



NATURAL FEATURES AND WETLANDS REPORT

for

Villages at Sterling Ranch East Residential Development El Paso County, CO

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1.0 INTRODUCTION

Classic SRJ, LLC (“Applicant”) has retained Bristlecone Ecology, LLC (“B.E.” or “Agent”) to perform an environmental assessment and routine wetland delineation and prepare a Natural Features and Wetlands Report for the proposed Villages at Sterling Ranch East residential development project (“Project”), located in unincorporated El Paso County (EPC), Colorado. Contact information for both Applicant and Agent is provided below:

Applicant

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1.1. Purpose and Goals

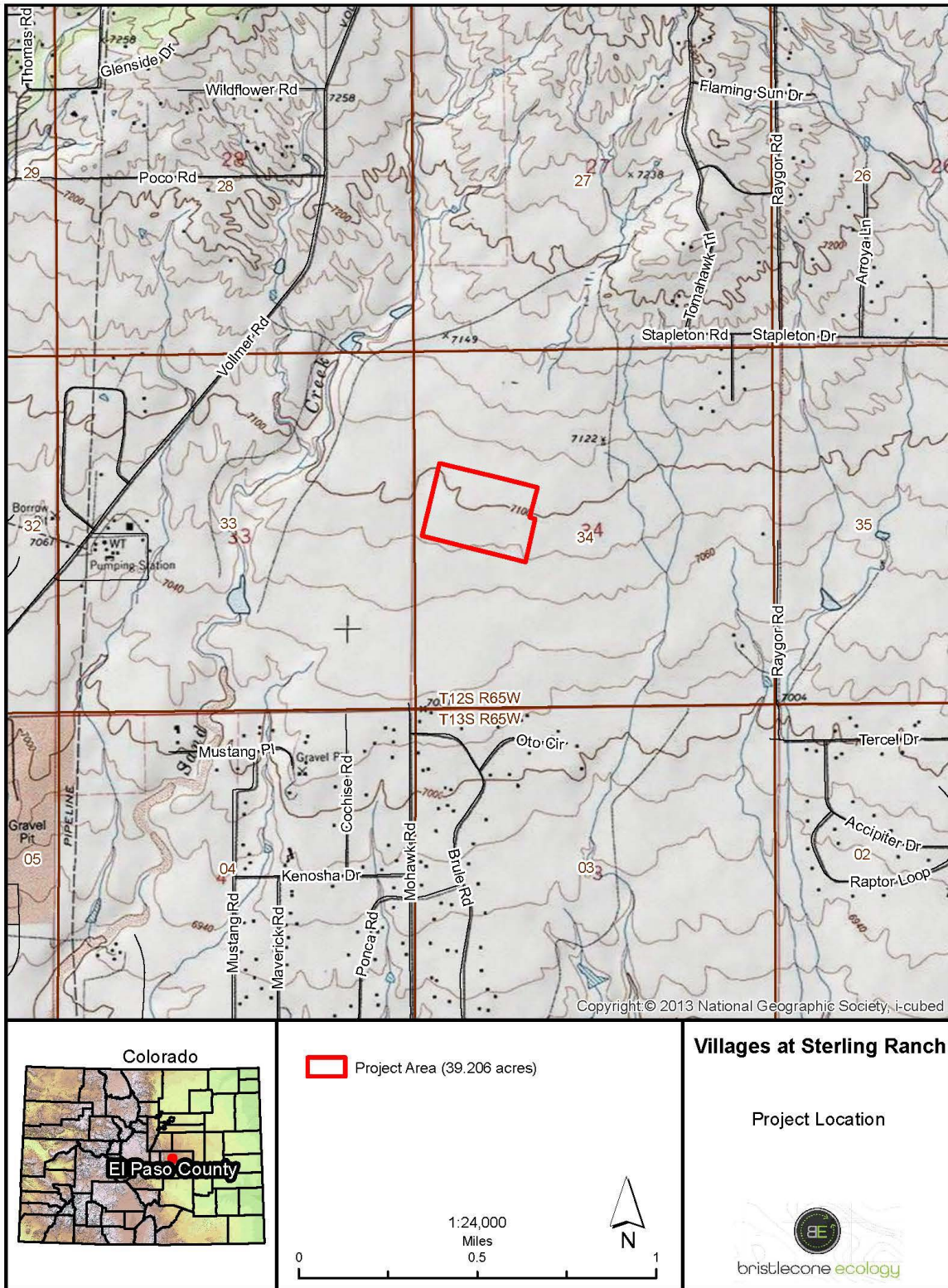
The purpose of this Natural Features and Wetlands Report is to find and document natural resources and existing site conditions in order to identify potential environmental constraints that may affect the development of the Project. In addition, a goal of this report is to provide guidance on regulatory issues that could influence site development in accordance with development planning and application submittals in EPC. Environmental resources and constraints addressed include:

- Vegetation
- Soils
- Aquatic Resources/Wetlands/Waters of the U.S. (WOTUS)
- Wildfire Hazard
- Flood Hazard
- Wildlife Impacts
- Federal and State Listed Threatened and Endangered (T&E) Species

1.2. Project Description and Site Location

The Project will involve a planned unit development (PUD) adjacent to portions of the Sterling Ranch East development east of Sand Creek. The Villages at Sterling Ranch East development will be located on approximately 39.2 acres and will consist of approximately 246 residential lots, stormwater detention facilities, local and arterial roads, utilities, and other facilities and infrastructure. The Project is located east of Vollmer Road and north of E Woodmen Road; it will be immediately southeast of the intersection of future Briargate Parkway and future Sterling Ranch Road. It is bounded on all sides by scattered rural residential development (**Figure I: Project Location Map**). The site is located on a portion of Section 34 in Township 12S, Range 65W, and can be found on the U.S. Geological Survey’s (USGS) Falcon NW 7.5-minute quadrangle (USGS 2020). Topography of the Project consists of rolling foothills grasslands about a mile from the pine-oak woodlands of the Black Forest to the northwest. Portions of the site are already being developed to support the construction of other neighborhoods within the greater Sterling Ranch site.

Figure 1: Project Location Map



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2.0 METHODOLOGY

B.E. performed a desktop review to gather background information about the environmental setting of the Project area. Publicly available data sources queried via desktop included:

- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) data
- USFWS Critical Habitat Portal
- Species profiles and spatial data from Colorado Parks and Wildlife (CPW)
- USFWS National Wetland Inventory (NWI) data
- USGS National Hydrography Dataset (NHD)
- USGS aerial imagery
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panels
- Google Earth current and historic aerial imagery
- Colorado State Forest Service (CSFS) Wildfire Hazard Maps
- National Resources Conservation Service (NRCS) county soil survey data
- Colorado Natural Heritage Program (CNHP) Survey of Critical Biological Resources

Following the desktop review of these resources, a site reconnaissance was conducted on March 30th and April 12th, 2022, to field-verify results of the review and identify potential impacts to these resources and constraints to development. The field reconnaissance focused on identifying and mapping wetland habitat and WOTUS, on classifying vegetation communities on the site, and on identifying suitable wildlife habitat, particularly that which could support T&E species.

3.0 ENVIRONMENTAL SETTING

The Project area is located within the Foothill Grasslands ecoregion in Colorado (Chapman et al. 2006). Topography of the Project consists mainly of a mix of flat to rolling grasslands, bordered on the east side by the Sand Creek stream corridor; pine woodlands interspersed with a few shrubs are located less than a mile to the north of the site. The Foothills Grasslands Ecoregion is composed of a mixture of tall and mid-grasses and isolated pine woodlands (Chapman et al. 2006). Dominant species include little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), and yellow Indiangrass (*Sorghastrum nutans*; Chapman et al. 2006).

Elevations of the Project site range between approximately 7,120 and 7,080 feet above mean sea level (AMSL). The Project site contains no Colorado Natural Heritage Conservation Areas or Potential Conservation Areas according to the CNHP (2022), and according to the USFWS' Information for Planning and Conservation (IPaC; 2022), does not contain Wildlife Refuges or Hatcheries. The area has been used historically as rangeland, but residential and commercial development is increasing steadily.

3.1. Vegetation

The entire Project site is within the Foothill Grasslands, with the predominant vegetation corresponding to that ecoregion. Blue grama (*Bouteloua gracilis*), needle-and-thread (*Hesperostipa comata*), and Junegrass (*Koeleria macrantha*) are the dominant species in uplands throughout the site. Other upland species present include threadleaf sedge (*Carex filifolia*), thickspike wheatgrass (*Elymus lanceolatus*), fringed sage (*Artemisia frigida*), soapweed yucca (*Yucca glauca*), Woods' rose (*Rosa woodsii*), yarrow (*Achillea millefolium*), and hairy false goldenaster (*Heterotheca villosa*), among others. Ponderosa pines (*Pinus ponderosa*) are scattered along the banks of Sand Creek in the northern half of the site. Within wetter areas including wetlands, all of which were associated with Sand Creek, artic rush (*Juncus arcticus*) and Nebraska sedge (*Carex nebrascensis*) are the dominant species, with Drummond's rush (*Juncus drummondii*) and beaked sedge (*Carex utriculata*) also commonly occurring. The wettest areas support panicled bulrush (*Scirpus microcarpus*) and narrowleaf cattail (*Typha latifolia*). A few patches of relatively stunted Western snowberry (*Symphoricarpos occidentalis*) represent the only shrubs present on the site. Sand Creek's perennial hydrology supports an overstory of narrowleaf cottonwoods (*Populus angustifolia*) and a few peachleaf willows (*Salix amygdaloides*). Sandbar willows (*Salix exigua*) are dominant along large portions of Sand Creek and form a thick midstory. Much of the site has been disturbed by cattle grazing, but vegetative cover is relatively extensive. Diversity is moderate for this ecoregion, and the structure of vegetation in the uplands is somewhat poorly developed. Riparian and wetland habitats, where not excessively affected by cattle, are well established and healthy, but do not provide sufficient stabilization to prevent persistent and problematic erosion of the Sand Creek streambanks.

Several noxious weeds are present at the site, mostly scattered throughout the property in low densities. Weed species observed included diffuse knapweed (*Centaurea diffusa*), wavy-leaf thistle (*Cirsium undulatum*), Scotch thistle (*Onopordum acanthium*), common mullein (*Verbascum thapsus*), and kochia (*Kochia scoparia*). Smooth brome (*Bromus inermis*), a non-native grass, is present in more mesic areas along Sand Creek to the west.

B.E. reviewed CNHP data for the Falcon NW, Colorado 7.5-minute quadrangle, which summarizes vegetation communities in the state by USGS quadrangle. Data were reviewed to determine the probability of the presence/absence of significant natural communities, rare plant areas, or riparian corridors that may be within the Project area. Based on CNHP’s data and the site reconnaissance, the probability of these plant communities being impacted by Project development is described below in Table 1.

Table 1. Potentially Impacted Vegetation Communities (CNHP 2022)

Plant Community (Type)	Status ¹	Presence and Location	Probability of Impacts
<i>Andropogon gerardii</i> - <i>Sporobolus heterolepis</i> Western Foothills Grassland (Xeric Tallgrass Prairie)	G2, S1	Mesic habitats of the Rocky Mountain foothills and riverine habitats. This type is a regional endemic found only in eastern Colorado, western Oklahoma, and possibly elsewhere. Reportedly occurs in the nearby Black Forest.	None. Community is not present in the Project area.
<i>Bouteloua gracilis</i> - <i>Bouteloua dactyloides</i> Grassland (Shortgrass Prairie)	G4, S2	Found in flat to rolling uplands throughout much of the central and southern Great Plains. Soil type is often sandy loam. A variety of other short graminoids make up much of the remaining habitat.	Expected. This community covers portions of the Project area, but it is not the primary grassland community at the site.
<i>Hesperostipa comata</i> - <i>Bouteloua gracilis</i> - <i>Carex filifolia</i> Grassland (Montane Grasslands)	G5, S2	Occurs in relatively mesic savanna habitats, on gentle to moderate south- and west-facing slopes. Dense habitat occurs in some areas of the Black Forest.	None. Project area lies on the fringe of this community.
<i>Pinus ponderosa</i> - <i>Quercus gambelii</i> Woodland (Foothills Ponderosa Pine Scrub Woodlands)	G5, S5	This is a widely distributed and broadly defined habitat type in the foothills and mountains. Present in the Black Forest in Colorado wherever ponderosa pine overstory coincides with at least 5% cover of Gambel oak	None. Due north and northwest this is the primary wooded community present, but it does not extend to the Project site.

¹G=Global; S=State

1=Critically Imperiled; 2=Imperiled; 3=Rare or Uncommon; 4=Widespread, Abundant, and Apparently Secure; 5=Demonstrably Widespread, Abundant, and Secure.

3.2. Soils

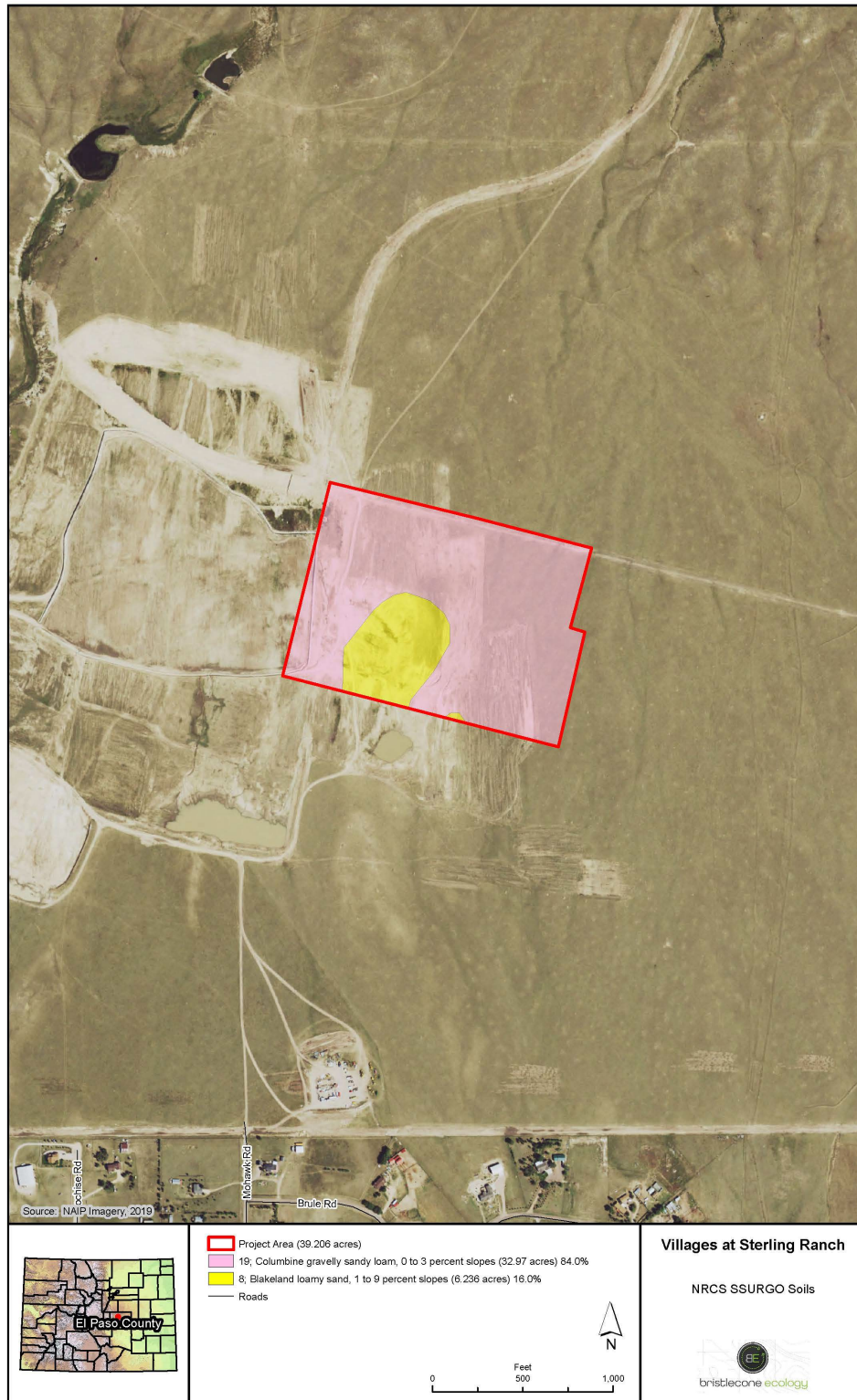
Soil survey data and reports were reviewed to determine the potential for the presence of geologic hazards within the Project (NRCS 2022a). County soil survey data indicate that the site is composed primarily of Columbine gravelly sandy loam (0 to 3 percent slopes; 84% of Project area) and Blakeland loamy sand (1 to 9 percent slopes; 16% of Project area) (NRCS 2022a). While these soils are the dominant series occupying the Project area, there are minor components (called “inclusions”) within each series or consociation that could contribute to the overall soil composition at the site.

The NRCS provides information on soil properties that would influence the development of building sites for dwellings with and without basements, as well as small commercial buildings, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Qualitative soil ratings are assigned to each major soil group and include 'Not Limited', 'Somewhat Limited', and 'Very Limited'. 'Not Limited' indicates that the soil type has properties that are very favorable for the specified type of construction. 'Somewhat Limited' indicates that the soil type has properties that are moderately favorable for the specified type of construction. These limitations can generally be overcome through planning and design considerations. 'Very Limited' indicates that the soil type has properties that cannot generally be overcome through design and planning considerations (NRCS 2022b). Based on the soils present, the entire site is rated 'Not Limited' for dwellings with or without basements (NRCS 2022b). For small commercial buildings, the Blakeland series is rated 'Somewhat Limited' while the Columbine series is rated 'Not Limited' (NRCS 2022b). In terms of area, approximately 84% of the site is rated 'Not Limited' and approximately 16% of the site is rated 'Somewhat Limited' for commercial buildings (NRCS 2022b).

B.E. reviewed the hydric soil ratings for all soil components present on the Project site to aid in the identification of wetland habitats during the site reconnaissance. Hydric soils are those that form under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions, and their formation is required in order for wetlands to become established. Both primary soil series occurring on the site (Columbine and Blakeland) are described as having a low hydric rating El Paso County, with Columbine having a rating of 2 and Blakeland a rating of 1. Hydric ratings are on a scale of 1 to 100, with 100 having greater hydric components and zero having no hydric components (NRCS 2022a). The Pleasant soil series, a minor component of all the primary series on the site, is rated as hydric in El Paso County and is typically found in depressions and drainages where ponding can regularly occur (NRCS 2022c). There were no obvious areas where the Pleasant series was expected to occur as a minor inclusion. Based on these ratings, the overall suitability of the site for the development of hydric soils, and thus the presence of wetlands, is very low.

The two soil series present on the site (Blakeland and Columbine) are grouped into Hydrologic Group A, according to NRCS soils data (NRCS 2022d). The 'A' grouping includes soils that have a high infiltration rate, which results in the soil having a corresponding high rate of surface and ground water transmission. Additional, detailed soil data for the Project will be presented in a soils/geology/geotechnical report that will be submitted separately.

Figure 2: NRCS SSURGO Soils



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3.3. Aquatic Resources

Aquatic resources include jurisdictional wetlands and other regulated Waters of the U.S. (WOTUS) such as streams/rivers, ponds/lakes, and ditches, as well as non-regulated wetlands, streams/rivers, ponds/lakes, ditches, and other surface water features. The USFWS' NWI and USGS' NHD datasets were reviewed for the possible presence of wetlands and streams, respectively, within the Project area. Aerial imagery (USDA 2019 and Google 2021) was reviewed to locate water features not depicted in the NWI and NHD datasets. NHD and NWI data are notoriously inaccurate, necessitating field inspection to verify the presence or absence of the resources depicted in these datasets. No aquatic features were depicted in the in the NHD and NWI data within the boundaries of the Project area (see **Figure 3: Aquatic Resources Desktop Review**).

Because these desktop data are often inaccurate, the watercourses and other aquatic features identified in the preliminary desktop analysis were inspected in the field to assess their jurisdictional potential. A site reconnaissance and routine wetland assessment were conducted on April 12th, 2022. The wetland assessment revealed that there the desktop data were accurate and that there were no aquatic features on the site (see **Figure 4: Wetland Location Map**, and **Appendix A: Photographic Log**):

Based on the information obtained from the site reconnaissance, there are no wetlands on the site associated with the Project. There are extensive wetlands present along and associated with Sand Creek to the west, but these have been delineated separately and are associated with another project and accompanying permit action; they will not be affected by the Villages at Sterling Ranch East development. While only the U.S. Army Corps of Engineers (USACE) may determine the regulatory status of aquatic features under the Clean Water Act, it is B.E.'s professional opinion that there are no wetlands or other aquatic resources on the site.

Figure 3: Aquatic Resources Desktop Review



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Figure 4: Wetland Location Map



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3.4. Noxious Weeds

B.E. prepared a Noxious Weed Management Plan (“Plan”) as a standalone document based on EPC requirements for noxious weed control. The Plan is a Project-specific document that has been designed to set forth Project-level regulations to prevent and control the spread of noxious weeds within the Project area and vicinity. Noxious weeds are defined as those non-native plants that aggressively invade and are detrimental to native vegetation communities and ecosystems. The *Colorado State Noxious Weed Act* (Colorado Revised Statute 35-5.5-103) developed a list of plants considered noxious in the state of Colorado that should be targeted for control by various methods dependent on list category (A, B, or C). The Plan tiers to the requirements set forth by the El Paso County Noxious Weed Management Plan (EPC 2017), and the El Paso County Noxious Weeds and Control Methods report (EPC 2018a), which contain guidelines for the control and treatment of noxious weeds found in the County. EPC requires that commercial or industrial projects that include ground disturbing activities submit a project-specific noxious weed management plan. This Plan provides methods to prevent and control the spread of noxious weeds at construction and post-construction phases of the Project. See **Appendix B: Noxious Weed Management Plan**.

3.5. Wildfire Hazard

In the 2018 El Paso County Development Standards, the stated purpose and intent for fire protection and wildfire mitigation is to ensure that proposed development is reviewed for wildfire risks and adequate fire protection (EPC 2018b). No permit or approval associated with development, construction, or occupancy shall be approved or issued until the provisions of these standards are satisfied. The Project area is located within the Black Forest Fire Protection District (FPD). There are two staffed fire stations in the district servicing the Project area:

- Station 1, 11445 Teachout Road, Colorado Springs (4.57 miles from the western site entrance on future Briargate Parkway)
- Station 2, 16465 Ridge Run Drive, Colorado Springs (9.54 miles from the future Briargate Parkway entrance)

The Black Forest FPD has the following operations equipment available:

Station 1:

- 3 fire engines
 - Type 1 engine, 750 gallons
 - Type 6 brush truck
 - Tender (1,800 gallons)
- 1 ambulance
- 1 Wildland Type 3
- 1 reserve tender
- 1 reserve brush truck
- Command vehicles

Station 2:

- 1 fire engine (Type 1, 500 gallons)
- 1 brush truck (Type 6)
- 1 reserve ambulance

Wildfire hazard for the Project site was evaluated using the Colorado State Forest Service's (CSFS) online Wildfire Risk Assessment Portal (WRAP; CSFS 2020). WRAP allows professionals, planners, and the public to access the best scientific information regarding wildfire risk and establish prevention and mitigation measures accordingly. According to WRAP, the wildfire risk for the Project site is approximately 50% "Moderate Risk" and approximately 50% "High Risk", (CSFS 2020; **Figure 5: Wildfire Hazard Map – Wildfire Risk**). "Wildfire Risk" is determined by CSFS by combining the burn probability rating of a site with the values-at-risk rating. While the Project site has a low to very low rating of values and assets that would be adversely impacted by wildfire, the burn probability for the entire site is rated about 5% "Moderate-High" and about 95% "High" (CSFS 2020; **Figure 6: Wildfire Hazard Map – Burn Probability**). The areas rated for higher burn probability and higher risk are generally further east on the property. Based on field observations, these areas had less disturbance than the other areas of the site; overall vegetative cover was not noticeably different between these areas, except where active earth-moving operations were occurring, thus reducing the overall fire hazard by clearing vegetation.

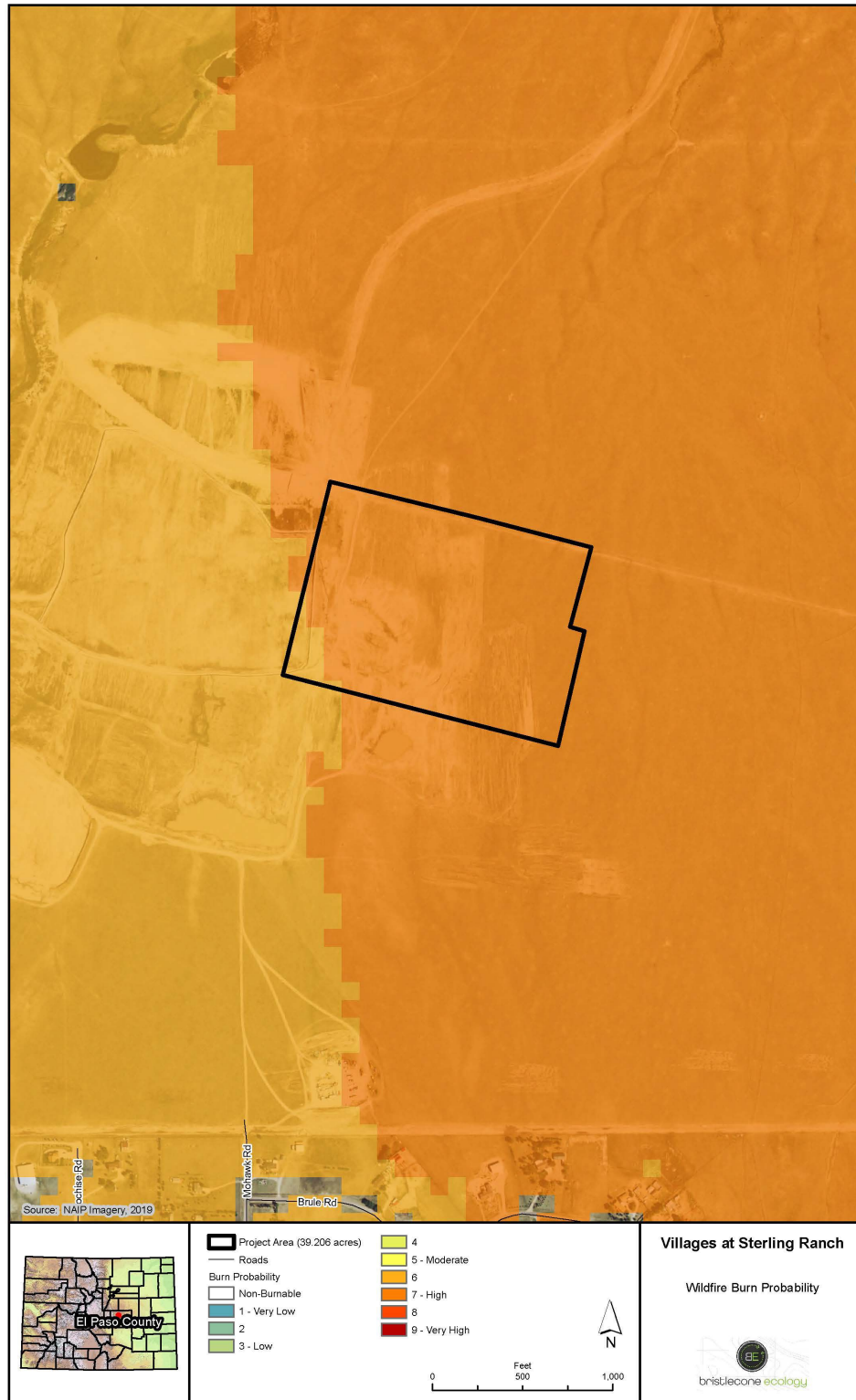
3.6. Flood Hazard

Flood hazard maps and flood insurance rate maps (FIRM) from the Federal Emergency Management Agency (FEMA) were reviewed to determine the potential for flood hazard at the site. Areas along Sand Creek west of the site are located in a Zone A flood hazard zone, indicating an approximate one percent (1%) annual risk of flooding. The site itself where development planned is not located in a flood hazard zone, indicating that flood risk for the entire site is deemed by FEMA to be 'minimal' (**Figure 7: Flood Hazard Map**).

Figure 5: Wildfire Hazard Map – Wildfire Risk



Figure 6: Wildfire Hazard Map – Burn Probability



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Figure 7: Flood Hazard Map



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3.7. Wildlife Communities

The Project site provides moderate quality habitat for some grassland and woodland wildlife, including birds, mammals, and reptiles. Development of the site would inevitably affect some habitat for wildlife, but based on the findings of the site reconnaissance, B.E. classified the expected impacts to grassland species as relatively low, and to woodland species as negligible. Wildlife that could be affected were identified first by referencing CPW’s Species Activity Mapping (SAM) spatial data to assess the likelihood of occurrence for state T&E species, state species of concern (SC), and other general wildlife, including big game species. The Colorado Natural Heritage Program (2022) also provides species status data from tracked natural animal and plant communities in the state. The review indicated that there is potential for the occurrence of 16 mammals, 15 birds, and 14 reptiles, including one SC mammal, one state- and federally-threatened mammal, one state threatened bird, and one federally protected bird (**Table 2: SAM Wildlife Potential for Occurrence**).

Table 2. SAM Wildlife Potential for Occurrence (CPW 2022; CNHP 2022)

Common Name	Scientific Name	Type of Occurrence (CPW 2022)	Status ^{1,2}
Mammals			
Big brown bat	<i>Eptesicus fuscus</i>	Overall range	n/a
Black bear	<i>Ursus americanus</i>	Overall range Human conflict area	n/a
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	Overall range Potential colony occurrence	SC, S3
Dwarf shrew	<i>Sorex nanus</i>	Overall range	G4, S2
Fringed bat	<i>Myotis thysanodes</i>	Overall range	G4, S3
Hoary bat	<i>Lasiurus cinereus</i>	Overall range	n/a
Little brown myotis	<i>Myotis lucifugus</i>	Overall range	n/a
Mountain lion	<i>Puma concolor</i>	Overall range Human Conflict Area	n/a
Mule deer	<i>Odocoileus hemionus</i>	Overall range	n/a
Olive-backed pocket mouse	<i>Perognathus fasciatus</i>	Overall range	G5, S3
Preble’s meadow jumping mouse	<i>Zapus hudsonius preblei</i>	Overall range	FT, ST, S1
Pronghorn	<i>Antilocapra americana</i>	Overall range	n/a
Silver-haired bat	<i>Lasionycteris noctivagans</i>	Overall range	n/a
Western red bat	<i>Lasiurus blossevillii</i>	Overall range	n/a
White-tailed deer	<i>Odocoileus virginianus</i>	Overall range Concentration Area	n/a
White-tailed jackrabbit	<i>Lepus townsendii</i>	Overall range	n/a

¹FT=Federally Threatened; ST=State Threatened; SC=State Species of Concern; BGEPA=Bald and Golden Eagle Protection Act

²State (S) or Global (G) CNHP Status: 1=Critically Imperiled; 2=Imperiled; 3=Vulnerable; 4=Apparently Secure, but Cause for Long Term Concern; 5=Demonstrably Secure; B=Breeding; N=Non-breeding

Table 2. SAM Wildlife Potential for Occurrence, Continued (CPW 2022; CNHP 2022)

Common Name	Scientific Name	Type of Occurrence (CPW 2022)	Status ^{1,2}
Birds			
Band-tailed pigeon	<i>Patagioenas fasciata</i>	Breeding range	S4B
Brewer's sparrow	<i>Spizella breweri</i>	Breeding range	S4B
Burrowing owl	<i>Athene cunicularia</i>	Breeding range	ST
Cassin's sparrow	<i>Peucaea cassinii</i>	Breeding range	n/a
Golden eagle	<i>Aquila chrysaetos</i>	Breeding range	BGEPA, S3S4B
Grasshopper sparrow	<i>Ammodramus savannarum</i>	Breeding range	S3S4B
Lark bunting	<i>Calamospiza melanocorys</i>	Breeding range	S4
Lazuli bunting	<i>Passerina amoena</i>	Breeding range	S5B
Lesser sandhill crane	<i>Antigone canadensis</i> ssp. <i>canadensis</i>	Overall range	n/a
Lewis' Woodpecker	<i>Melanerpes lewis</i>	Breeding range	G4, S4
Northern harrier	<i>Circus hudsonius</i>	Breeding range	S3B
Prairie falcon	<i>Falco mexicanus</i>	Breeding range	S4B, S4N
Rufous hummingbird	<i>Selasphorus rufus</i>	Migration range	n/a
Swainson's hawk	<i>Buteo swainsoni</i>	Breeding range	S5B
Virginia's warbler	<i>Oreothlypis virginiae</i>	Breeding range	S5
Reptiles and Amphibians			
Bullsnake	<i>Pituophis catenifer sayi</i>	Overall range	n/a
Common Lesser Earless Lizard	<i>Holbrookia maculata</i>	Overall range	n/a
Greater short-horned lizard	<i>Phrynosoma hernadesi</i>	Overall range	n/a
Milksnake	<i>Lampropeltis elapsoides</i>	Overall range	n/a
Many-lined skink	<i>Plestiodon multivirgatus</i>	Overall range	n/a
Ornate box turtle	<i>Terrapene ornata ornata</i>	Overall range	n/a
Painted turtle	<i>Chrysemys picta</i>	Overall range	n/a
Plains garter snake	<i>Thamnophis radix</i>	Overall range	n/a
Prairie lizard	<i>Sceloporus consobrinus</i>	Overall range	n/a
Plateau fence lizard	<i>Sceloporus tristichus</i>	Overall range	n/a
Prairie rattlesnake	<i>Crotalus viridis</i>	Overall range	n/a
Six-lined Racerunner	<i>Aspidoscelis sexlineata</i>	Overall range	n/a
Smooth greensnake	<i>Opheodrys vernalis</i>	Overall range	n/a
Terrestrial gartersnake	<i>Thamnophis elegance</i>	Overall range	n/a

¹FT=Federally Threatened; ST=State Threatened; SC=State Species of Concern; BGEPA=Bald and Golden Eagle Protection Act

²State (S) or Global (G) CNHP Status: 1=Critically Imperiled; 2=Imperiled; 3=Vulnerable; 4=Apparently Secure, but Cause for Long Term Concern; 5=Demonstrably Secure; B=Breeding; N=Non-breeding

Following the review of the SAM data, a site reconnaissance was performed to field-verify the information provided in the data and perform a general wildlife survey. In general, the site provides moderate to poor quality habitat for wildlife. The site is dominated by one primary vegetation community, represented by typical Foothill Grasslands vegetation such as blue gramma, prairie Junegrass, and Western wheatgrass. Riparian and wetland vegetation is scarce to nonexistent except along Sand Creek to the west of the site where it is well established. The site has been previously disturbed, and cattle are actively being grazed. Invasive weeds such as diffuse knapweed and Scotch thistle are spread throughout the site in relatively low numbers, with no noticeable concentration areas.

While some of the species listed in the SAM data likely occur on the site, few were observed, and the majority are either not expected to occur, or may occur only rarely based on the limited habitat available. The only species in the SAM data observed were pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), white-tailed jackrabbit (*Lepus townsendii*), northern harrier (*Circus hudsonius*), and Swainson's hawk (*Buteo swainsoni*), while others such as hoary bat (*Lasiurus cinereus*), grasshopper sparrow (*Ammodramus savannarum*), lark bunting (*Calamospiza melanocorys*), common lesser earless lizard (*Holbrookia maculata*), plains garter snake (*Thamnophis radix*), prairie lizard (*Sceloporus consobrinus*), and plateau fence lizard (*Sceloporus tristichus*) are species in the SAM data that are expected to occur on-site in the appropriate seasons and in the appropriate habitats.

State-listed and state sensitive species were not observed. Of note, the site is located within the Colorado Springs Block Clearance Zone for the state-listed Preble's meadow jumping mouse (*Zapus hudsonius preblei*), meaning the presence of this species is precluded. There is grassland habitat available for the state sensitive black-tailed prairie dog (*Cynomys ludovicianus*), but none were observed during the site reconnaissance and no burrows were detected. The site is suitable for the state-threatened burrowing owl (*Athene cunicularia*), though this species is closely associated with abandoned burrows in prairie dog colonies, which were not observed. Golden Eagle (*Aquila chrysaetos*), which receives federal protections under the Bald and Golden Eagle Protection Act (BGEPA) and nests mostly on cliffs, is unlikely to occur except accidentally.

More generally, birds were the most common wildlife observed on the site during the reconnaissance. Species included American goldfinch (*Spinus tristis*), black-billed magpie (*Pica hudsonia*), Canada goose (*Branta canadensis*), common raven (*Corvus corax*), great blue heron (*Ardea herodias*), horned lark (*Eremophila alpestris*), house finch (*Haemorphous mexicanus*), northern flicker (*Colaptes auratus*), red-tailed hawk (*Buteo jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), western meadowlark (*Sturnella neglecta*). These species tend to prefer open grassland habitats, ponds/marshes, or riparian corridors similar to the predominant habitats present on-site.

The site provides some potential nesting habitat for raptors, and fair habitat for northern harrier, which nests on the ground in grasslands (this species was observed during the site reconnaissance). The riparian corridor of Sand Creek provides sufficient substrate for tree-nesting

raptors such as Swainson’s hawk, red-tailed hawk, and the cavity-nesting American kestrel (*Falco sparverius*). No signs of nests were observed in any of the trees along the creek.

The Project area also provides habitat for mammals including rodents, deer, and carnivores. Other than approximately 50 pronghorn and four mule deer, mammals were not observed during the site reconnaissance, but a few other species may be expected to occur, including coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), and/or red fox (*Vulpes vulpes*). Evidence of fossorial mammals was minimal, but a few eskers (mounds) were observed, presumably of pocket gophers (family *Geomidae*). The area is suitable year-round range for mule deer throughout the site, and perhaps white-tailed deer (*Odocoileus virginianus*), particularly along Sand Creek and uplands swales with thicker vegetation. The site also has potential to provide foraging and breeding habitat for predators such as coyote, red fox, and potentially black bear (*Ursus americanus*); it is also listed as a potential human conflict area for mountain lion (*Puma concolor*), though this species is unlikely to occur.

3.8. Federally Listed T&E Species

The USFWS IPaC database (USFWS 2021) was used to determine the likelihood of occurrence of federally listed T&E species within the Project area. The IPaC query listed seven species, including two birds, two fishes, one insect, and two flowering plants with the potential to occur within or be affected by activities in the Project area (**Table 3: Federally Listed T&E Species Potentially Impacted by the Project**). B.E. has provided our professional opinion regarding the probability of occurrence at the Project site and their probability of being impacted by Project development. Preble’s meadow jumping mouse was not included in the IPaC species list and is excluded because the site is within the Preble’s Block Clearance Zone for Colorado Springs (**Appendix C: Preble’s Meadow Jumping Mouse Block Clearance Map**).

Table 3. Federally Listed T&E Species Potentially Impacted by the Project (USFWS 2022)

Common Name	Scientific Name	Habitat Requirements and Likelihood of Impacts	Federal Status ¹
Birds			
Piping plover	<i>Charadrius melodus</i>	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. Specifically, water depletions have been shown to effect habitat for this species downstream in the watersheds listed. Likelihood of impacts: None, Project is not within the watersheds listed.	FT
Eastern black rail	<i>Laterallus jamaicensis</i> ssp. <i>jamaicensis</i>	Eastern black rail is a subspecies of black rail that occurs east of the Rocky Mountains in North America. Black rails are small, cryptic marsh/wetland specialists, and depend entirely upon these habitats to support their resource needs. Requires dense overhead cover (usually cattails [<i>Typha</i> spp.] or bulrushes [<i>Schoenoplectus</i> / <i>Scirpus</i> spp.]) and moist to saturated soils. Eastern black rails have been expanding their range in Colorado. There is negligible suitable habitat on the Project site. Likelihood of impacts: None, suitable habitat is not available on-site.	FT

¹FE= Federally Endangered; FT=Federally Threatened; C=Candidate for Listing

Table 3, Cont. Federally Listed T&E Species Potentially Impacted by the Project (USFWS 2022)

Common Name	Scientific Name	Habitat Requirements and Likelihood of Impacts	Federal Status ¹
Insects			
Monarch butterfly	<i>Danaus plexippus</i>	Monarch butterfly is a candidate species for listing under the ESA. The USFWS determined listing the species was warranted but precluded by work on higher priority listing actions. The species will remain a candidate for listing and reviewed yearly. There are no requirements for candidate species, but due diligence is encouraged. Likelihood of impacts: None, suitable habitat is not available on-site.	C
Fishes			
Greenback cutthroat trout	<i>Oncorhynchus clarkii stomias</i>	Cold, clear, gravely headwater streams and mountain lakes. Genetic sampling has confirmed that the only remaining native pure-strain population occurs in a four mile stretch of creek outside of its native range in Bear Creek (Metcalf et al. 2012). Reintroduction efforts are ongoing in the South Platte River system. Likelihood of impacts: None, habitat not present.	FT
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. Likelihood of impacts: Likelihood of impacts: None, Project is not within the watersheds listed.	FE
Flowering Plants			
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>	Primarily occurs along seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels, and lakeshores. May also occur along irrigation canals, berms, levees, irrigated meadows, gravel pits, borrow pits, and other human-modified wetlands. There are no known populations in El Paso County, and the site is above the elevation (7,000 feet) where surveys are required (USFWS 1992). Likelihood of impacts: None, habitat not present, and the site is not in an area that requires surveys.	FT
Western prairie fringed orchid	<i>Platanthera praeclara</i>	Occurs in tallgrass prairie in Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and Oklahoma. Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. Likelihood of impacts: Likelihood of impacts: None, Project is not within the watersheds listed.	FT

¹FE= Federally Endangered; FT=Federally Threatened; C=Candidate for Listing

4.0 SUMMARY OF IMPACTS

4.1. Vegetation

Vegetation will be unavoidably disturbed through development of the Project site. The vast majority of the site is classified as Foothill Grasslands, which is the primary ecosystem type that will be impacted. The site is generally of moderate quality and impacts are not expected to imperil or substantially harm either ecosystem, though development of the site will result in the loss of several acres of grasslands. No globally-sensitive vegetation communities are present, and one state-sensitive vegetation community is present (Shortgrass Prairie), according to CNHP data for sensitive vegetation communities and site reconnaissance (CNHP 2022). The Project site is on the fringe of the Ponderosa Pine Woodlands, a globally and state stable vegetation community, but the site does not contain pine trees and impacts are not expected. Development of the site will likely increase and improve arboreal habitat through the planting of trees in yards and in open spaces. There are riparian and wetland areas along Sand Creek to the west, and these areas are high-quality habitats, but this corridor is not a part of the Project site.

4.2. Aquatic Resources

There are no aquatic resources on the site, which is comprised entirely of uplands. Wetlands are associated with Sand Creek to the west of the site, but this is not a part of the Project area. There were no wetlands mapped in NHD/NWI data, and the site reconnaissance confirmed there are no aquatic resources present on the site at all (see **Appendix A**). With the exception of the jurisdictional wetlands along Sand Creek where a Section 404 permit is already in process for another Project, there are no wetlands in the vicinity of the site. As such, a Section 404 permit from the USACE is not expected to be necessary.

4.3. Noxious Weeds

Noxious weeds are present on the Project site in several areas but in generally limited quantities. There were no large concentrations of noxious weeds, but scattered noxious weeds were found throughout various portions of the site. List A Species, which require reporting and eradication by Colorado law (Colorado Department of Agriculture [CDA] 2006), were not detected. List B Species require either eradication, containment, or suppression; List C Species require control through either public education or chemical control. List B and List C Species that were detected during the site reconnaissance included:

List B

- Scotch thistle
- Diffuse knapweed

List C

- Common mullein

It is possible that additional noxious weed populations may be present on the site. A site inventory to identify and map noxious weeds during the growing season would be required

to accurately catalogue all populations on the site. A Noxious Weed Management Plan has been prepared for the Project detailing recommendations for identifying and controlling the spread of noxious weeds prior to, during, and/or post-construction.

4.4. Wildfire

Roughly 50% of the Project area is mapped as “Moderate” wildfire risk while the remaining 50% is mapped as “High” risk. The moderate risk areas represent the western half of the site that has been previously disturbed, while the high risk areas are the undisturbed grasslands furthest to the east. The site is rated low in terms of values and assets present that could be lost to wildfire; it is rated high in terms of burn probability based on the available fuels at the site, nearly all of which are grasslands. The nearest fire response is Station 1 in the Black Forest FPD, which is located 4.29 miles from the site; the second closest station is Station 2 in the Black Forest FPD, which is 9.26 miles away.

Development of the site would result in a reduction of the available fuels for wildfires, while simultaneously increasing the values and assets present on the site. As such, the overall wildfire risk index for the Project is expected to be similar before and after development.

4.5. Wildlife

Similar to the impacts for vegetation, some wildlife will inevitably be affected by development of the Project area. Some species that prefer suburban habitats including some species of birds are expected to benefit from increased bird feeders and trees in yards. Designated open spaces will also conserve some of the open grassland habitats that are currently available, but open, undisturbed grasslands will be reduced on the whole. Implementation of a stormwater management plan will assist in protecting water quality in downstream reaches, which will provide additional benefits to aquatic species including invertebrates. Detention facilities may add seasonal water features that could support additional wildlife such as waterfowl. Negligible impacts to forest species are expected as few trees will be cleared for construction. Since grasslands are the most dominant habitat type, grassland species are expected to experience the greatest adverse impacts. Deer, foxes, bears, raccoons, and skunks may experience adverse effects from the increase in urbanization in close proximity to wildland areas, such as the Black Forest. Few sensitive species were present and only in small numbers, and thus are not expected to be affected any more than other species. No state listed species were present.

4.6. Federally Listed T&E Species

Federally listed T&E species are not expected to occur on the Project. All species listed occur in habitats that were not present on the site or would only be affected if development were to involve water depletions that are known to affect downstream populations in different river systems. Preble’s meadow jumping mouse habitat is not present on the site because the entire site is within the Colorado Springs Block Clearance Zone. Based on the absence of listed species or their habitats, consultation with the USFWS is not warranted.

5.0 RECOMMENDATIONS

Upon completion of a desktop review, site reconnaissance, and routine wetland delineation, B.E. finds that some environmental constraints are present within the Project area. Constraints are summarized below within the regulatory context that they apply, and recommendations are provided.

5.1. Clean Water Act

Section 404 of the Clean Water Act prohibits the discharge of dredge or fill material into WOTUS (including wetlands) without a valid permit. Wetland habitat, as well as jurisdictional WOTUS lacking wetlands, are not present on the site, and thus development is not expected to affect any jurisdictional aquatic resources. A Section 404 permit is in process for work within the Sand Creek channel to the west, which is a separate undertaking from this Project. Based on the preliminary site layout and lack of aquatic resources on the site, permitting pursuant to Section 404 of the CWA will not be required. No further action is recommended.

5.2. Endangered Species Act

Section 9(a)(1) of the Endangered Species Act prohibits the take of federally listed species and their habitats, and defines such take as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 U.S.C. § 1531). There is no suitable habitat for listed species on the site. The site is within the Colorado Springs Block Clearance Zone for Preble’s. Other federally listed species are not present, or they would not be affected because the Project will not involve water depletions from the river basins where these species occur. No impacts to any federally listed species are anticipated from site development and no further due diligence recommendations are provided.

5.3. Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act

Migratory birds, and the parts, nests, or eggs of such a bird receive statutory protection under the Migratory Bird Treaty Act, which prohibits the intentional take of migratory birds. Bald eagles (*Haliaeetus leucocephalus*) and golden eagles receive additional statutory protection from accidental take and disturbance under the BGEPA. Both acts particularly apply to nesting birds and their nests. There were no nests observed on the site, but some nesting substrates for raptors and other migratory birds are available west of the site along Sand Creek in the scattered trees. There are no trees large enough to be suitable nesting substrate for bald or golden eagles. Further nesting substrates for other migratory birds are present in the form of open grasslands, as well as isolated ponderosa pines and cottonwoods along Sand Creek, all of which are expected to be used by some migratory birds during the nesting season.

It is recommended that vegetation clearing/grubbing of the site occur outside of the nesting season (March 15th to July 31st) to avoid disturbing nesting migratory birds. If such timing restrictions are not possible, B.E. recommends conducting a migratory bird nesting survey during the nesting season to ensure impacts to nesting birds do not occur. In particular, occupied raptor nests are present along Sand Creek, B.E. recommends following CPW’s guidance for establishing buffer zones to protect nesting raptors from disturbance.

5.4. Colorado Noxious Weed Act

In order to ensure Project compliance with the Colorado Noxious Weed Act, and to comply with the requirements of El Paso County's Noxious Weed Management Plan Act, the Noxious Weed Management Plan referenced in Section 3.4 of this report should be implemented, and further site-specific weed management should be implemented on an ongoing basis. In particular, control of both knapweeds and Scotch thistle (and any other List B noxious weeds observed on the site) is required by Colorado law.

5.5. Non-Statutory Considerations

There is potential for other wildlife, including some big game, to occur within the site. However, no big game migratory routes traverse the Project. In addition, ranges for several migratory birds, including the state-threatened burrowing owl, overlap the Project area, though habitat for burrowing owls is not present based on the lack of prairie dog presence. B.E. recommends coordination with CPW to determine the appropriate avoidance measures to take during and after construction regarding general wildlife. Impacts to wildlife should be reduced as much as practical through the implementation of typical covenants, such as using bear-resistant trash containers and fencing that allows safe passage for game animals.

Should you have any questions regarding the information or recommendations provided in this report, please feel free to contact Bristlecone Ecology at dmaynard@bristleconeecology.com.

Sincerely,

Bristlecone Ecology, LLC



Daniel Maynard
Ecologist

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APPENDIX A

PHOTOGRAPHIC LOG



PHOTO 1 – Overview of typical habitat at the site, taken from the northern portion of the site, looking back toward the southern portions. Where vegetation has not been previously disturbed the area is dominated by blue gramma, Junegrass, and other common shortgrass prairie species. Overall, the prairies on the site show poor to moderate diversity and lack structure. Species diversity is low for both flora and fauna.



PHOTO 2 – View of the part of the disturbed areas of the site near the west-central portion, facing southeast. Flora and fauna have been significantly altered in these areas, and earth-moving activities are ongoing.



APPENDIX B

NOXIOUS WEED MANAGEMENT PLAN



APPENDIX C

PREBLE'S MEADOW JUMPING MOUSE BLOCK CLEARANCE MAP