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# Stapleton and Judge Orr Roads Batch Plant 2019 – Burrowing Owl Surveys

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*Submitted to:*

**Concepts West Architecture, Inc.**

*Prepared by:*



**EDM**

**EDM International, Inc.**

4001 Automation Way  
Fort Collins, Colorado 80525-3479  
[www.edmlink.com](http://www.edmlink.com)

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# Stapleton and Judge Orr Roads Batch Plant Project 2019 – Burrowing Owl Surveys<sup>1</sup>

## 1.0 PROJECT DESCRIPTION

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Peter Lien and Sons are scheduled to construct a ready-mix concrete plant on the northeast corner of the intersection of Stapleton and Judge Orr Roads in El Paso County, Colorado. In advance of that construction, the El Paso County Environmental Office required a survey for Burrowing Owls (*Athene cunicularia*) to avoid any violations of the Migratory Bird Treaty Act as part of the completion of the project. Burrowing Owls are also listed as state-threatened by the State of Colorado.

Western Burrowing Owls (*A. c. hypugaea*) are associated with open, treeless areas in grassland, steppe, and desert biomes with low, sparse vegetation. These owls are also found in areas such as agricultural fields, airports, and vacant lots. They are often found in areas with high densities of prairie dog colonies or other burrowing mammals (Poulin et al. 2011). The property at Stapleton and Judge Orr Roads includes a prairie dog colony. In April and May 2019, the field review encompassed the proposed pad and stormwater detention basin areas for the batch plant to include areas immediately adjacent to the actual impact areas. Review of adjacent areas focused particularly on those areas west and south of the impact area; both are on the property and contain suitable Burrowing Owl habitat.

## 2.0 METHODS

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The most suitable time to survey for Burrowing Owls in Colorado is during the nest initiation and incubation phases, which extends from April into July. Western Burrowing Owls rarely dig their own burrows (Martin 1973) and, therefore, depend upon the presence of burrowing animals, such as black-tailed prairie dog (*Cynomys ludovicianus*). Burrowing Owls may also exploit burrows of badgers (*Taxidea taxus*), ground squirrels, foxes, and coyotes (*Canis latrans*). It was known that suitable burrows exist on the property; therefore, the review focused on ascertaining if any owls were present. The field study implemented the Colorado Parks and Wildlife's (CPW's) suggested audio broadcast calling regime described in the 2008 Survey Guidelines (Klute 2008a) to aid in the detection of individual birds.

The survey was conducted by establishing two points from which the entirety of the proposed project area could be seen and from which audio broadcast of the calls could be heard. The survey points selected were situated near the east and west boundaries of the proposed project area and at approximately the north-south midpoint (Photos 1 and

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<sup>1</sup> Richard E. Harness, Certified Wildlife Biologist, EDM International, Inc., 4001 Automation Way, Fort Collins, CO 80525-3479, Phone: 970/204-4001, Fax: 970/204-4007, Email: [rharness@edmlink.com](mailto:rharness@edmlink.com), Web Site: [www.edmlink.com](http://www.edmlink.com)

2). Per the CPW protocol, a wildlife technician made six visits to the property—three close to sunrise and three close to sunset. The survey points selected allowed for viewing up to several hundred feet beyond the boundaries of the proposed project area, though audio broadcast of the calls would not extend that far.

CPW publishes recommended buffer distances from active raptor nests. CPW recommends no human encroachment should occur within 150 feet of an active Burrowing Owl nest from 15 March through 31 October (Klute 2008b). Accordingly, the wildlife technician examined out to, and beyond, a 150-foot buffer beyond the pad boundaries.



Photos 1 and 2: Viewing the property from survey point #1 looking WSW (top) and WNW (bottom).

### 3.0 RESULTS

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#### **SURVEY 1:**

**Date: 14 April 2019**

Time On-Site: 1820 to 1905 hours

Weather: Partly cloudy, 50s °F

Wind: 5-10 miles per hour (mph)

No difficulty locating suitable survey points due to level terrain and low vegetation. Active cattle grazing present on property. No visual sightings of Burrowing Owls. No response to audio broadcast of calls.

**Date: 15 April 2019**

Time On-Site: 0610 to 0645 hours

Weather: Partly cloudy, 40s °F

Wind 5-10 mph

No visual sightings of Burrowing Owls. No response to audio broadcast of calls.

#### **SURVEY 2:**

**Date: 24 April 2019**

Time On-Site: 0620 to 0645 hours

Weather: Partly cloudy, 40s °F

Wind: negligible

One visual sighting of Burrowing Owl almost as soon as survey point #1 was reached. Estimated distance from southern project boundary to owl was in excess of 200 feet (Map 1), in a southerly direction. No other owls seen. No response to audio broadcast of calls (owl detected visually may have been too far away to hear the calls).

**Date 24 April 2019**

Time On-Site: 1900 to 1935 hours

Weather: Partly to mostly cloudy, brief interval of light rain toward end of survey. 60s °F

Wind: 5-20 mph wind gusts later in survey period (otherwise mostly 5-10 mph)

Visual sighting of Burrowing Owl pair, same location as morning survey, before the actual survey protocol began (both owls remained in place through the survey protocol from point #1). A pair of owls at the same mound should be interpreted as suggestive of breeding behavior. No other owls detected during survey.

### **SURVEY 3**

**Date: 6 May 2019**

Time On-Site: 0620 to 0710 hours

Weather: Partly cloudy, 40s °F

Wind: 10-15 mph

No visual or auditory contact with any owls, including the pair observed during the last survey. Technician spent extra time getting a more precise estimate of the distance from the south edge of the proposed construction project area to the known Burrowing Owl location/mound. Using relatively known points (the road and estimated south edge of project area), the approximate distance from the edge of the proposed construction is between 270 and 310 feet; owls were beyond the 150-foot limit prescribed in the CPW document.

**Date: 6 May 2019**

Time On-Site: 1900 to 1940 hours

Weather: Partly cloudy, 50s °F

Wind: 5-15 mph

One Burrowing Owl, same location, detected upon arrival at survey point #1. The second Burrowing Owl was presumed to be incubating eggs below ground. No other visual or auditory detections of Burrowing Owls during survey. Burrowing Owl remained in place during entire survey at point #1.

## **4.0 CONCLUSION**

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Burrowing Owls arrive in Colorado during late March or early April and nests are typically active from 2 May to 19 August (Kingery 1998). Active nests are those with eggs and/or young. By late July, Burrowing Owl nestlings should be independent; however, juveniles can still be present in and near their natal burrows as late as 31 October (Klute 2008a).

Avoidance buffers should be implemented to avoid direct and indirect impacts to owl burrows and individuals (Map 1). Avoidance buffers are required for occupied nest burrows so nesting is not disturbed, and nesting pairs can rear and successfully fledge young. Per the guidelines outlined by CPW, a standard minimum avoidance buffer is 150 feet from the nest site to human encroachment between 15 March and 31 October or sooner, once the birds fledge and disperse. This should be determined by a qualified biologist.

If additional Burrowing Owls arrive on site after construction activities commence, a qualified biologist should reassess the risk to owls from construction activities.



Map 1. Burrowing Owl Survey Points – April/May 2019.

## 5.0 REFERENCES

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