

Mojave Ground Squirrel Protocol Survey Results

July 15, 2020

Mr. Collin Ramsey
27372 Calle Arroyo
San Juan Capistrano, CA
92677

Subject: Results of Mohave Ground Squirrel Protocol Surveys for the Hesperia Commerce Center II Project, City of Hesperia, San Bernardino County, California

Dear Mr. Ramsey:

The purpose of this letter is to report the results of a California Department of Fish and Wildlife (CDFW) protocol survey for the Mohave ground squirrel (*Xerospermophilus mohavensis*; MGS), conducted by Environmental Science Associates (ESA) for the Hesperia Commerce Center II Project (project). Presented in this report is a description of the project and project location, the biological setting of the project site, MGS natural history, methodology and results of trapping efforts for MGS, and conclusions.

Project Description and Location

Covington Group, Inc. proposes to develop two speculative industrial distribution warehouses on an irregular shaped parcel that comprises 197.26 acres of vacant land. One of the warehouse buildings is proposed to be 1,527,000 square feet and the other is proposed to be 1,985,000 square feet. Both warehouse buildings will have designated office space. Additionally, the project proposes to develop 2,627 parking stalls to accommodate passenger vehicles and commercial trucks/trailers.

The project site is located in the City of Hesperia in San Bernardino County, at the northwest corner of Phelan Road and U.S. Route 395. The site is bordered by US-395 on the east and Phelan Road on the south; to the west is LA Bureau of Power and Light Road, and to the north is Yucca Terrace Drive. Both LA Bureau of Power and Light Road and Yucca Terrace Drive are dirt roads that serve as utility right-of-ways (ROW) (**Figures 1 and 2**). With the exception of a few low-density single family residences (to the west and south, and a commercial truck staging yard to the north, the project site is surrounded by undeveloped desert land. The project site can be found on U.S. Geological Survey (USGS) 7.5-minute Baldy Mesa topographic quadrangle map within Section 16, Township 4 North, Range 5 West, as shown in Figure 2, Vicinity Map (USGS 1967, Earth Survey 2017).

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Biological Setting

The project site is primarily comprised of Joshua Tree Woodland. Dominant plants include Joshua tree (*Yucca brevifolia*) and California juniper (*Juniperus californica*), followed by Cooper's goldenbush (*Ericameria cooperi*), Cooper's boxthorn (*Lycium cooperi*), Anderson's thornbush (*Lycium andersonii*), bladder sage (*Salazaria mexicana*), cheesebush (*Ambrosia salsola*), green ephedra (*Ephedra viridis*), cotton-thorn (*Tetradymia axillaris*), spiny hopsage (*Grayia spinosa*), and winterfat (*Krascheninnikovia lanata*). The herbaceous layer is primarily dominated by fiddleneck (*Amsinckia tessellata*) and non-native annuals and grasses such as red-stemmed filaree (*Erodium cicutarium*) red-brome (*Bromus madritensis*) and cheat grass (*Bromus tectorum*).

Many areas of the project site are moderately-to-highly disturbed due to off-highway vehicle (OHV) activity and illegal debris dumping. During MGS surveys, biologists regularly encountered persons disposing of waste in the project site or scavenging items from debris piles. The area is also inhabited by transients and encampments. Decomposing domestic animals were also encountered onsite.

Mohave Ground Squirrel Natural History

Mohave ground squirrels (*Xerospermophilus mohavensis*) are medium-sized (210-230mm, 85-130g), diurnal squirrels. Their dorsal pelage is light gray to cinnamon-brown, while their ventral side is creamy. Unlike the round-tailed ground squirrels, which occur sympatrically in the southeast portion of their range, MGS have a short, flat tail that is light-colored on its underside and have brown cheeks instead of white.

MGS inhabit a small geographic area in the western Mojave Desert. This species ranges from Palmdale in the southwest, the Lucerne Valley in the southeast, Olancho in the northwest, and the Avawatz Mountains in the northeast (Gustafson 1993). Although occurrences in the southern portion of their range are rare, occurrences have been documented on the California Natural Diversity Database (CNDDB) as recently as 2011 (**Figure 3**). Vegetation communities (as classified by the California Native Plant Society) typically associated with MGS include Mojave Creosote Scrub, Shadscale Scrub, Desert Saltbush Scrub, Desert Sink Scrub, and Joshua Tree Woodland. MGS feed primarily on the leaves and seeds of forbs and shrubs. In the northern portion of their range, MGS have been found to feed on spiny hopsage (*Grayia spinosa*), winterfat (*Krascheninnikovia lanata*) and saltbush (*Atriplex* sp.) especially in early spring when forbs are unavailable, during summer when forbs have dried out, and during drought conditions (Leitner and Leitner 1998). Recent studies have also indicated that MGS feed on the following forbs and shrubs: freckled milkvetch (*Astragalus lentiginosus*), Mojave lupine (*Lupinus odoratus*), buckwheat (*Eriogonum* sp.), white mallow (*Eremalche exilis*), fiddleneck (*Amsinckia tessellata*), Russian thistle (*Salsola tragus*), desert pincushion (*Chaenactis* sp.), Cryptantha (*Cryptantha pterocarya*), Coreopsis (*Leptosyne bigelovii*), Valley lessingia (*Lessingia glandulifera*), desert dandelion (*Malacothrix glabrata*), Phacelia (*Phacelia* sp.), wire lettuce (*Stephanomeria* sp.) Anderson's desert thorn (*Lycium andersonii*), (*Tetradymia spinosa*), and Joshua tree (*Yucca brevifolia*) (Leitner and Leitner 2017).

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MGS have adapted to live in hot desert environments by limiting their activity aboveground through estivation and hibernation. The timing of emergence from hibernation varies by location: in the northern portion of their range male MGS emerge mid-March (Leitner and Leitner 1998); however, in the southern portion of their range, MGS may emerge as early as mid-January (Recht 1977). Throughout their active period, MGS store fat in preparation for estivation, which typically occurs between July and September, but may occur as early as April or May during drought conditions (Leitner et al. 1995). MGS reproduction is dependent on fall and winter rains and individuals may forgo breeding entirely if low rainfall (<80mm) results in reduced herbaceous plants (Leitner and Leitner 2017).

Throughout the range of MGS, they may co-occur with antelope ground squirrels, round-tailed ground squirrels, and California ground squirrels. MGS may be misidentified with round-tailed ground squirrels, but this is unlikely to occur with antelope ground squirrels, because the latter species has white dorsal stripes that makes them resemble a chipmunk more than an MGS. California ground squirrels are also notably larger and are not typically confused with MGS.

MGS are classified as threatened, and are protected under the California Endangered Species Act. Primary threats to MGS include limited distribution, low abundance and habitat loss from by converting suitable habitat to urban, suburban, agricultural and military land uses (Gustafson 1993, Leitner and Leitner 2017).

Methods

Prior to conducting a habitat assessment at the project site, ESA developed a strategy to survey the irregularly shaped parcel (project site) in coordination with the California Department of Fish and Wildlife (CDFW). The proposed survey strategy included two 4x25 100-trap grids at the the north and south ends of the project site, with the intervening areas being surveyed using five camera trap stations. CDFW approved this modified protocol on March 13, 2020.

Visual Survey

The MGS trapping surveys were led by ESA's Karla Flores (Scientific Collection permit #10572). An initial visual assessment of the project site was conducted by Karla Flores and ESA biologist Karl Fairchild on March 29, 2020. The visual survey consisted of driving and walking throughout the project site to identify suitable habitat for MGS. This included identifying plants known to provide forage material for MGS such as spiny hopsage, winterfat, Cooper's boxthorn, Anderson's desert thorn, and Joshua tree. Areas supporting suitable habitat for MGS where these plants are concentrated were recorded using ArcGIS Collector GPS software. Suitable soil types for burrowing and burrow densities were also noted.

Live Trapping

Two 100-trap sampling grids were set-up in a 4x25 configuration on the north and south portions of the project site. Each grid consisted of 100 XLK Sherman traps (3x3.75x12") spaced 35-meters apart. Each trap station setup

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consisted of a pin flag, a cardboard A-frame cover to provide shade, and bait. Bait consisted of 4-way livestock feed, mixed with an oat and peanut butter powder. Coordinates of the corners of each grid are provided in **Table 1**.

Each grid was trapped for five consecutive days. Traps were opened one hour after sunrise and checked every 4 hours prior to closing one hour after sunset. In accordance with CDFW MGS Survey Guidelines (January 2003, revised July 2010), trapping only occurred while temperatures remained above 50°F and below 90°F. Per CDFW guidelines, three 5-day survey periods took place within three different survey windows: March 15 to April 15, May 1-31 and June 15 to July 15. Specific trapping dates during each survey period are listed in **Table 2**. CDFW MGS Survey and Trapping Forms were completed for each grid and are attached in **Attachment A**. Associated weather data was recorded daily and is attached in **Attachment B**.

General information collected from each animal captured included: species, age, sex and reproductive condition. Abnormalities such as injuries and high parasite loads were also recorded. All animals captured were released at their capture location.

Camera Trapping

Five camera stations were set-up in suitable habitat areas not surveyed by north and south grids (**Figure 2**). The coordinates of each camera station are provided in **Table 3**. Each camera station consisted of a Reconyx® HF2X Hyperfire 2 Covert Infrared camera, secured to a Joshua tree and facing a bait station. The bait station consisted of a bait block enclosed in a wire mesh cage to prevent predation by ravens, with entrances on all sides, approximately five feet away from the camera (**Photo 4: Attachment D**). All cameras operated for two 5-day periods from April 2-7, 2020 and May 9-14, 2020, and were programmed with the settings recommended in Delaney et al. (2017).

TABLE 1
COORDINATES OF NORTH AND SOUTH TRAPPING GRIDS

Grid	Corner	Corner name	Zone	Easting	Northing
North	SW	D1	11	462051	3810100
	NW	A1	11	462047	3810202
	SE	D25	11	462891	3810093
	NE	A25	11	462886	3810202
South	SW	D1	11	461816	3809683
	NW	A1	11	461819	3809788
	SE	D25	11	462659	3809681
	NE	A25	11	462667	3809793

**Easting and northing coordinates taken at four corners of each grid (WGS 84).*

TABLE 2
SURVEY DATES AND TRAP HOURS FOR MOHAVE GROUND SQUIRREL

Session	Dates	Trap Hours (North Grid /South Grid)	Surveyors
1	March 30-April 3, 2020	55/55	Karla Flores; Karl Fairchild
2	May 11-16, 2020	55/55	Karla Flores; Karl Fairchild
3	June 22-26, 2020	21/18	Karla Flores; Karl Fairchild

TABLE 3
CAMERA TRAP STATION LOCATIONS

Camera	Zone*	Easting	Northing
1	11	462748	3809725
2	11	462100	3809905
3	11	462324	3809932
4	11	462516	3809921
5	11	463056	3810165

*Datum WGS 84

Results

Visual Survey

The visual survey concluded that the project site provides marginally suitable habitat for MGS. Specifically, foraging plants for MGS such as spiny hopsage, winterfat, Cooper's boxthorn, Anderson's thornbush, and Joshua tree were observed throughout the project site along with suitable substrate that includes friable soils for burrowing. However, surrounding roadways and various forms of human presence, including OHV impacts, have marginalized the habitat quality.

Live-Trapping

Live-trap captures consisted entirely of non-target species, including white-tailed antelope ground squirrel (*Ammospermophilus leucurus*), California ground squirrel (*Otospermophilus beecheyi*), Panamint kangaroo rat (*Dipodomys panamintinus*), Great Basin whiptail (*Aspidoscelis tigris tigris*), desert spiny lizard (*Sceloporus magister*), side-blotched lizard (*Uta stansburiana*), cactus wren (*Campylorhynchus brunneicapillus*) and California thrasher (*Toxostoma redivivum*) (**Table 4; Figure 4**). No MGS were trapped during the surveys.

Camera trapping

The five camera trap stations detected white-tailed antelope ground squirrel, California ground squirrel, Panamint kangaroo rat, desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), domestic dog

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(*Canis lupus familiaris*), common raven (*Corvus corax*), California scrub jay (*Aphelocoma californica*), California quail (*Callipepla californica*), as well as people (**Table 5**). No MGS were observed at any of the camera stations.

A complete list of non-target species detected incidentally within the project site, visually and aurally, is included in **Attachment C**.

TABLE 4
RESULTS OF MOHAVE GROUND SQUIRREL PROTOCOL LIVE TRAPPING SURVEYS ON NORTH AND SOUTH GRID

Common name	Scientific name	North Grid			South Grid			Total
		Session 1	Session 2	Session 3	Session 1	Session 2	Session 3	
White-tailed antelope ground squirrel	<i>Ammospermophilus leucurus</i>	25	13	23	9	12	40	122
California ground squirrel	<i>Otospermophilus beecheyi</i>	12	22	21	11	32	45	143
Panamint kangaroo rat	<i>Dipodomys panamintinus</i>	0	0	0	0	1	0	1
Great Basin whiptail	<i>Aspidoscelis tigris tigris</i>	0	2	0	0	5	0	7
Desert spiny lizard	<i>Sceloporus magister</i>	0	0	0	3	0	0	3
Side-blotched lizard	<i>Uta stansburiana</i>	0	0	0	1	0	0	1
California thrasher	<i>Toxostoma redivivum</i>	0	0	1	0	0	0	1
Cactus wren	<i>Campylorhynchus brunneicapillus</i>	0	0	0	0	0	1	1
Total								279

TABLE 5
RESULTS OF CAMERA TRAPPING

Common name	Scientific name
Antelope ground squirrel	<i>Ammospermophilus leucurus</i>
California ground squirrel	<i>Otospermophilus beecheyi</i>
Panamint kangaroo rat	<i>Dipodomys panamintinus</i>
Black-tailed jackrabbit	<i>Lepus californicus</i>
Desert cottontail	<i>Sylvilagus audubonii</i>
Domestic dog	<i>Canis lupus familiaris</i>
Common raven	<i>Corvus corax</i>
California quail	<i>Callipepla californica</i>
California scrub-jay	<i>Aphelocoma californica</i>
Human	<i>Homo sapiens</i>

Conclusions

Although there is marginally suitable MGS habitat present on the project site, no MGS were detected at the camera stations or captured during the trapping surveys. As such, the survey results indicate that MGS do not inhabit the project site at this time. Additionally, the high density of California juniper on site is indicative that the area is within the Mohave-transmontane transition zone, an area with low likelihood of use by MGS. Furthermore, the disturbances from human presence and fragmentation from surrounding roadways, including OHV use and illegal waste dumping within the project site has had a negative effect on habitat quality for MGS. Records from the California Natural Diversity Database (CNDDB) reveal two occurrences of MGS near the project site that were detected in 2005 and 2011 (**Figure 3**). However, both these records are from sites located across the California Aqueduct making dispersal to the project site highly unlikely, because the aqueduct creates considerable barrier to dispersal.

Although suitable MGS habitat is present onsite, no MGS were captured during the live-trapping surveys or detected at camera stations. As a result, CDFW survey guidelines indicate that the department will stipulate that no MGS occur on the project site. This stipulation will expire one year from the last day of trapping, June 20, 2020.

I hereby certify that the information in this report is true and it conforms to accepted biological standards. Please feel free to contact Karla Flores or Greg Ainsworth by phone at (805) 914-1500 or by email at kflores@esassoc.com or gainsworth@esassoc.com with any questions regarding this report.

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Sincerely,



Karla L. Flores
Senior Biologist



Greg Ainsworth
Director

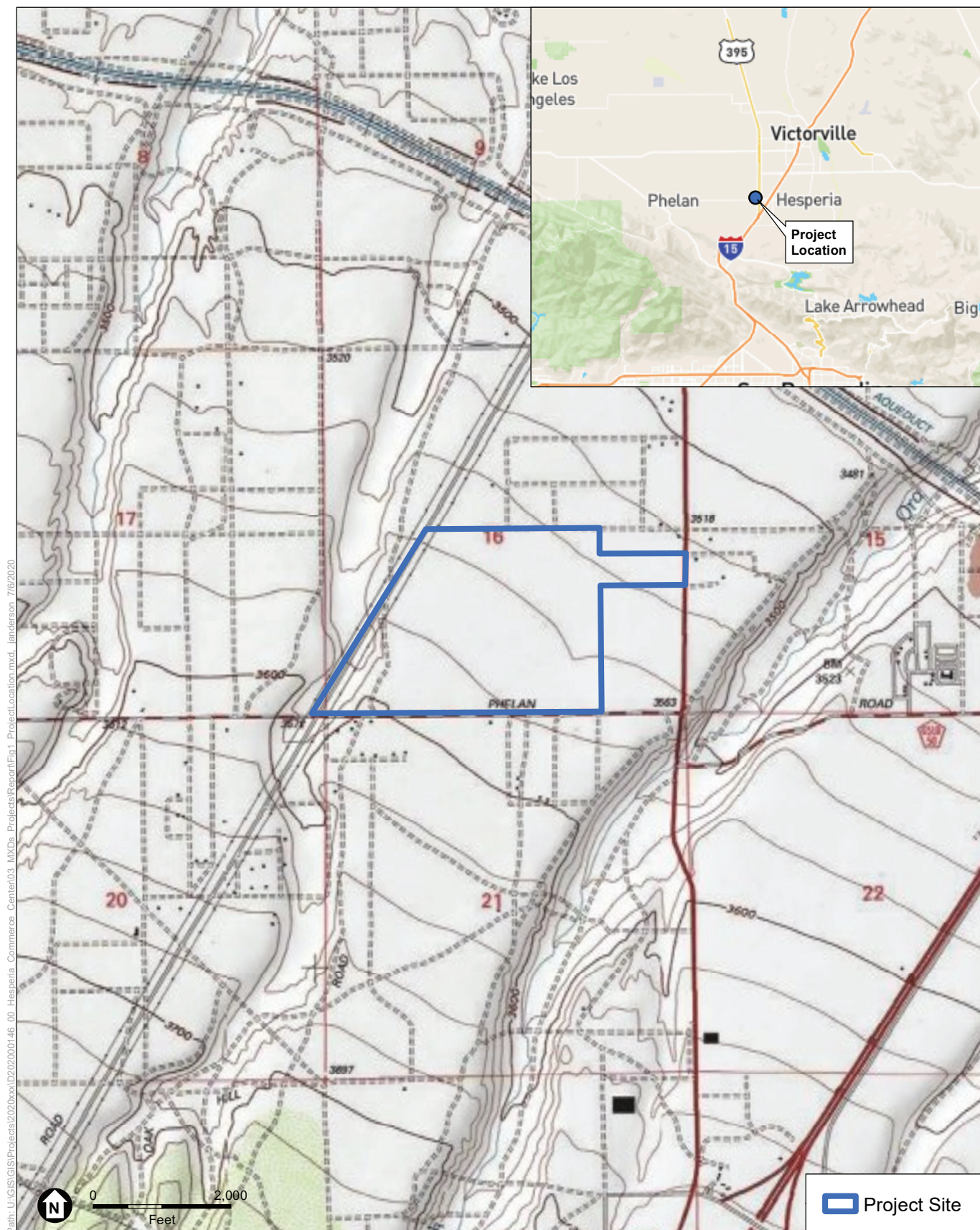
Attachments

Figure 1-Project Location
Figure 2-Survey Area
Figure 3-Historical MGS Occurrences
Figure 4-Results

Attachment A-CDFW Mohave Ground Squirrel Survey and Trapping Forms
Attachment B-Weather Details
Attachment C-Species Compendium
Attachment D-Representative Photographs

References

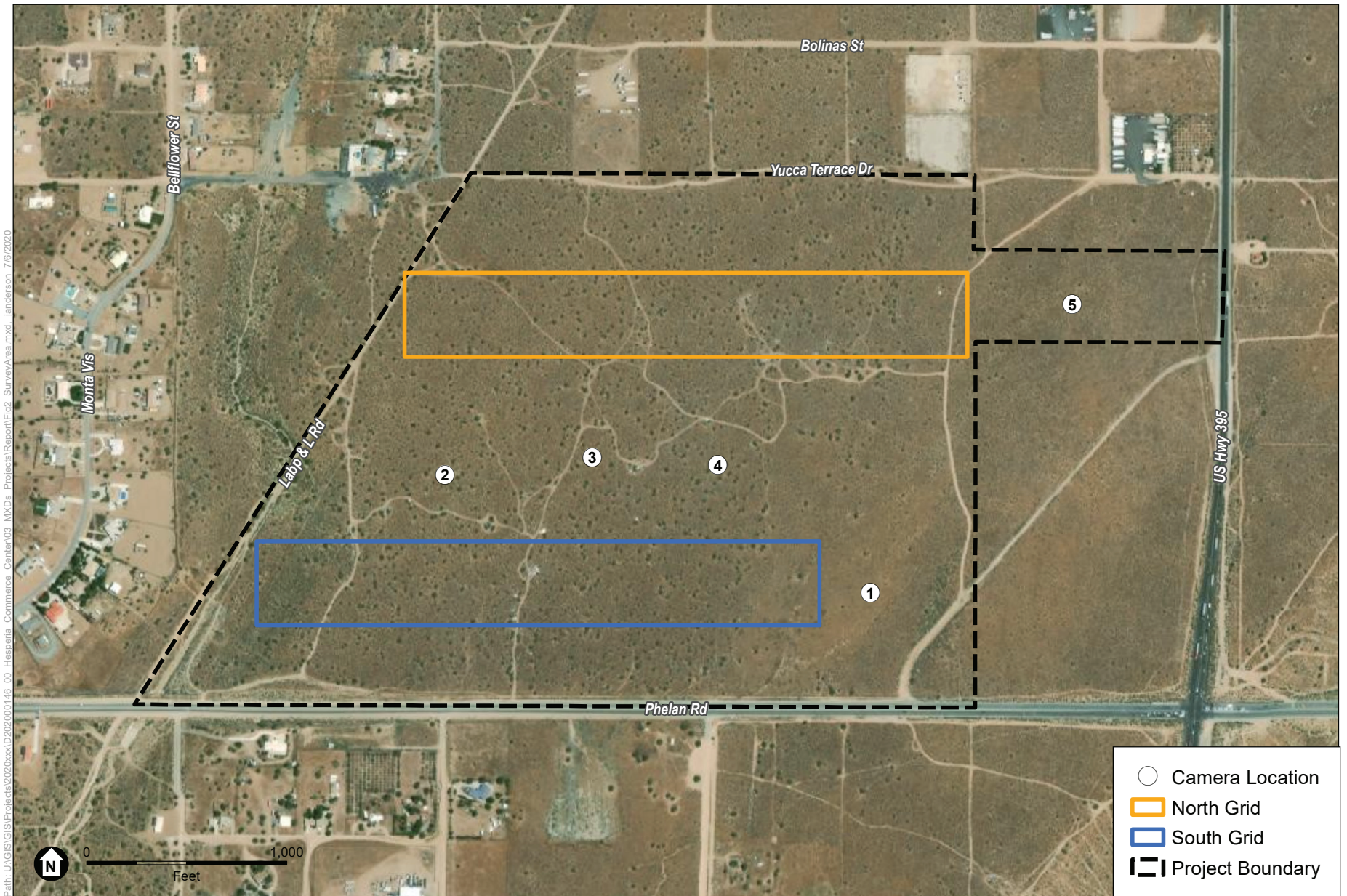
- California Department of Fish and Game. Mohave Ground Squirrel Survey Guidelines. July 2010.
- California Department of Fish and Wildlife. California Natural Diversity Database Rarefind. July 13, 2020.
- Gustafson, J.R. 1993. A Status Review of the Mohave Ground Squirrel (*Spermophilus mohavensis*). Department of Fish and Game. Nongame Bird and Mammal Report 93-9.
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- Leitner, P. and B.M. Leitner. 2017. Diet of the Mohave ground squirrel (*Xerospermophilus mohavensis*) in relation to season and rainfall. *Western North American Naturalist*, 77(1), 1-13.
- Recht, M.A. 1977. The biology of the Mohave ground squirrel, *Spermophilus mohavensis*. Ph.D. Dissertation, University of California, Los Angeles. 117 pp.



SOURCE: USGS Topographic Series (Baldy Mesa, CA); ESA, 2020.

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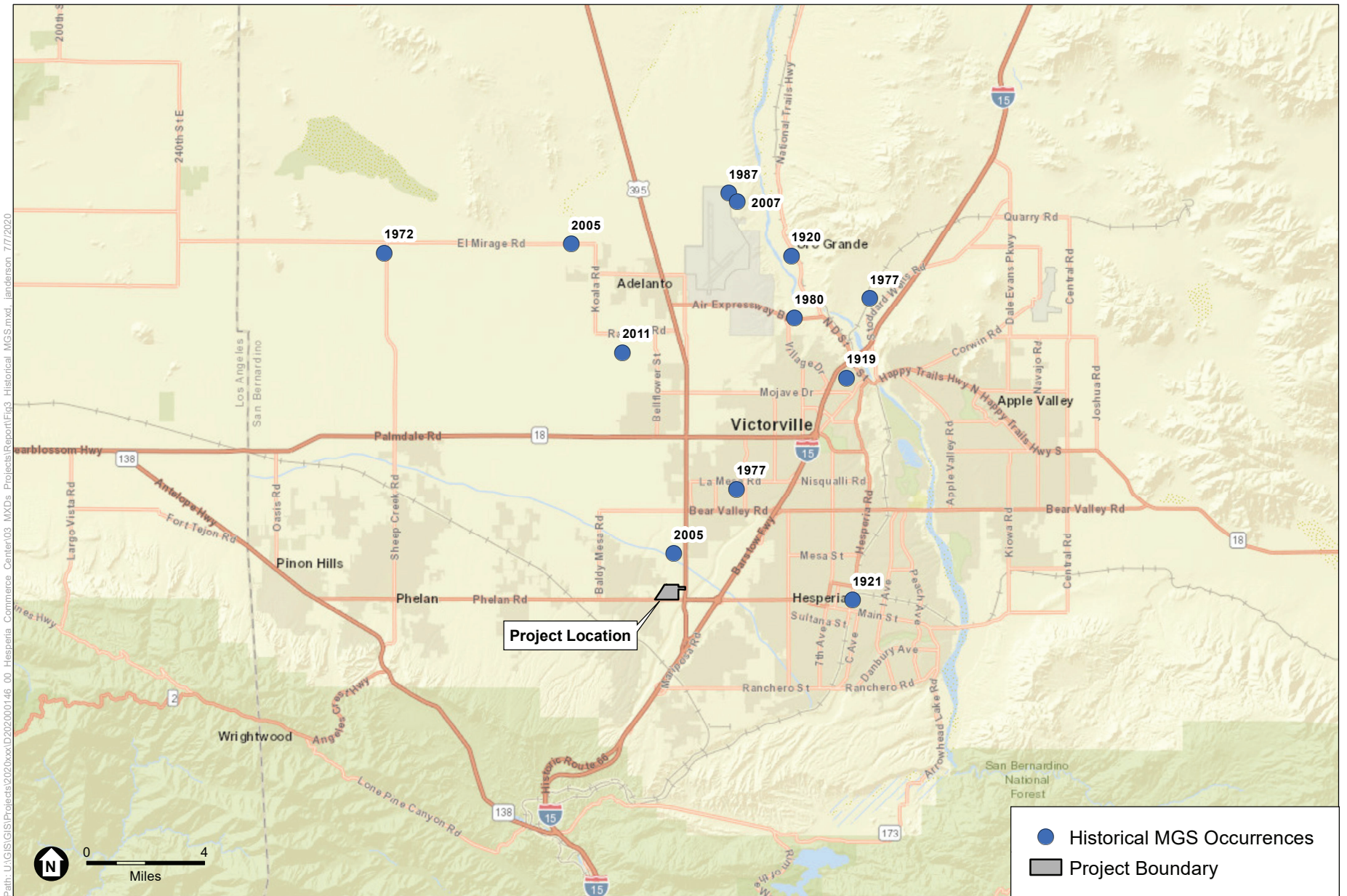
Figure 1
Project Location



SOURCE: ESRI

Hesperia Commerce Center

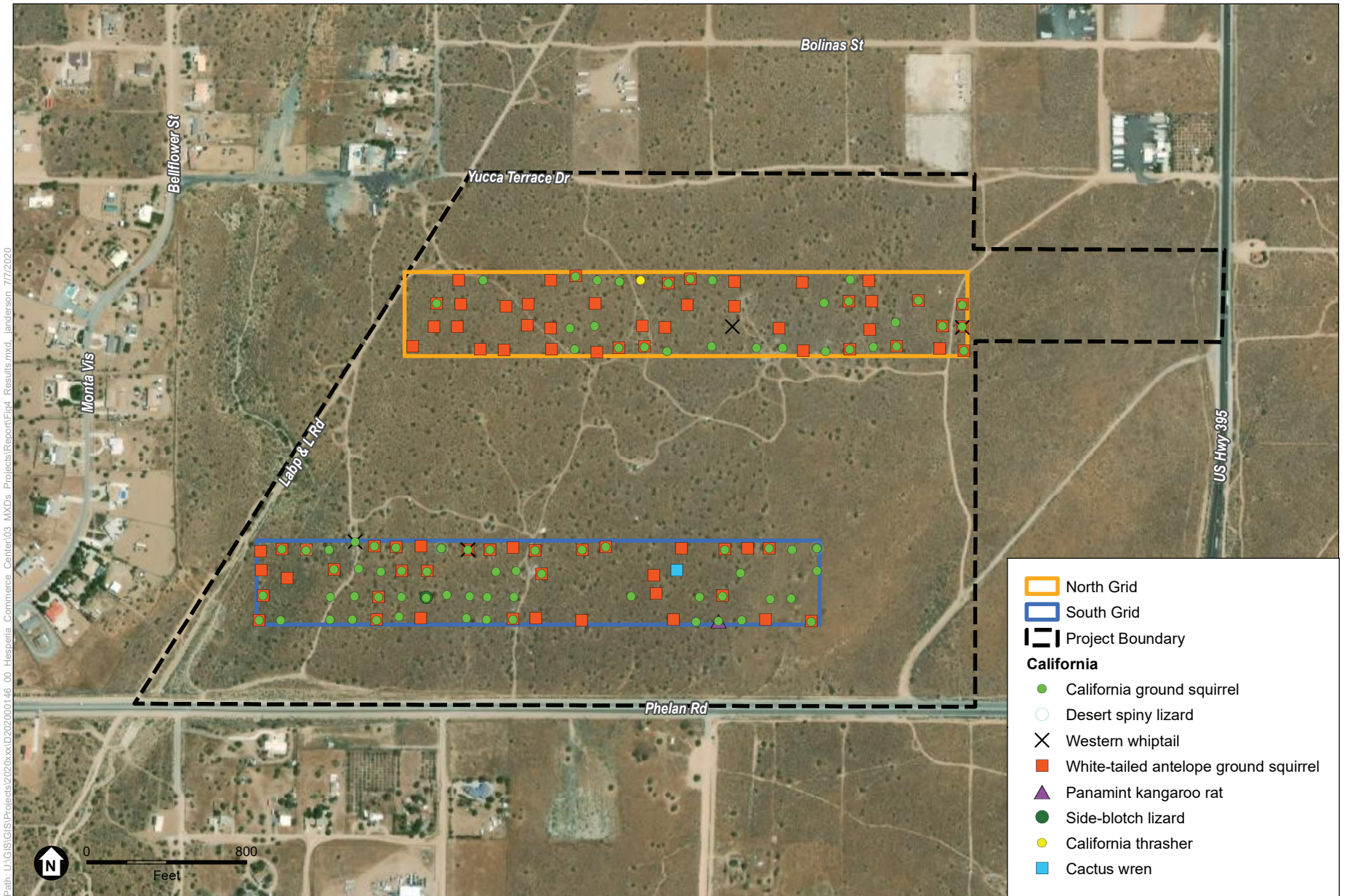
Figure 2
Survey Area



SOURCE: ESRI

Hesperia Commerce Center

Figure 3
Historical MGS Occurrences



SOURCE: ESRI

Hesperia Commerce Center

Figure 4
Results



Attachment A

CDFW MGS Survey and Trapping Forms

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Hesperia Commerce Center (North Grid) Property owner: Covington Group, Inc.

Location: Township 4 North; Range 5 West; Section 16; $\frac{1}{4}$ Section _____

Quad map/series: Baldy Mesa UTM coordinates: A1: 11 462047 3810202
GPS coordinates of trapping-grid corners

Acreage of Project Site: 197.26 Acreage of potential MGS habitat on site: 197.26

Total acreage visually surveyed on project site: 197.26 Date(s): March 29, 2020
visual surveys

Visual surveys conducted by: Karla Flores, Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 197.26 Number of sampling grids: 2

Trapping conducted by: Karla Flores, Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST ^{March 30-}April 03, 2020 SECOND ^{May 11-}May 16, 2020 THIRD ^{June 22-}June 26, 2020
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: Joshua tree, California juniper, bladder sage

other perennials: Cooper's box thorn, hop sage, winterfat, Anderson desert thorn, cotton thorn, Cooper's goldenbush

dominant annuals: red-stemmed filaree, fiddleneck (Amsinckia tessellata), red brome

other annuals: Goldfields, cheat grass

Land forms (mesa, bajada, wash): Mesa

Soils description: Cajon sand, 0-2 percent slope

Elevation: 3581ft Slope: 0-2 percent

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Hesperia Commerce Center (South Grid) Property owner: Covington Group, Inc.

Location: Township 4 North; Range 5 West; Section 16; $\frac{1}{4}$ Section _____

Quad map/series: Baldy Mesa UTM coordinates: A1 : 11 461819 3809788
GPS coordinates of trapping-grid corners

Acreage of Project Site: 197.26 Acreage of potential MGS habitat on site: _____

Total acreage visually surveyed on project site: 197.26 Date(s): March 29, 2020
visual surveys

Visual surveys conducted by: Karla Flores, Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 197.26 Number of sampling grids: 2

Trapping conducted by: Karla Flores, Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST March 30- April 3, 2020 SECOND May 11- May 16, 2020 THIRD June 22- June 26, 2020
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: California juniper, Joshua tree, Cooper's box thorn

other perennials: Bladder sage, cotton thorn, hop sage, winterfat, Cooper's goldenbush

dominant annuals: Fiddleneck (Amisnckia tessellata), red-stemmed filaree, red brome

other annuals: Goldfields, cheat grass

Land forms (mesa, bajada, wash): Primarily mesa, wash at west end of grid

Soils description: Cajon sand, 0-2 percent slopes, excluding wash slopes (9-15 percent slope)

Elevation: 3567ft Slope: 0-2; 9-15

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM



Attachment B

Weather Details

Appendix B.1 Weather details for Mohave ground squirrel (*Xerospermophilus mohavensis*) California Department of Fish and Wildlife (CDFW) protocol trapping on North grid. Details include grid name (north or south), session (1-3), date, air temperature (min-max °F), soil temperature (min-max, °F), wind speed (mph), and cloud cover (%).

Grid	Session		Air Temperature (°F)		Soil Temperature (°F)		Wind Speed (mph)		Cloud cover (%)	
			Min	Max	Min	Max	Start	End	Start	End
North	1	3/30/2020	56	73.4	46.2	65	2	4	0	0
North	1	3/31/2020	55.5	76.4	45	64.6	1.8	4.4	40	70
North	1	4/1/2020	54.6	71.5	52	57.6	1.9	9	5	1
North	1	4/2/2020	51.7	66.4	52.3	55.6	4.3	6.7	50	1
North	1	4/3/2020	52.8	65.4	46.9	65.1	3.4	5.9	35	5
North	2	5/11/2020	51.5	75.2	64.4	92.1	2.3	7.6	0	5
North	2	5/12/2020	53.7	72.7	67.1	80.8	11	9.1	5	3
North	2	5/13/2020	52.6	74.6	65.3	95.9	7	12.5	5	1
North	2	5/14/2020	56.8	79.3	64.2	90.7	5.8	6.7	3	5
North	2	5/15/2020	62.4	83.7	67.6	93.9	7.3	4.1	0	3
North	3	6/22/2020	74.7	89	74.6	78.2	3.6	4.9	0	0
North	3	6/23/2020	74.6	89.6	75	77.1	7.5	5.2	0	5
North	3	6/24/2020	78.6	89.2	79.1	81.7	3	9	30	60
North	3	6/25/2020	71.1	89.6	78.6	81.7	7.2	13.8	80	35
North	3	6/26/2020	72.2	90	78	79.5	3	4.7	5	2

Appendix B.2 Weather details for Mohave ground squirrels (*Xerospermophilus mohavensis*) California Department of Fish and Wildlife (CDFW) protocol trapping on South grid. Details include grid name (north or south), session (1-3), date, air temperature (min-max, °F), soil temperature (min-max, °F) wind speed (mph), and cloud cover (%).

Grid	Session		Air Temperature (°F)		Soil Temperature (°F)		Wind Speed (mph)		Cloud cover (%)	
			Min	Max	Min	Max	Start	End	Start	End
South	1	3/30/2020	63	67.2	52.2	70.1	2.2	6.7	0	0
South	1	3/31/2020	62.8	69.9	51.4	69.1	1.6	7	40	70
South	1	4/1/2020	64.1	66.9	52.3	70.9	4.6	9.4	5	1
South	1	4/2/2020	51	64.3	52.5	60.4	4.8	5.7	40	1
South	1	4/3/2020	50.9	70.5	52.3	67.3	3.2	5.8	0	1
South	2	5/11/2020	52.5	77.7	65.1	89.2	4.2	8.8	5	0
South	2	5/12/2020	58.6	63.4	64.9	86.2	8.2	12.3	5	8
South	2	5/13/2020	57.1	67.2	65	85.8	5.7	6.5	3	1
South	2	5/14/2020	66.6	73.6	63.7	91.6	7	11.7	5	1
South	2	5/15/2020	65	84.4	64	98.2	8.5	2.2	0	0
South	3	6/22/2020	76	88.8	71	75	1.5	3.4	0	0
South	3	6/23/2020	76	90.4	75.2	74.9	7.5	4.5	0	0
South	3	6/24/2020	79.6	89.6	76.5	81.9	2.4	5.1	40	35
South	3	6/25/2020	73.9	90	77.6	81.1	9.9	12.7	80	40
South	3	6/26/2020	76.9	90	78.3	80.8	1.3	3.8	15	5



Attachment C

Species Compendium

	Common name	Scientific name
Plants	Amsinckia	<i>Amsinckia tessellata</i>
	Anderson's thornbush	<i>Lycium andersonii</i>
	Bladdersage	<i>Salazaria mexicana</i>
	California juniper	<i>Juniperus californica</i>
	Cheat grass	<i>Bromus tectorum</i>
	Cheesebush	<i>Ambrosia salsola</i>
	Cooper's box thorn	<i>Lycium cooperi</i>
	Cooper's goldenbush	<i>Ericameria cooperi</i>
	Cotton-thorn	<i>Tetradymia axillaris</i>
	Creosote bush	<i>Larrea tridentata</i>
	Desert parsley	<i>Lomantium mohavense</i>
	Desert sage	<i>Salvia dorii</i>
	Goldfields	<i>Lasthenia californica</i>
	Green ephedra	<i>Ephedra viridis</i>
	Hairy-leaved comb bur	<i>Pectocarya penivcillata</i>
	Joshua tree	<i>Yucca brevifolia</i>
	Lupine	<i>Lupinus sp.</i>
	Mariposa lily	<i>Calochortus kennedyi</i>
	Mohave yucca	<i>Yucca schidigera</i>
	Parry's linanthus	<i>Linanthus parryae</i>
	Red brome	<i>Bromus madritensis</i>
	Silver cholla	<i>Cylindropuntia echinocarpa</i>
	Spineflower	<i>Chorizanthe sp.</i>
	Spiny hopsage	<i>Grayia spinosa</i>
	Tidy tips	<i>Layia platyglossa</i>
	Winterfat	<i>Krascheninnikovia lanata</i>
Reptiles	Desert spiny lizard	<i>Sceloporus magister</i>
	Gopher snake	<i>Pituophis catenifer</i>
	Night lizard	<i>Xantusiidae vigilis</i>
	Red racer	<i>Masticophis flagellum piceus</i>
	Side-blotch lizard	<i>Uta stansburiana</i>
	Great Basin whiptail	<i>Aspidoscelis tigris tigris</i>
Birds	American kestrel	<i>Falco sparverius</i>
	American robin	<i>Turdus migratorius</i>
	Anna's hummingbird	<i>Calypte anna</i>
	Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
	Barn swallow	<i>Hirundo rustica</i>
	Bell's sparrow	<i>Artemisiospiza belli</i>
	Bewick's wren	<i>Thryomanes bewickii</i>
	Black-chinned hummingbird	<i>Archilochus alexandri</i>

Blue-grey gnatcatcher	<i>Polioptila caerulea</i>
Brewer's sparrow	<i>Spizella breweri</i>
Bushtit	<i>Psaltirparus minimus</i>
Cactus wren	<i>Campylorhynchus brunneicapillus</i>
California quail	<i>Callipepla californica</i>
California scrub Jay	<i>Aphelocoma californica</i>
California thrasher	<i>Toxostoma redivivum</i>
California towhee	<i>Melospiza crissalis</i>
Common raven	<i>Corvus corax</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Downy woodpecker	<i>Dryobates pubescens</i>
Eurasian collard dove	<i>Streptopelia decaocto</i>
Horned lark	<i>Eremophila alpestris</i>
House finch	<i>Haemorhous mexicanus</i>
House sparrow	<i>Passer domesticus</i>
Ladder-backed woodpecker	<i>Dryobates scalaris</i>
Lark sparrow	<i>Chondestes grammacus</i>
Lawrence's goldfinch	<i>Spinus lawrencei</i>
Mourning dove	<i>Zenaidura macroura</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Oak titmouse	<i>Baeolophus inornatus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Rock pigeon	<i>Columba livia</i>
Say's phoebe	<i>Sayornis saya</i>
Turkey vulture	<i>Cathartes aura</i>
Verdin	<i>Auriparus flaviceps</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western meadowlark	<i>Sturnella neglecta</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
Yellow-rumped warbler	<i>Setophaga coronata</i>

Mammals

Black-tailed jack rabbit	<i>Lepus californicus</i>
California ground squirrel	<i>Otospermophilus beecheyi</i>
Desert cottontail	<i>Sylvilagus audubonii</i>
Desert kit fox	<i>Vulpes macrotis</i>
Panamint kangaroo rat	<i>Dipodomys panamintinus</i>
White-tailed antelope ground squirrel	<i>Ammospermophilus leucurus</i>



Attachment D

Representative Photographs



Photograph 1: Representative view of north grid.



Photograph 2: Representative view of south grid.



Photograph 3: Representative view of lower (eastern) portion of south grid.



Photograph 4: Representative camera station set-up.



Photograph 5: (a) Male white-tailed antelope ground squirrel captured in a Sherman live-trap. (b) Juvenile California ground squirrel captured in a Sherman live-trap.



Photograph 6: Panamint kangaroo rat (*Dipodomys panamintinus*) trapped in Sherman live –trap.



Photograph 7: Great Basin whiptail and desert spiny lizard captured incidentally in traps.

