

January 19, 2021

To: Jordan Swisher, Brue Baukol Capital Partners (Brue Baukol)
From: Heidi Gerstung, ERO Resources Corporation (ERO)
RE: Redtail Ridge - 2020 Migratory Bird Nest Surveys

Brue Baukol is planning the proposed Redtail Ridge development in Boulder and Broomfield Counties, Colorado (Figure 1; project area). As part of planning for the project, Brue Baukol requested that ERO complete a survey for active nests within and adjacent to the proposed development (survey area; Figure 2). ERO conducted initial nest surveys on April 20 and April 21, 2020 and made additional observations on May 22, June 1, and June 8, 2020 (2020 surveys). During the 2020 surveys, ERO identified stick nests and other suitable nest sites. The nests found during the 2020 surveys are shown on Figure 2 and are described in more detail below.

Migratory Bird Nests

Background

The Migratory Bird Treaty Act (MBTA) protects raptors and other migratory birds. Unless permitted by regulations, the MBTA provides that “it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not.” In Colorado, most birds except for the European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), rock dove (pigeon; *Columba livia*), Eurasian collared dove (*Streptopelia decaocto*), and grouse species (*Galliformes*) are protected under the MBTA. A Nest Depredation Permit, issued by the U.S. Fish and Wildlife Service, is needed to remove, disturb, or destroy an occupied nest. Because raptors may be sensitive to human disturbances near their nests, resulting in abandonment of their eggs or fledglings, Colorado Parks and Wildlife (CPW) has developed recommended buffer zones and seasonal restrictions to avoid causing raptors to abandon their nests (CPW 2020). Additionally, the Bald and Golden Eagle Protection Act (BGEPA) prohibits the take of any eagle nest, whether active or inactive. However, after several years of inactivity, nests that are not maintained by eagles may eventually disintegrate into a pile of sticks and debris that would not be protected under the BGEPA.

The survey area included the project area plus a ½-mile buffer. Before the 2020 surveys, ERO reviewed the CPW raptor database and previous raptor surveys to determine known

Denver
1842 Clarkson St.
Denver, CO 80218
303.830.1188

Durango
1015 ½ Main Avenue
Durango, CO 81301
970.422.2136

Hotchkiss
P.O. Box 932
161 South 2nd St.
Hotchkiss, CO 81419
970.872.3020

Idaho
4001 East Main Street
Emmett, ID 83617
208.365.7684

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locations of raptor nests near the project area. The 2020 surveys were conducted in late spring before the trees had leafed out to make it easier to locate and map existing nests, although some nests were inactive at that time, and additional surveys were completed in early summer.

Survey Results

ERO recorded the location of each nest with a global positioning system (GPS) unit or marked the location on an aerial photograph and noted the raptor species (if known) and any other pertinent information. Because access permission was not available for all properties, some of the nests within the buffer were not accessible and, therefore, ERO recorded these nest locations using binoculars to survey trees from publicly accessible areas and drawing on aerial photographs.

During the 2020 surveys, six raptor nests, many black-billed magpie nests, several smaller stick nests, and other substrate songbird nests, as well as a nest box were observed within the survey area (Figure 2) (Photos 1 through 4). Based on data collected during the 2020 surveys, four raptor nests were identified as active – one great-horned owl (*Bubo virginianus*) occupied nest and three red-tailed hawk (*Buteo jamaicensis*) nests. The remaining large nests observed were inactive during the 2020 surveys.

During the 2020 surveys, many of the typical species of migratory birds found along the Front Range were observed within the survey area including red-tailed hawk, Swainson's hawk (*Buteo swainsoni*), osprey (*Pandion haliaetus*), one sub-adult bald eagle (*Haliaeetus leucocephalus*), American kestrel (*Falco sparverius*), great-horned owl, turkey vulture (*Cathartes aura*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), Bullock's oriole (*Icterus bullockii*), brown-headed cowbird (*Molothrus ater*), Vesper sparrow (*Pooecetes gramineus*), western kingbird (*Tyrannus verticalis*), Say's phoebe (*Sayornis saya*), killdeer (*Charadrius vociferus*), house finch (*Haemorrhous mexicanus*), American robin (*Turdus migratorius*), American goldfinch (*Spinus tristis*), cliff swallow (*Petrochelidon pyrrhonota*), barn swallow (*Hirundo rustica*), yellow warbler (*Setophaga petechia*), Eurasian collared dove (*Streptopelia decaocto*), mourning dove (*Zenaida macroura*), black-billed magpie (*Pica hudsonia*), red-winged blackbird (*Agelaius phoeniceus*), American crow (*Corvus brachyrhynchos*), American white pelican (*Pelecanus erythrorhynchos*) (fly-over), double-crested cormorant (*Phalacrocorax auritus*) (flyover), snowy egret (*Egretta thula*) (flyover), and great blue heron (*Ardea herodias*).

The results of the 2020 surveys are shown in Table 1 and on Figure 2. Figure 2 also shows the buffer zones for raptor species as recommended by CPW (CPW 2020).

Table 1. Nests found in the survey area during the 2020 surveys with relevant species notes.

Nest Species	Notes
Red-tailed hawk	Three active red-tailed hawk nests were observed within ½ mile of the project area during the 2020 surveys (Photo 2). Red-tailed hawks lay one brood per nesting season with an incubation period of 28-35 days and have nest-dependent hatchlings for 42-46 days*.
Great-horned owl	One active great-horned owl nest was observed within the project area during the 2020 surveys. Great-horned owls lay one brood per nesting season with an incubation period of 30-37 days and have nest-dependent hatchlings for 42 days*.
Black-billed magpie	Twelve magpie nests (some active, some inactive) were observed within the project area during the 2020 surveys (Photos 3 and 4). Black-billed magpies lay one brood per nesting season with an incubation period of 16-19 days and have nest-dependent hatchlings for 24-30 days*.
Killdeer	Killdeer, a ground-nesting species, with a nest scape of a shallow depression scratched into bare ground, were observed within the northern portions of the project area during the 2020 surveys (Figure 2). Killdeer lay one to three broods per nesting season with an incubation period of 22-28 days*.
Red-winged blackbird	Although no individual active nests were identified during the 2020 surveys, red-winged blackbirds were observed in the emergent wetland vegetation within the project area, and active nesting is assumed to be occurring in these areas. Red-winged blackbirds lay one to two broods per nesting season with an incubation period of 11-13 days and have nest-dependent hatchlings for 11-14 days*.
Other-Unknown/Inactive	Two inactive raptor nests, many smaller songbird nests, and one nest box that were also inactive at the time of the 2020 surveys were observed within the project area (Photo 1). The number of broods, incubation period, and the length of time there are nest-dependent hatchlings is species specific.

*Cornell Lab of Ornithology 2021.

Recommendations

The active nesting season and buffer zones for each species that is known to have occurred, or has the potential to occur, near the project area are shown in Table 2.

Table 2. Nest buffer zones and active breeding season for migratory birds occurring or potentially occurring in the project area.

Species	Recommended Buffer Zones	Active Breeding Season
Bald eagle	½ mile (if surface occupancy within ¼ mile (1,320 feet) cannot be avoided and the nest is located within a highly developed area, a 660-foot buffer is recommended)	December 1 to July 31
Red-tailed hawk	½ mile (some individuals may tolerate activities within 100 yards of nest)	February 15 to July 15
Swainson's hawk	¼ mile (some individuals may tolerate activities within 100 yards of nest)	April 1 to July 31
Great-horned owl	No official recommended buffer; 300 to 1,200 feet is usually sufficient to prevent disturbance depending on existing activity. Consultation with CPW may be necessary for project-specific recommended buffers.	February 1 to July 31*
Black-billed magpie	No official recommended buffer; 50 to 300 feet is usually sufficient to prevent disturbance depending on existing activity. Consultation with CPW may be necessary for project-specific recommended buffers.	March 1 to July 31*
Killdeer	No official recommend buffer; 50 to 300 feet is usually sufficient to prevent disturbance depending on existing activity. Consultation with CPW may be necessary for project-specific recommended buffers.	March 1 to July 31*
Red-winged blackbird	No official recommended buffer; 50 to 300 feet is usually sufficient to prevent disturbance depending on existing activity. Consultation with CPW may be necessary for project-specific recommended buffers.	March 1 to July 31*
Migratory songbirds	No official recommended buffer; 50 to 300 feet is usually sufficient to prevent disturbance depending on existing activity. Consultation with CPW may be necessary for project-specific recommended buffers.	Variable depending upon species

*Wickersham 2016.

Source: CPW 2020.

The recommended actions for each nest found within ½ mile of the project area during the 2020 surveys are shown in Table 3.

Table 3. Recommended actions regarding nests found during the 2020 surveys.

Nest Species	Notes	Further Actions Needed?
Red-tailed hawk	Three raptor nests observed within ½ mile of the project area were active during the 2020 nesting season: • One nest located east of the project area along Midway Drive • One nest located along Rock Creek • One nest located near pond west of 96th Street	No further action is recommended for the nest along Midway Drive since it is not located within 1/3 mile of proposed ground disturbance and the nest is separated from the project area by several busy roads. Conduct additional monitoring of the raptor nests located along Rock Creek and near the pond west of 96th Street to determine occupancy status. Prior to any construction activities conducted during the active nesting season, consult with CPW on protective measures or monitoring that may be necessary to prevent disturbance to nesting raptors. Monitor trees suitable for nesting raptors for new nest construction.
Great-horned owl	One raptor nest located within the project area occupied by a great-horned owl during the 2020 nesting season.	Prior to any construction activities, consult with CPW on protective measures or monitoring that may be necessary.
Black-billed magpie	Twelve magpie nests (some active, some inactive) were observed within the project area during the 2020 nesting season.	Remove trees within the project area that are designated for removal prior to the active breeding season, which starts March 1. Within one week prior to vegetation removal, conduct a nest survey to determine if any migratory bird nests are active and implement protective measures of active migratory bird nests as necessary.
Killdeer	One nesting area was identified within the project area during the 2020 surveys.	If possible, conduct any ground-disturbing activities in this area prior to the active breeding season, which starts March 1. Within one week prior to ground disturbance, conduct a nest survey to determine if any nests are active and implement protective measures of active migratory bird nests as necessary.
Red-winged blackbird	Active nesting is assumed within the emergent wetlands in the project area.	Within one week prior to construction disturbance, conduct a nest survey to determine if any migratory bird nests are active and implement protective measures of active migratory bird nests as necessary.

Nest Species	Notes	Further Actions Needed?
Other/Migratory Birds	Other inactive nests and trees suitable for nesting migratory birds are located within the project area.	Remove trees within the project area that are designated for removal prior to the active breeding season, which generally starts April 1. Within one week prior to vegetation removal, conduct a nest survey to determine if any migratory bird nests are active and implement protective measures of active migratory bird nests as necessary.

To avoid any potential impacts on active nests and preclude future nesting, vegetation removal should occur from September through February (i.e., outside of the breeding season) per Colorado Department of Transportation standard specifications. If the construction schedule does not allow vegetation removal outside of the breeding season, ***ERO recommends, at a minimum, a nest survey be conducted within one week prior to construction or vegetation removal*** to determine if any active migratory bird nests would require implementing protective measures. Removal of inactive nests may occur during the nonbreeding season to preclude future nesting and avoid violations of the MBTA. No permit or approval is necessary for removing nests during the nonbreeding season.

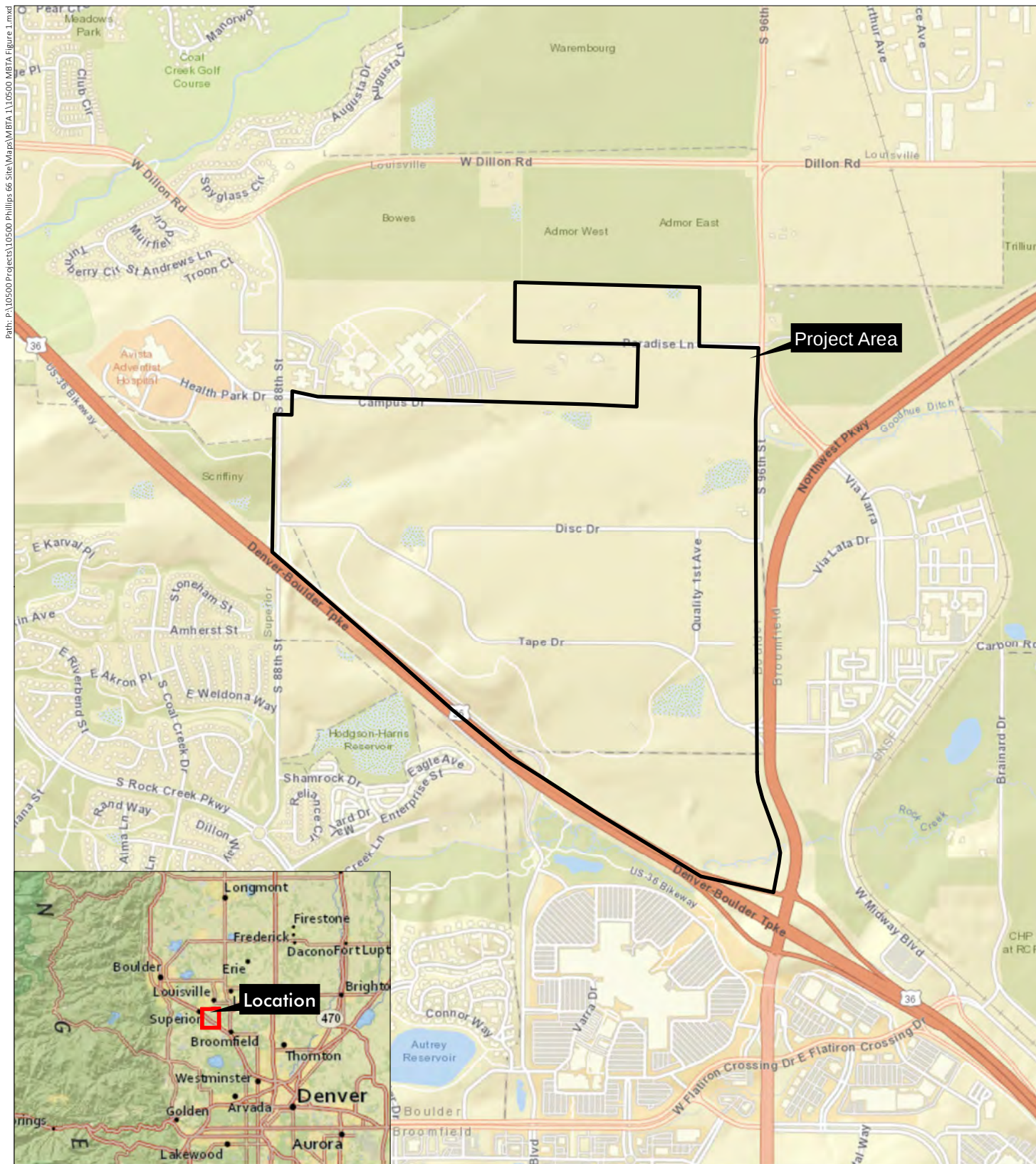
References

Colorado Parks and Wildlife (CPW). 2020. Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors. June.

Cornell Lab of Ornithology. 2021. All About Birds. Cornell Lab of Ornithology, Ithaca, New York. <https://www.allaboutbirds.org>. Last accessed January 15, 2021.

Wickersham, L. (ed.). 2016. The Second Colorado Breeding Bird Atlas online database. Colorado Bird Atlas Partnership, Denver, CO. <http://www.cobreedingbirdatlasii.org>.

Attachments: Figures 1 and 2; Photo Log



Redtail Ridge Migratory Bird Nest Surveys

Sections 20, 21, 28, and 29, T1S, R69W; 6th PM

UTM NAD 83: Zone 13N; 488402mE, 4421737mN

Longitude 105.135760°W, Latitude 39.945675°N

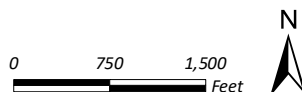
USGS Louisville, CO Quadrangle

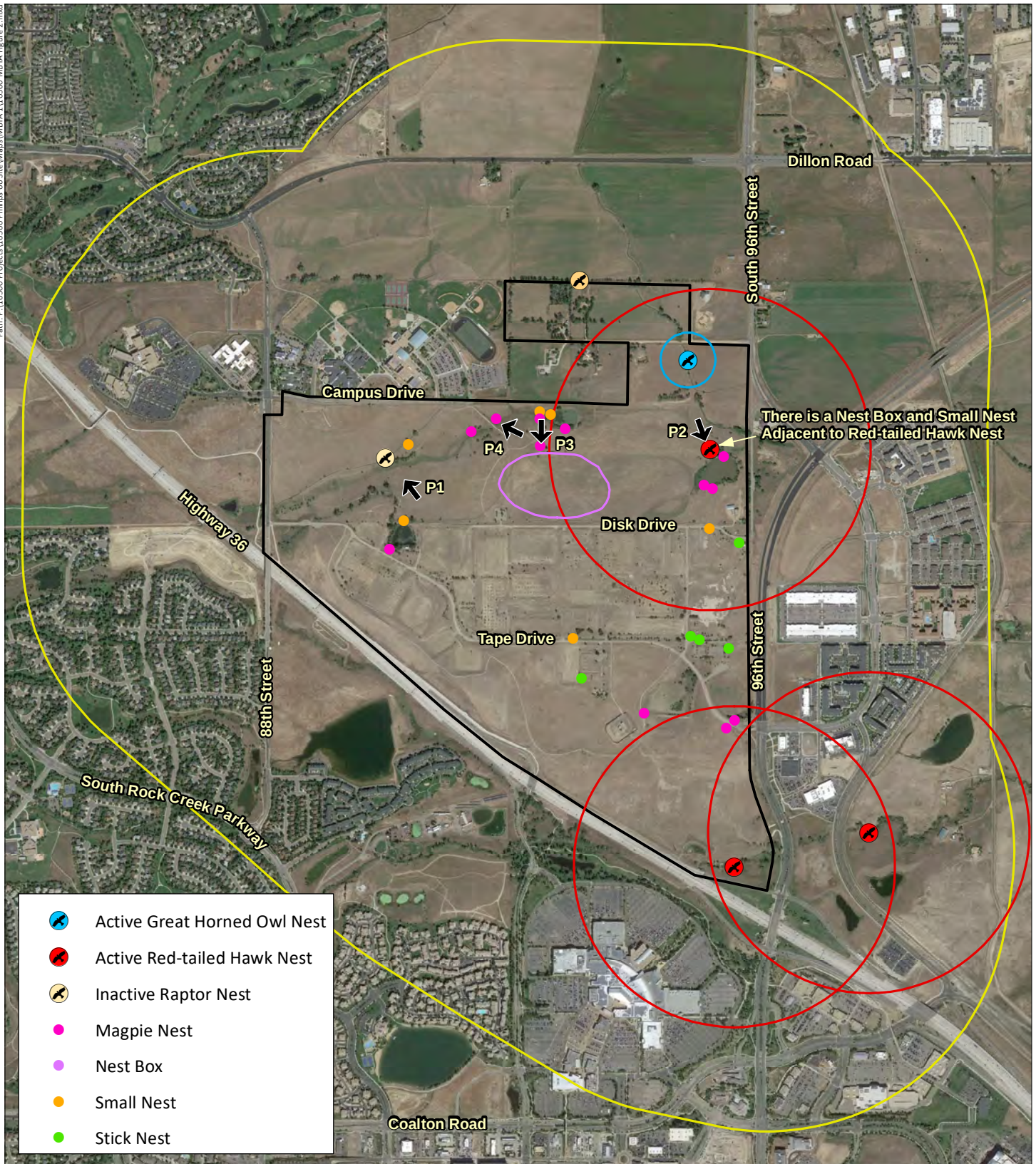
Boulder and Broomfield Counties, Colorado

Figure 1
Vicinity Map

Prepared for: Brue Baukol
Capital Partners
File: 10500 MBTA Figure 1.mxd (GS)
January 19, 2021

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- Active Great Horned Owl Nest
- Active Red-tailed Hawk Nest
- Inactive Raptor Nest
- Magpie Nest
- Nest Box
- Small Nest
- Stick Nest

Redtail Ridge Migratory Bird Nest Surveys

- Photo Point
- Red-tailed Hawk Nest 1/3-Mile Buffer
- Great Horned Owl Nest 300-Foot Buffer
- Killdeer Nesting Area
- Project Area Boundary
- Survey Area

0 750 1,500 Feet



Figure 2
Existing Conditions

Image Source: Google Earth®, September 2019

Prepared for: Brue Baukol
File: 10500 MBTA Figure 2.mxd (GS)
December 18, 2020

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PHOTO LOG
MIGRATORY BIRD NEST SURVEYS —REDTAIL RIDGE
BOULDER AND BROOMFIELD COUNTIES, COLORADO
APRIL 20, 2020



Photo 1 - Raptor nest located within the northwest portion of the project area. View is to the northwest.



Photo 2 - Raptor nest located adjacent to the pond within the northeast portion of the project area. View is to the south.

PHOTO LOG
MIGRATORY BIRD NEST SURVEYS —REDTAIL RIDGE
BOULDER AND BROOMFIELD COUNTIES, COLORADO
APRIL 20, 2020



Photo 3 - Magpie nest located within the northern portion of the project area. View is to the south.



Photo 4 - Magpie nest located within the northern portion of the project area. View is to the northwest.