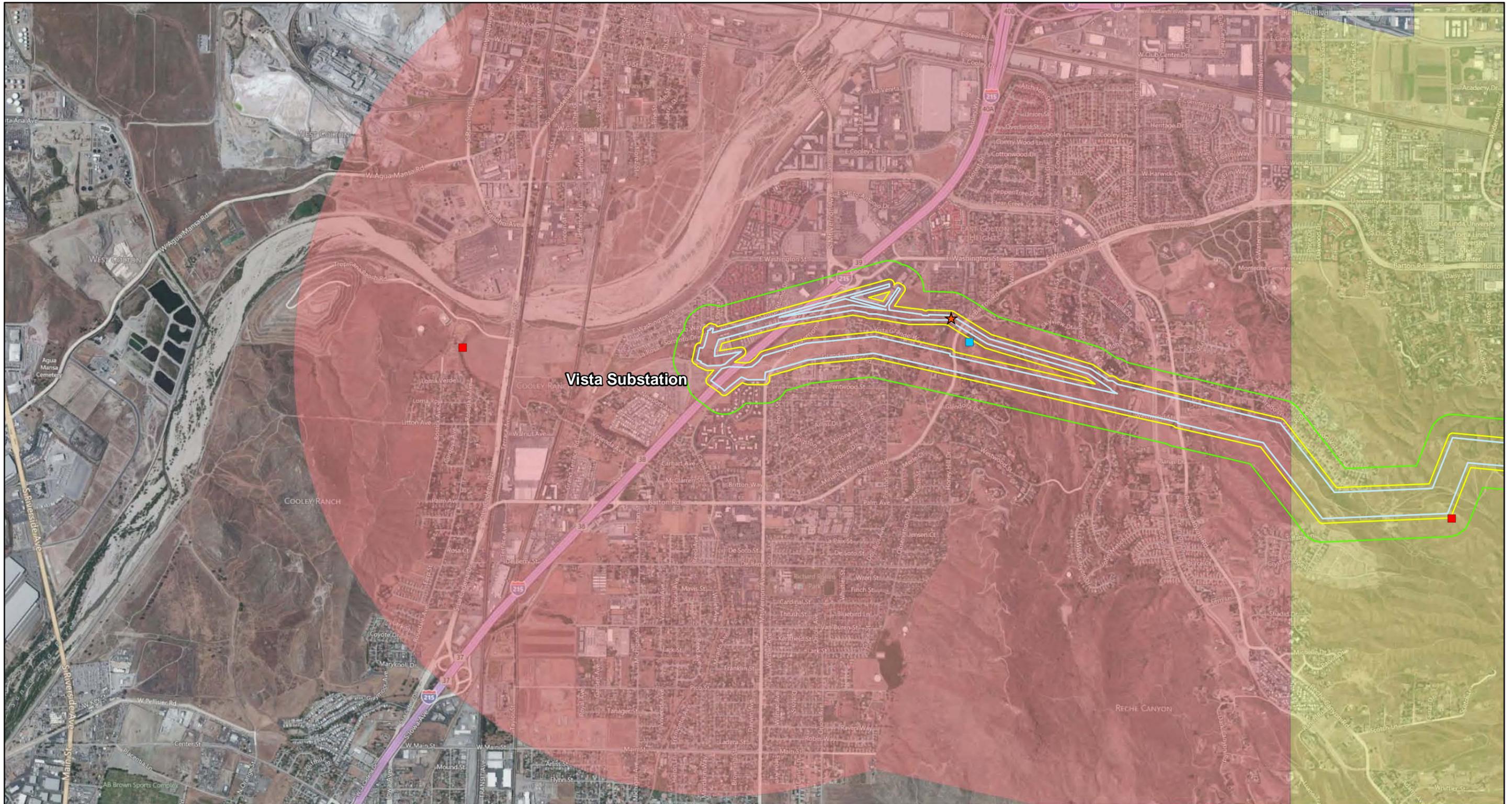
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SOURCE: Bing Maps (c.2010), SCE (9/2011, 11/2011)

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LEGEND

- Transmission Right-of-Way
- 100' from Right-of-Way
- 500' from Right-of-Way

Nest or Observation Area

- Barn Owl
- Cooper's Hawk
- Ferruginous Hawk
- ▲ Golden Eagle
- ▲ Great Horned Owl
- ▲ Northern Harrier

Osprey

- ▲ Prairie Falcon
- Red-Tailed Hawk
- Swainson's Hawk
- ★ Unknown Species
- ◆ White-Tailed Kite

Swainson's Hawk Habitat and 1/2 Mile Survey Area

- High Quality Habitat
- Moderate Quality Habitat
- Low-Moderate Quality Habitat

- Morongo Indian Reservation Lands
- U.S. Bureau of Land Management Lands

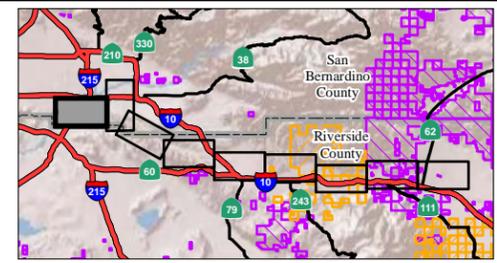
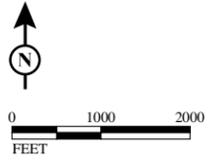


FIGURE 2
Sheet 1 of 9

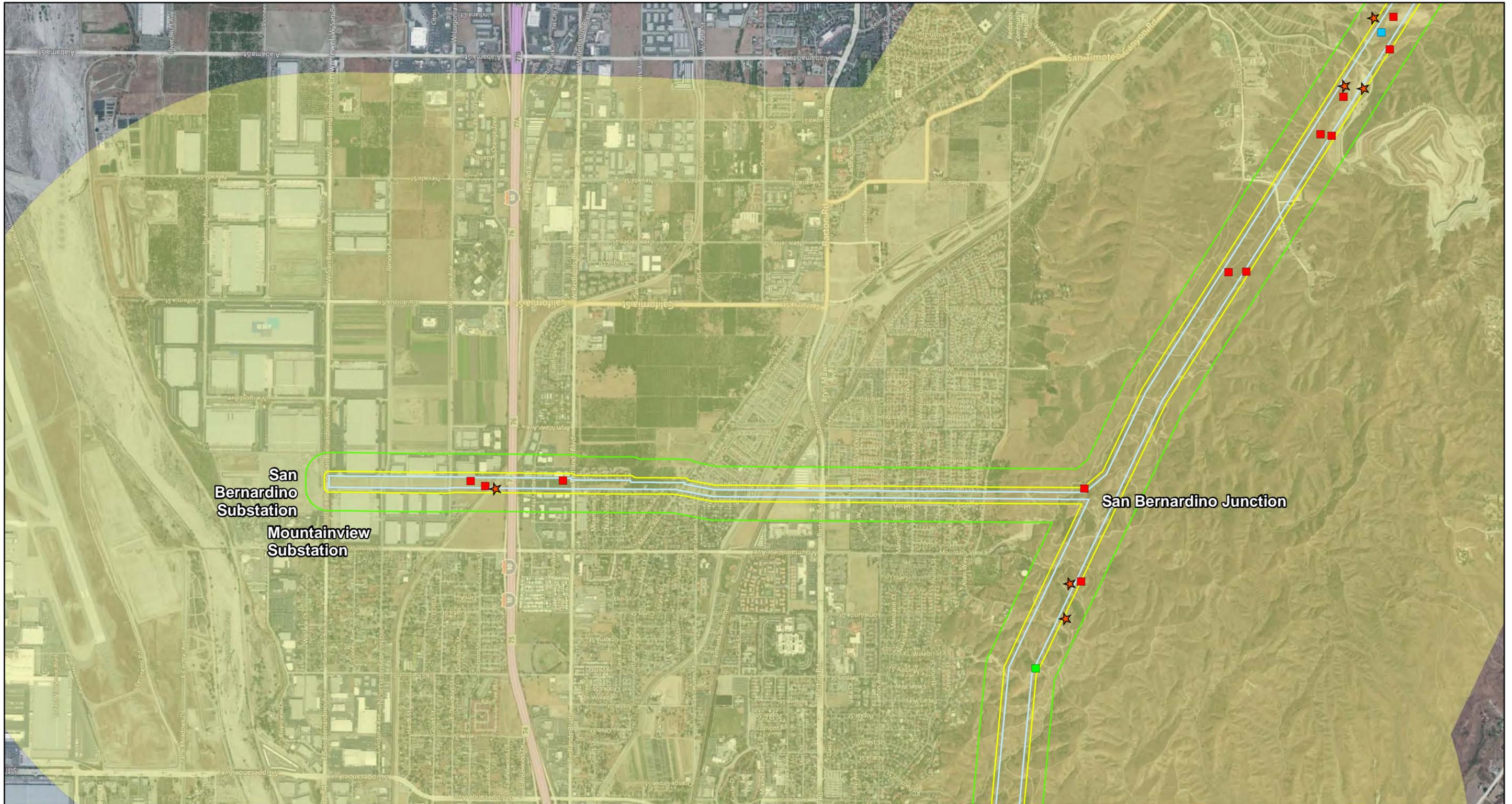
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Raptor Survey Results



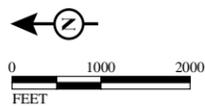
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LEGEND

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|---------------------------|--------------------------|-------------------|--|--------------------------------------|
| Transmission Right-of-Way | Nest or Observation Area | Osprey | Swainson's Hawk Habitat and 1/2 Mile Survey Area | Morongo Indian Reservation Lands |
| 100' from Right-of-Way | Barn Owl | Prairie Falcon | High Quality Habitat | U.S. Bureau of Land Management Lands |
| 500' from Right-of-Way | Cooper's Hawk | Red-Tailed Hawk | Moderate Quality Habitat | |
| | Ferruginous Hawk | Swainson's Hawk | Low-Moderate Quality Habitat | |
| | Golden Eagle | Unknown Species | | |
| | Great Horned Owl | White-Tailed Kite | | |
| | Northern Harrier | | | |



SOURCE: SCE (9/2011, 11/2011)

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Proponent's Environmental Assessment
West of Devers Upgrade Project

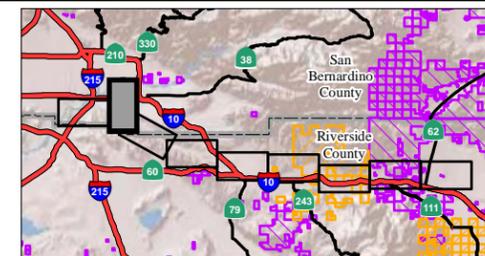
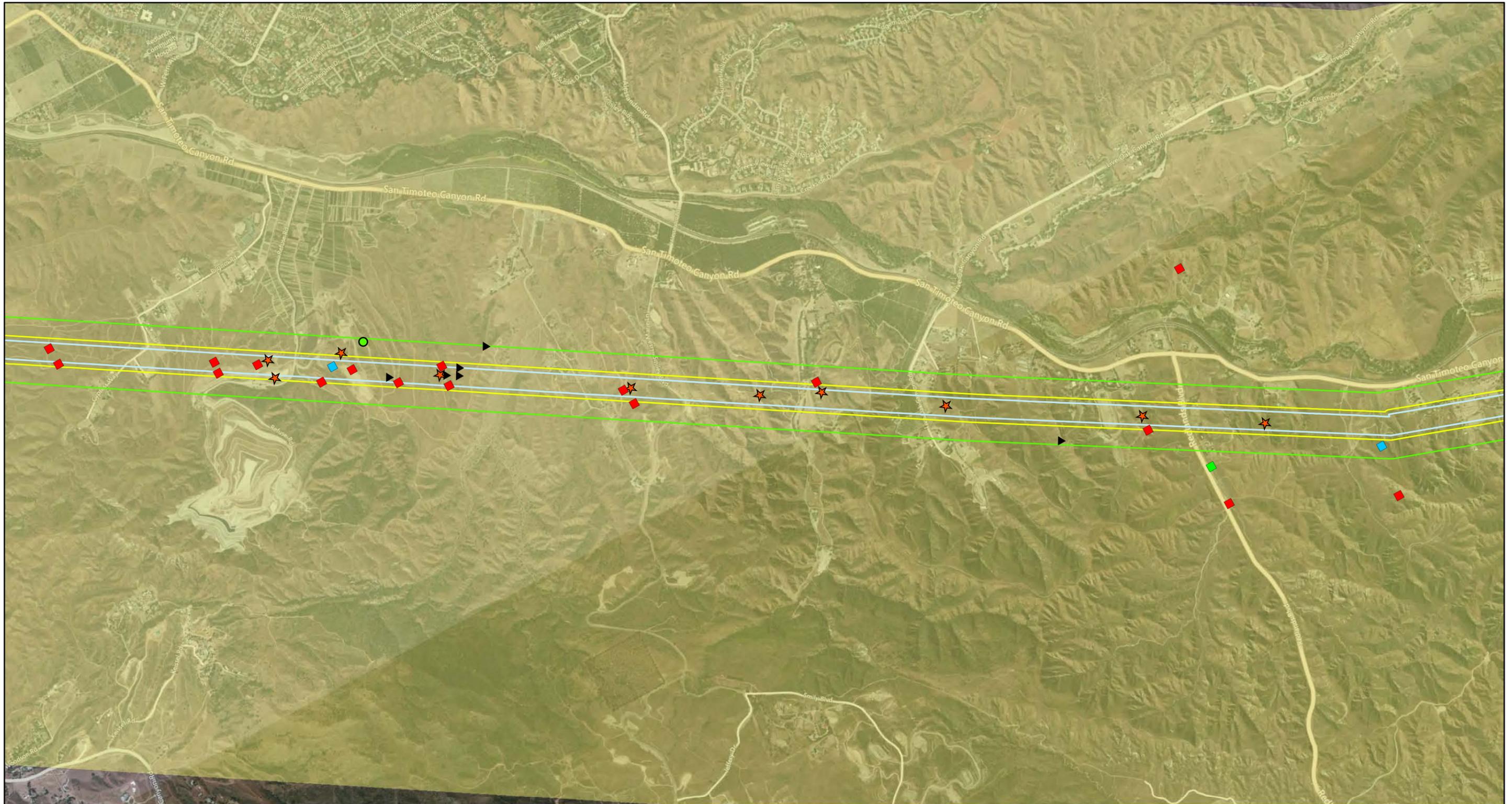


FIGURE 2
Sheet 2 of 9

PROTECTED MATERIALS
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West of Devers Project
Raptor Survey Results

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LEGEND

- Transmission Right-of-Way
- 100' from Right-of-Way
- 500' from Right-of-Way

Nest or Observation Area

- Barn Owl
- ▲ Cooper's Hawk
- Ferruginous Hawk
- ▲ Golden Eagle
- ▲ Great Horned Owl
- ▲ Northern Harrier

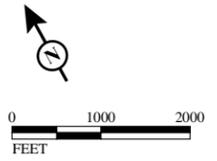
Osprey

- ▲ Prairie Falcon
- ◆ Red-Tailed Hawk
- Swainson's Hawk
- ★ Unknown Species
- ◆ White-Tailed Kite

Swainson's Hawk Habitat and 1/2 Mile Survey Area

- High Quality Habitat
- Moderate Quality Habitat
- Low-Moderate Quality Habitat

- Morongo Indian Reservation Lands
- U.S. Bureau of Land Management Lands



SOURCE: SCE (9/2011, 11/2011)

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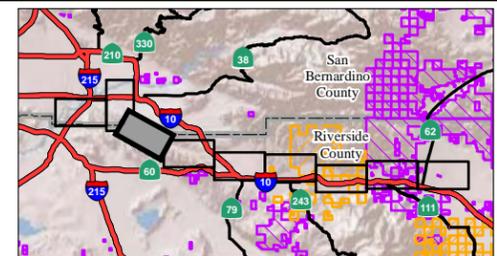


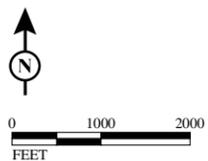
FIGURE 2
Sheet 3 of 9

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LEGEND				
Transmission Right-of-Way	Nest or Observation Area	Osprey	Swainson's Hawk Habitat and 1/2 Mile Survey Area	
100' from Right-of-Way	Cooper's Hawk	Prairie Falcon	High Quality Habitat	Morongo Indian Reservation Lands
500' from Right-of-Way	Ferruginous Hawk	Red-Tailed Hawk	Moderate Quality Habitat	U.S. Bureau of Land Management Lands
	Golden Eagle	Swainson's Hawk	Low-Moderate Quality Habitat	
	Great Horned Owl	Unknown Species		
	Northern Harrier	White-Tailed Kite		



SOURCE: SCE (9/2011, 11/2011)

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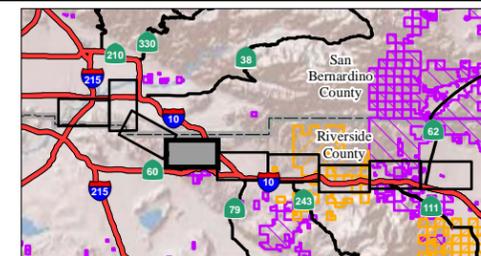
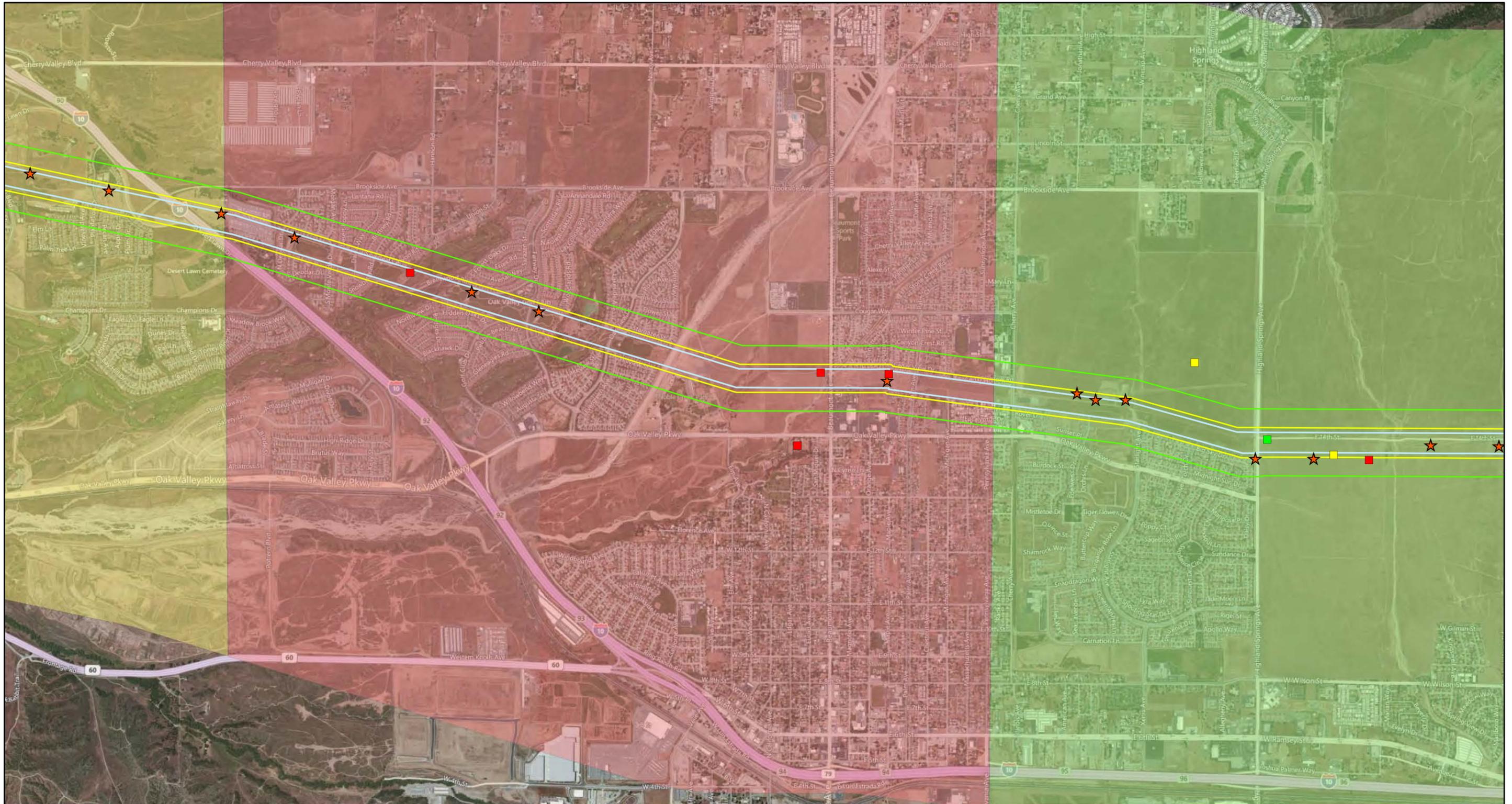


FIGURE 2
Sheet 4 of 9

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LEGEND

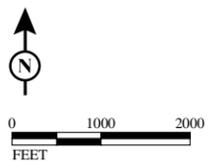
- Transmission Right-of-Way
- 100' from Right-of-Way
- 500' from Right-of-Way

- Nest or Observation Area
- Barn Owl
- Cooper's Hawk
- Ferruginous Hawk
- ▲ Golden Eagle
- ▲ Great Horned Owl
- ▲ Northern Harrier

- ◆ Osprey
- ▲ Prairie Falcon
- Red-Tailed Hawk
- Swainson's Hawk
- ★ Unknown Species
- ◆ White-Tailed Kite

- Swainson's Hawk Habitat and 1/2 Mile Survey Area
- High Quality Habitat
- Moderate Quality Habitat
- Low-Moderate Quality Habitat

- Morongo Indian Reservations Lands
- U.S. Bureau of Land Management Lands



SOURCE: SCE (9/2011, 11/2011)

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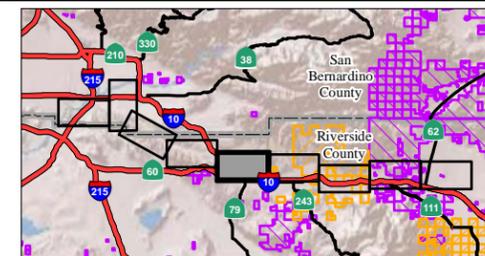
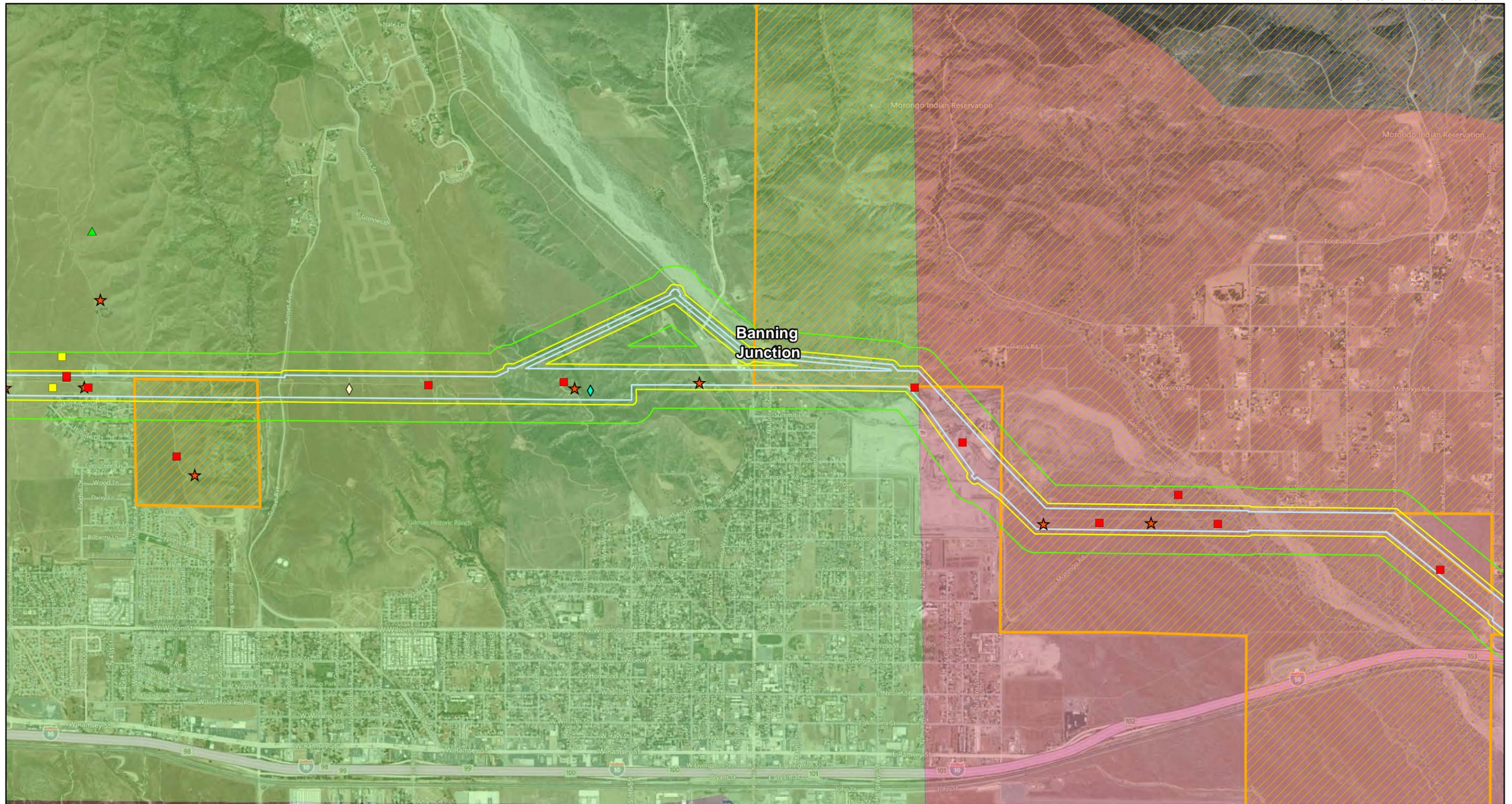


FIGURE 2
Sheet 5 of 9

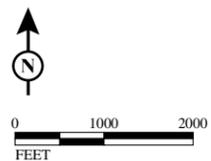
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West of Devers Project
Raptor Survey Results

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LEGEND		Swainson's Hawk Habitat and 1/2 Mile Survey Area	
	Transmission Right-of-Way		Osprey
	100' from Right-of-Way		Prairie Falcon
	500' from Right-of-Way		Red-Tailed Hawk
	Nest or Observation Area		Swainson's Hawk
	Barn Owl		Unknown Species
	Cooper's Hawk		White-Tailed Kite
	Ferruginous Hawk		
	Golden Eagle		
	Great Horned Owl		
	Northern Harrier		
			High Quality Habitat
			Moderate Quality Habitat
			Low-Moderate Quality Habitat
			Morongo Indian Reservation Lands
			U.S. Bureau of Land Management Lands



SOURCE: SCE (9/2011, 11/2011)

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Proponent's Environmental Assessment
West of Devers Upgrade Project

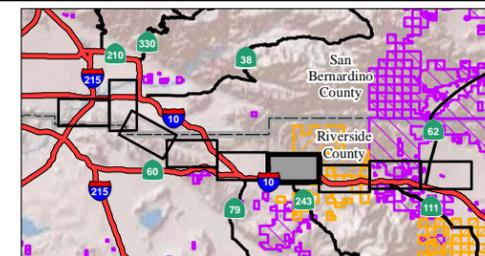
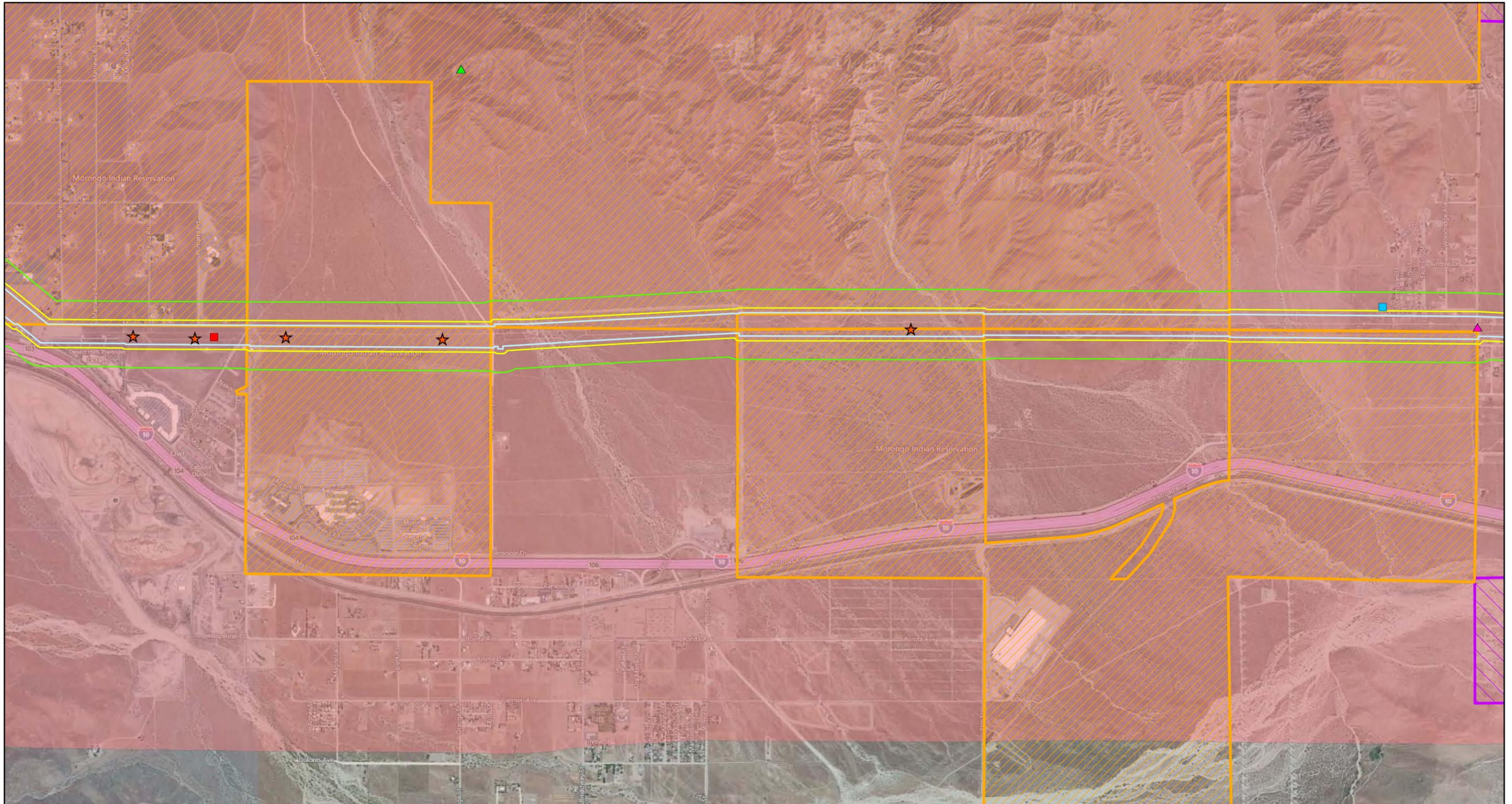


FIGURE 2
Sheet 6 of 9

PROTECTED MATERIALS
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West of Devers Project
Raptor Survey Results

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LEGEND

- Transmission Right-of-Way
- 100' from Right-of-Way
- 500' from Right-of-Way

Nest or Observation Area

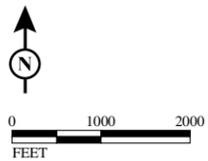
- Barn Owl
- Cooper's Hawk
- Ferruginous Hawk
- ▲ Golden Eagle
- ▲ Great Horned Owl
- ▲ Northern Harrier

- ◆ Osprey
- ▲ Prairie Falcon
- Red-Tailed Hawk
- Swainson's Hawk
- ★ Unknown Species
- ◆ White-Tailed Kite

Swainson's Hawk Habitat and 1/2 Mile Survey Area

- High Quality Habitat
- Moderate Quality Habitat
- Low-Moderate Quality Habitat

- Morongo Indian Reservation Lands
- U.S. Bureau of Land Management Lands



SOURCE: SCE (9/2011, 11/2011)

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Proponent's Environmental Assessment
West of Devers Upgrade Project

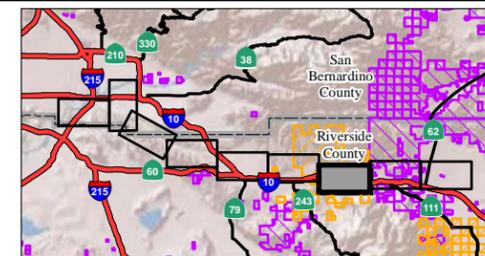
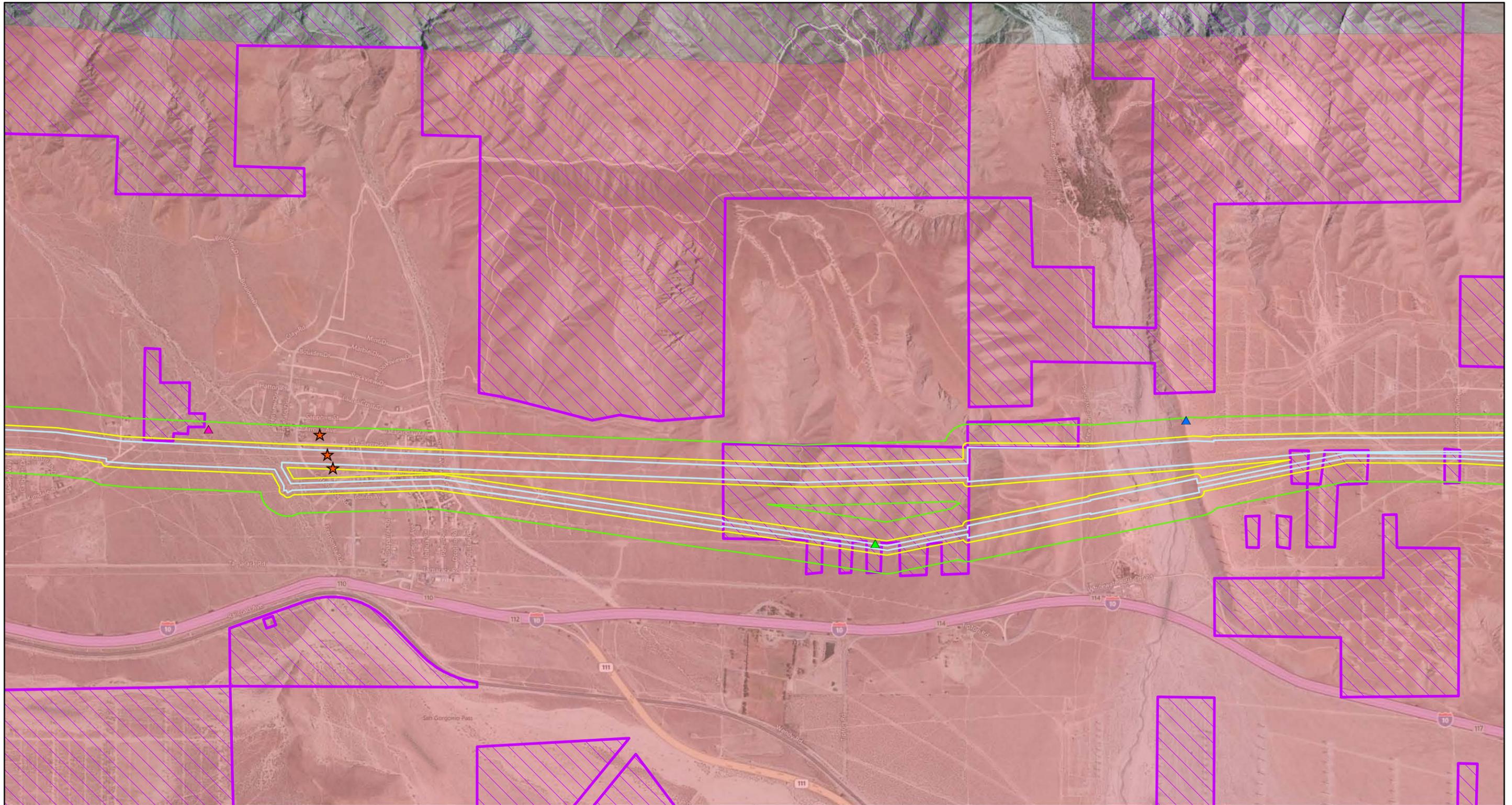


FIGURE 2
Sheet 7 of 9

PROTECTED MATERIALS
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West of Devers Project
Raptor Survey Results

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LEGEND

- Transmission Right-of-Way
- 100' from Right-of-Way
- 500' from Right-of-Way

Nest or Observation Area

- Barn Owl
- Cooper's Hawk
- Ferruginous Hawk
- ▲ Golden Eagle
- ▲ Great Horned Owl
- ▲ Northern Harrier

- ◇ Osprey
- ▲ Prairie Falcon
- Red-Tailed Hawk
- Swainson's Hawk
- ★ Unknown Species
- ◇ White-Tailed Kite

Swainson's Hawk Habitat and 1/2 Mile Survey Area

- High Quality Habitat
- Moderate Quality Habitat
- Low-Moderate Quality Habitat

- Morongo Indian Reservation Lands
- U.S. Bureau of Land Management Lands



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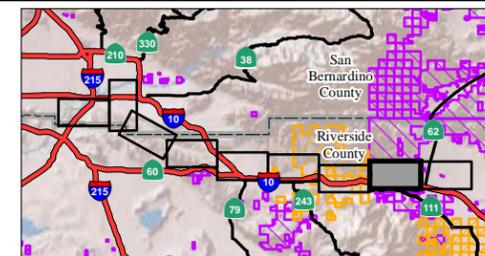
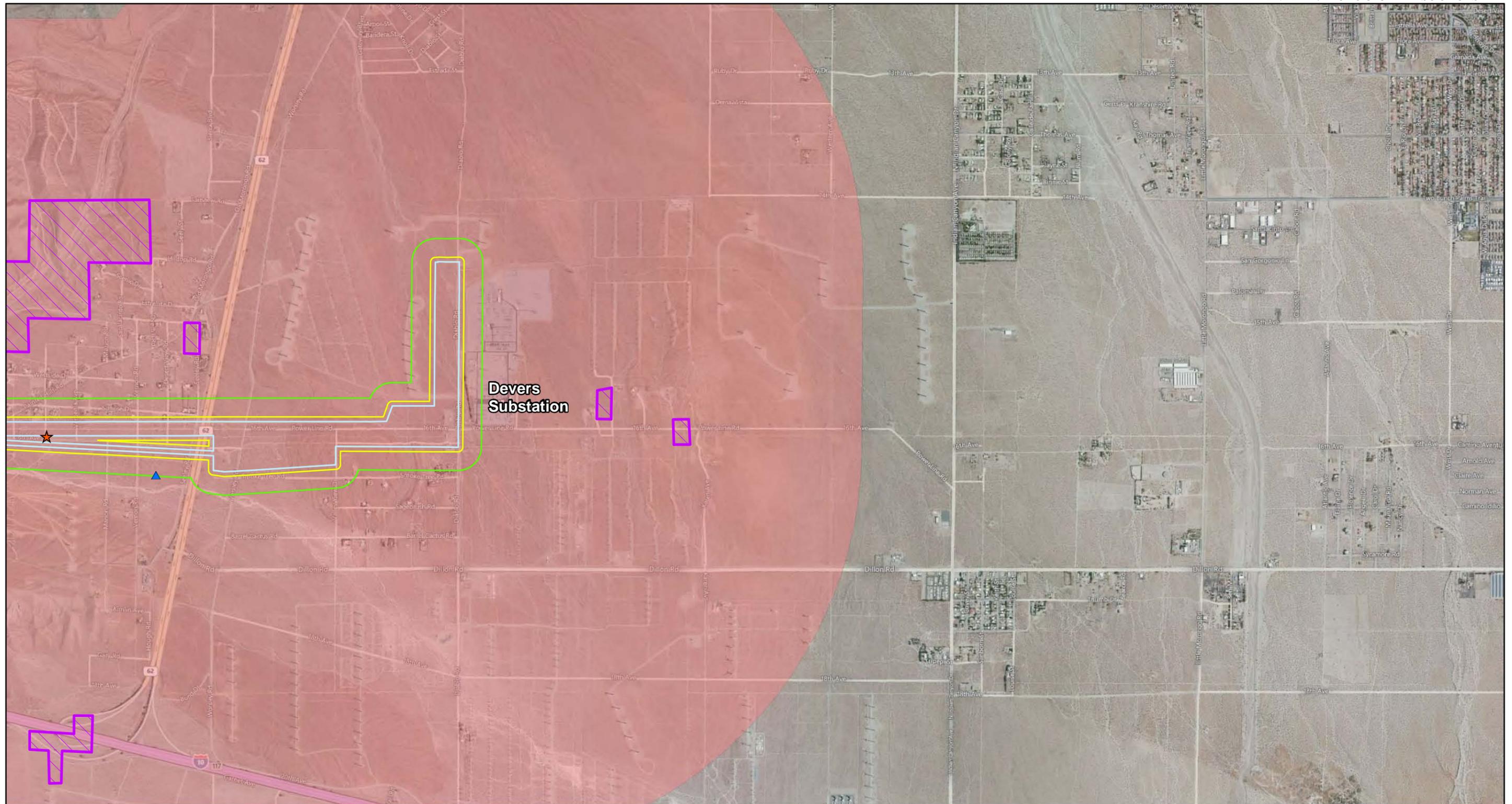


FIGURE 2
Sheet 8 of 9

PROTECTED MATERIALS
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LEGEND

- Transmission Right-of-Way
- 100' from Right-of-Way
- 500' from Right-of-Way

Nest or Observation Area

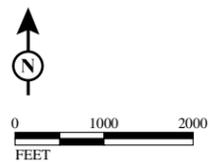
- Barn Owl
- Cooper's Hawk
- Ferruginous Hawk
- ▲ Golden Eagle
- ▲ Great Horned Owl
- ▲ Northern Harrier

- ◆ Osprey
- ▲ Prairie Falcon
- Red-Tailed Hawk
- ★ Swainson's Hawk
- ★ Unknown Species
- ◆ White-Tailed Kite

Swainson's Hawk Habitat and 1/2 Mile Survey Area

- High Quality Habitat
- Moderate Quality Habitat
- Low-Moderate Quality Habitat

- Morongo Indian Reservation Lands
- U.S. Bureau of Land Management Lands



SOURCE: SCE (9/2011, 11/2011)

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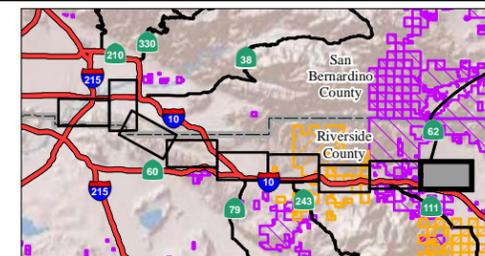


FIGURE 2
Sheet 9 of 9

PROTECTED MATERIALS
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A. Swainson's hawk flying north over the San Timoteo Badlands (04-13-2012).



B. Golden eagle perched on SCE tower (2012).



C. Osprey with fish prey over El Casco Lakes in the San Timoteo Badlands area (03-2012).



D. Red-tailed hawk landing on light post in the City of Beaumont (2012).



E. Great horned owl chicks in cliff nest (03-29-2012).



F. Typical red-tailed hawk and common raven nest sites in transmission line towers in the San Timoteo Badlands (2012).

FIGURE 3

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