NATURAL FEATURES AND WETLANDS REPORT

for

Eagleview Residential Subdivision
El Paso County, CO

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1.0 INTRODUCTION

PT Eagleview, LLC ("Applicant") 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 Eagleview residential subdivision ("Project") located in unincorporated El Paso County (EPC), Colorado. Contact information for both Applicant and Agent is provided below:

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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 consist of 38 residential lots, open space tracts, stormwater detention facilities, arterial roads, utilities, and other associated facilities and infrastructure. The Project is located on approximately 121 acres southeast of the intersection of Raygor Road and Arroya Lane, and is bounded on all sides by scattered rural residential development (**Figure I**: *Project Location Map)*. The site is located on a portion of Section 26, 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 flat to rolling foothills grasslands about a quarter-mile from the pine-oak woodlands of the Black Forest to the northwest.

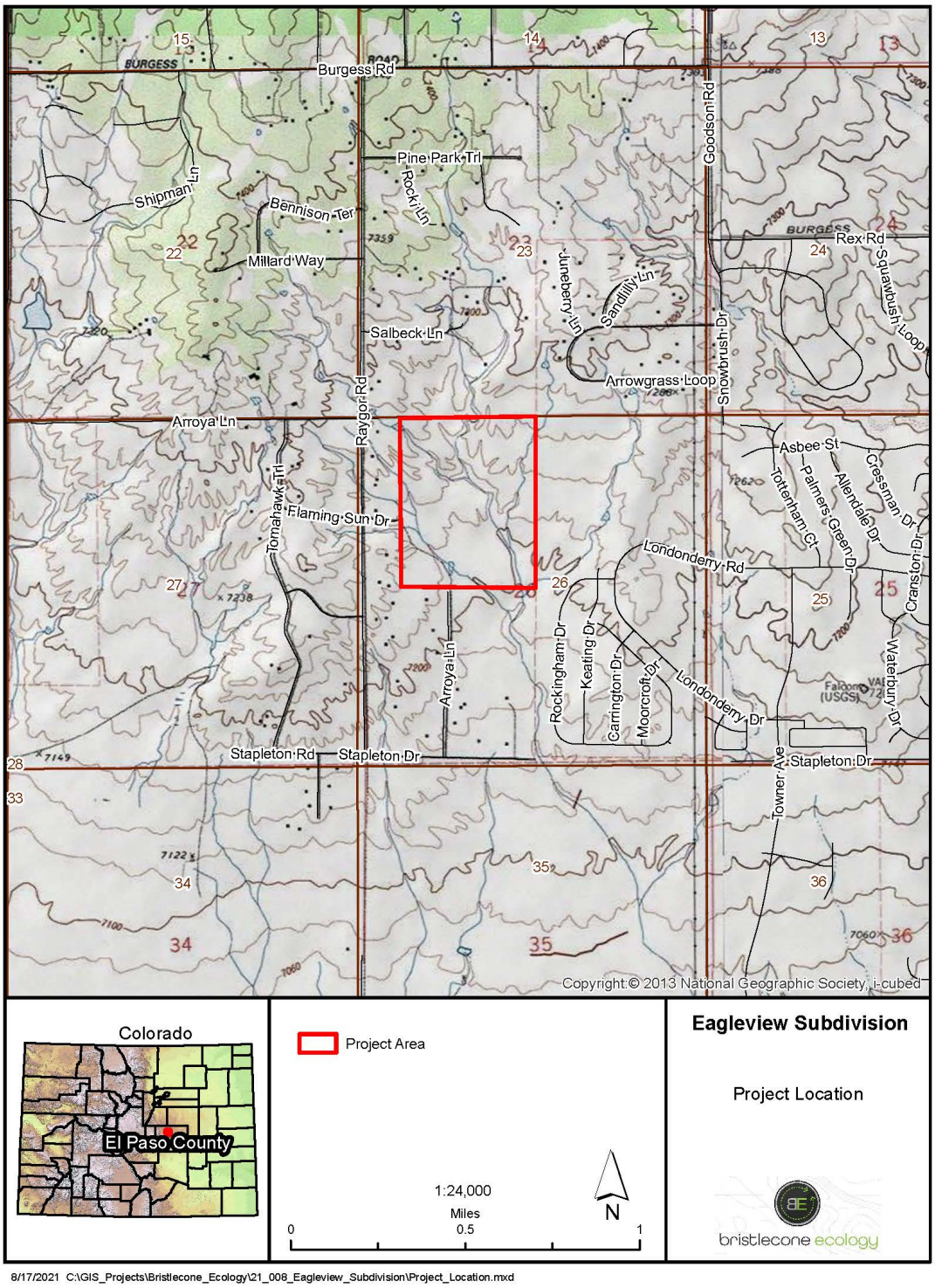

Figure 1: Project Location Map

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 August 19th, 2020, 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 all sides by scattered to medium-density rural residential development. The pine woodlands of the Black Forest region are located less than a half-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 7,200 and 7,280 feet above mean sea level (AMSL). The Project site contains no Colorado Natural Heritage Conservation Areas or Potential Conservation Areas according to the CNHP (2019), and according to the USFWS' Information for Planning and Conservation (IPaC; 2020), 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*), buffalograss (*B. dactyloides*), purple threeawn (*Aristida purpurea*), Western wheatgrass (*Pascopyrum smithii*), and Junegrass (*Koeleria macrantha*) are the dominant species in uplands throughout the site. Other upland species present include threadleaf sedge (*Carex filifolia*), crested wheatgrass (*Elymus cristata*), sideoats grama (*Bouteloua curtipendula*), needle-and-thread (*Hesperostipa comata*), little bluestem (*Schizachyrium scoparium*), fringed sage (*Artemisia frigida*), soapweed yucca (*Yucca glauca*), Woods' rose (*Rosa woodsii*), yarrow (*Achillea millefolium*), stiff goldenrod (*Solidago rigida*), mountain mahogany (*Cercocarpus montanus*), and annual ragweed (*Ambrosia artemisifolia*), among others. Ponderosa pines (*Pinus ponderosa*) are scattered along the banks of the drainageways in the northern half of the site. Within wetter areas including wetlands, all of which were associated with minor tributaries to Black Squirrel Creek, artic rush (*Juncus arcticus*) and Nebraska sedge (*Carex nebrascensis*) are the dominant species, with Drummond's rush (*Juncus drummondii*), beaked sedge (*Carex utriculata*), common spikerush (*Eleocharis palustris*), and sandbar willow (*Salix exigua*) also commonly occurring. The wettest areas support broadleaf cattail (*Typha latifolia*) and narrowleaf cattail (*T. latifolia*). A few patches of relatively stunted Western snowberry (*Symphoricarpos occidentalis*) and the aforementioned mountain mahogany represent the only shrubs present on the site. Intermittent hydrology along the main creek tributary supports scattered narrowleaf cottonwoods (*Populus angustifolia*) and plains cottonwoods (*P. deltoides*). Sandbar willows are predominant along large portions of the main tributary and form a thick midstory in some places. Much of the site appears to have been lightly disturbed by cattle grazing in the past, but vegetative cover is currently relatively extensive and healthy. Diversity is good for this ecoregion, and the structure of vegetation in the uplands is fairly well developed. Riparian and wetland habitats are well established and healthy in the northern half of the Project area, but do not provide sufficient stabilization to prevent persistent erosion

and sand aggradation along the streambed of the main tributary, particularly in the southern half of the site.

Several noxious weeds are present at the site, mostly scattered throughout the property in low densities, with a few concentrations in some areas. Weed species observed included both diffuse knapweed (*Centaurea diffusa*) and spotted knapweed (*C. stoebe*), Canada thistle (*Cirsium arvense*), Scotch thistle (*Onopordum acanthium*), yellow toadflax (*Linaria vulgaris*), common mullein (*Verbascum thapsus*), and annual ragweed. Smooth brome (*Bromus inermis*), a non-native grass form monotypic stands, is present in more mesic areas along the drainageways.

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 2019)

Plant Community (Type)	Status[1]	Presence and Location	Probability of Impacts
Andropogon gerardii - Sporobolus heterolepis 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.
Bouteloua gracilis - Bouteloua dactyloides 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 much of the Project area.
Hesperostipa comata – Bouteloua gracilis – Carex filifolia Grassland (Montane Grasslands)	G5, S2	Occurs in relatively mesic savanna habitats, on gentle to moderate south- and west-facing slopes. Dense habitat occurs between 0.5-1 mile to the west-northwest in the Black Forest.	None. Project area lies on the fringe of this community.
Carex nebrascensis Wet Meadow (Wet Meadows)	G4, S4	This is a widely distributed wet meadow that often comprises wetlands in swales in this region. Under extreme grazing conditions this community can become imperiled.	Possible but minor. There are some stands of this community in swale wetlands in the Project area which will be largely undisturbed.

[1]G=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 2019b). The NRCS provides information on soil properties that would influence the development of building sites for dwellings with basements, 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 2019b).

County soil survey data indicate that the site is composed almost entirely of Pring coarse sandy loam (3 to 8 percent slopes; 99% of Project area); the only other soils series present at the site is Columbine gravelly sandy loam (0 to 3 percent slopes; 1% of Project area) (**Figure 2**: *NRCS SSURGO Soils*). The Pring series (3 to 8 percent slopes) and Columbine series (0 to 3 percent slopes) are both rated 'Not Limited' for the construction of dwellings, with or without basements (NRCS 2019b). While Pring is the dominant series occupying the entire Project area, there are minor components (called "inclusions") within the Pring consociation that could contribute to the overall soil composition at the site. Pring is identified as comprising roughly 85% of the series as the dominant component, while inclusions of minor series that form the remainder of the soils include the Pleasant series and other minor soils. These soils make up roughly 15% of the Project site. The remaining minor soil types on the site are not rated for the construction of dwellings.

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. The Pring series (3 to 8 percent slopes) was described as having a hydric rating of zero in El Paso County, meaning less than 1% of this complex is expected to be hydric. The Columbine series (0 to 3 percent slopes) was described as having a hydric rating of two (2) in El Paso County, meaning approximately 2% of this complex is expected to be hydric. Hydric ratings are on a scale of 1 to 100, with 100 having greater hydric components (NRCS 2019a). A minor component of this complex, the Pleasant series, is rated as hydric in El Paso County and is typically found in depressions and drainages where ponding can occur. Based on these ratings, the overall suitability of the site for the development of hydric soils, and thus the presence of wetlands, is low.

The Pring series is grouped into Hydrologic Group B, according to NRCS soils data (NRCS 2019a). This grouping includes soils that have a moderate infiltration rate, which results in the soils having a corresponding moderate 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.

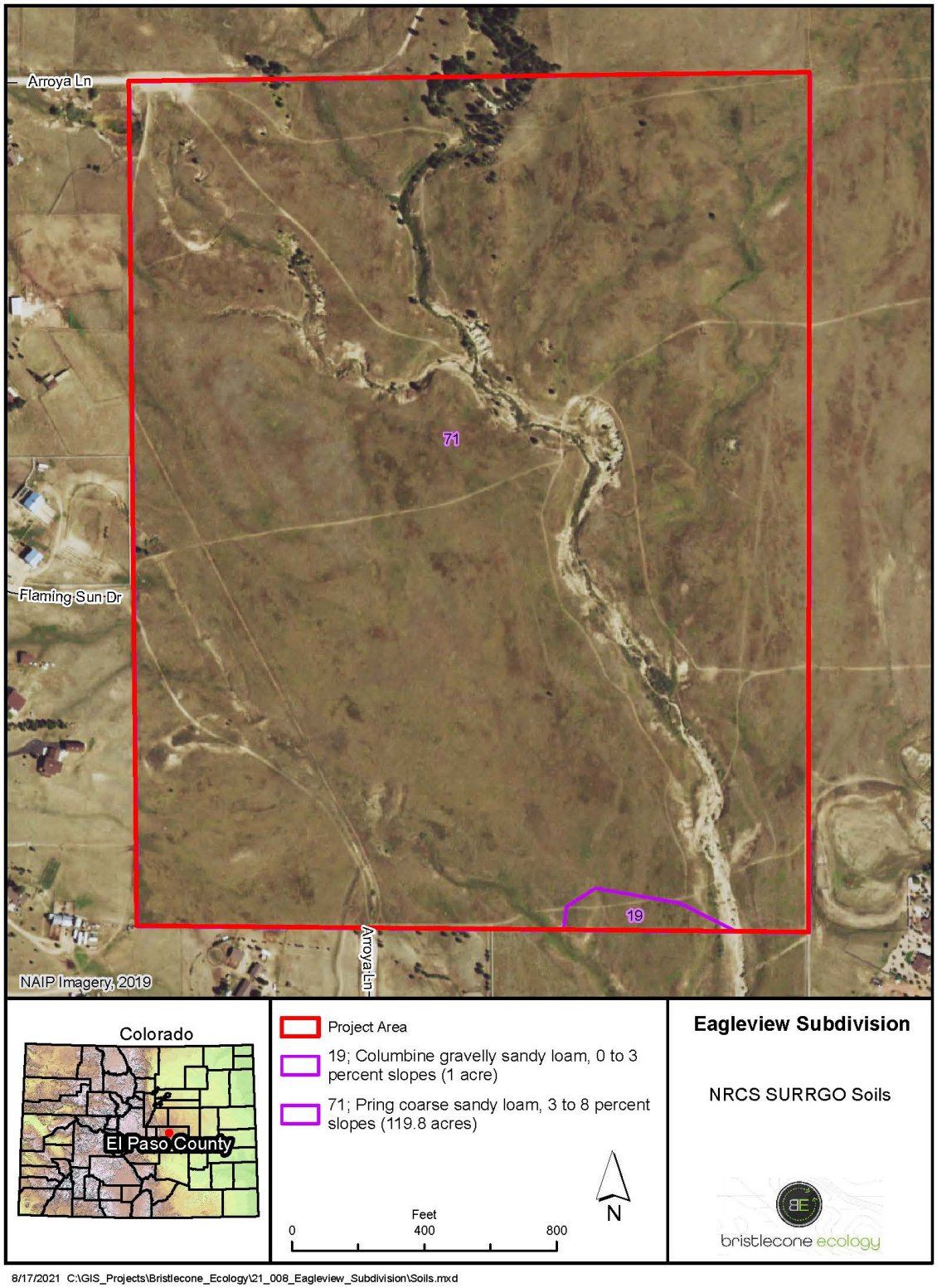

Figure 2: NRCS SSURGO Soils

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 2015 and Google 2020) 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. Aquatic features that were depicted in the data can be seen in **Figure 3**: *Aquatic Resources Desktop Review*, and include:

- The main stem of the tributary to Black Squirrel Creek is mapped in the NHD data as an intermittent stream running north to south nearly through the center of the Project area. The NWI data shows a seasonally flooded wetland occupying the tributary in nearly the exact same area.
- Several minor tributaries to the main tributary of Black Squirrel Creek are mapped in the NHD data as crisscrossing the majority of the Project area. The NWI data shows seasonally flooded wetlands occupying these tributaries in all the same locations.
- A perennial lake/pond (labeled R5UBH on **Figure 3**) is mapped in the NHD data in the southwest quadrant of the Project area along one of the minor tributaries. The same pond is depicted in the NWI data as a permanently flooded riverine wetland.
- A perennial lake/pond (labeled PUSA on **Figure 3**) is mapped in the NHD data near the northwest corner of the Project area along one of the minor tributaries, extending partially onto the site. The same feature is identified as a temporarily flooded palustrine wetland in the NWI data, also extending only partially onto the site.

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 August 19th, 2021. The wetland assessment revealed that few of the features identified in the NHD and NWI data were present on site, with only the main tributary to Black Squirrel Creek generally matching the desktop review data. Other tributaries indicated in the NHD/NWI data were not present on the site as depicted, or present to a vastly reduced extent. All wetlands present on the site were associated with the main stream tributary or its minor tributaries. During the site reconnaissance, the features identified in the NWI/NHD data were inspected and classified as follows (see also **Figure 4**: *Wetland Location Map,* **Appendix I:** *Wetland Delineation Data Forms,* and **Appendix II:** *Photographic Log*):

- The main tributary to Black Squirrel Creek on the site is generally present as mapped in the NWI and NHD data, bisecting the Project area from north to south. The NHD/NWI classification of 'intermittent' is likely accurate in most areas, where flowing water was not present during the wetland assessment. In a few areas, where flowing water was observed and could reasonably be expected to flow throughout other seasons, this tributary may be perennial. This is particularly true near Sample Point 1. Either way, this tributary, long with its associated wetlands, is the primary aquatic feature on the site.

- The minor tributaries to the main tributary depicted in the NHD and NWI data are largely not present as indicated in the datasets. These tributaries are mostly best described as upland swales lacking a defined streambed, banks, or wetland vegetation. One of these tributaries is present in the south-central portion of the site as an isolated wetland that does not have any downstream connection to the main tributary (**Figure 4**). Another tributary just upstream of Sample Point 4 possesses very little wetland vegetation, though it does have a clearly defined streambed and banks. This tributary is best classified as a Water of the U.S. based on its connection to the main tributary, but does not contain wetlands as shown in the NWI data, and is not nearly as extensive as depicted (**Figure 4**).
- The perennial lake/pond depicted in the NHD/NWI data in the southwest quadrant of the site is not present. This area is best described as an upland swale/depression.
- The perennial lake/pond depicted in the NHD data near the northwest corner of the site is not present. There is a small upland depression in this location that is primarily west of the Project area (**Figure 4**).
- A minor tributary to the main tributary of Black Squirrel Creek was delineated during the wetland survey that was not depicted in the NHD/NWI data near Sample Point 3 (**Figure 4**). This tributary passed all three wetland indicators during field testing and was mapped as a potentially jurisdictional wetland.

Based on the information obtained from the site reconnaissance, the wetlands present on the Project site, with the exception of one isolated wetland, appear to maintain a hydrologic connection to other jurisdictional aquatic features and are thus presumed jurisdictional. One tributary to the main channel did not contain wetlands but does demonstrate the characteristics of a stream channel/Water of the U.S. 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 the field-delineated wetlands on the site would be considered jurisdictional, minus the isolated wetland which does not maintain downstream hydrologic connection to Waters of the U.S.

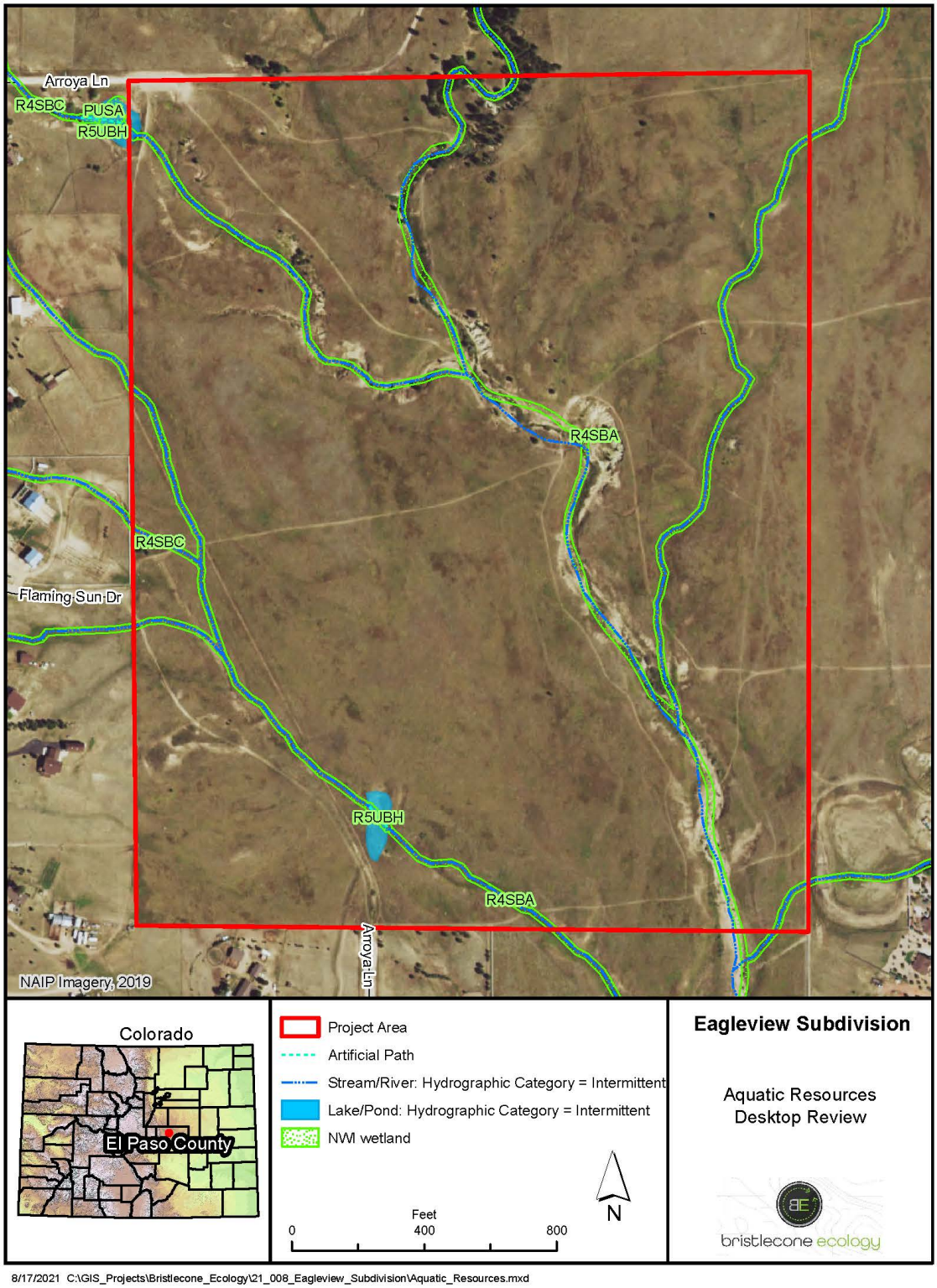

Figure 3: Aquatic Resources Desktop Review

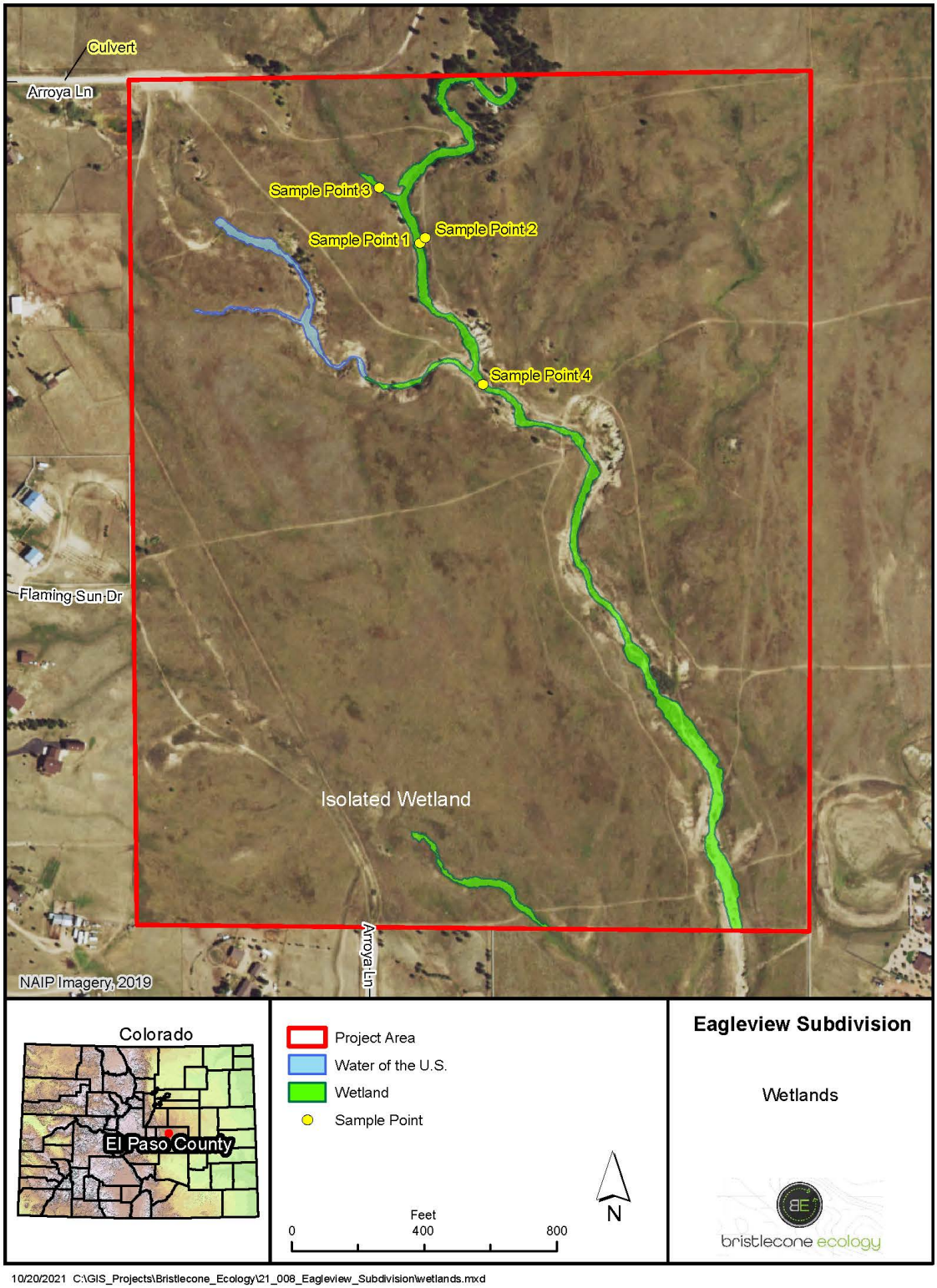

Figure 4: Wetland Location Map

3.4. Noxious Weeds

B.E. prepared a Noxious Week Management Plan ("Plan") as a standalone document for the Project based on El Paso County 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 2018), 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 III**: *Noxious Weed Management Plan*.

3.5. Wildfire Hazard

In the 2017 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. 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 in the Black Forest Fire Protection District. There are two staffed fire stations in the district:

- Station 1, 11445 Teachout Road, Colorado Springs (4.30 miles from site entrance)
- Station 2, 16465 Ridge Run Drive, Colorado Springs (9.23 miles from site entrance)

The Black Forest Fire Protection District has the following operations equipment available:

Station 1:

- 3 fire engines
- 1 water hauler
- 1 ambulance
- Chief's vehicles
- Utility vehicles

Station 2:

- 1 fire engine
- 1 brush truck
- 1 water hauler
- 1 ambulance

Wildfire hazard for the Project site was evaluated using the Colorado State Forest Service's (CSFS) online Wildfire Risk Assessment Portal (WRAP; CSFS 2019). 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 2019; **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 "High" (CSFS 2019; **Figure 6**: *Wildfire Hazard Map – Burn Probability*).

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. The site is not located in a flood hazard zone, and thus flood risk is deemed by FEMA to be 'minimal' (**Figure 7:** *Flood Hazard Map*).

3.7. Wildlife Communities

The Project site provides moderate quality habitat for some grassland and riparian wildlife, including birds, mammals, reptiles, and possibly amphibians. Development of the site would inevitably affect some potential habitat for wildlife, but based on the findings of the site reconnaissance, B.E. classified the expected impacts as relatively low. 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 TES, state species of concern (SC), and other general wildlife, including big game species. The Colorado Natural Heritage Program (2019) 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 13 mammals, 14 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).

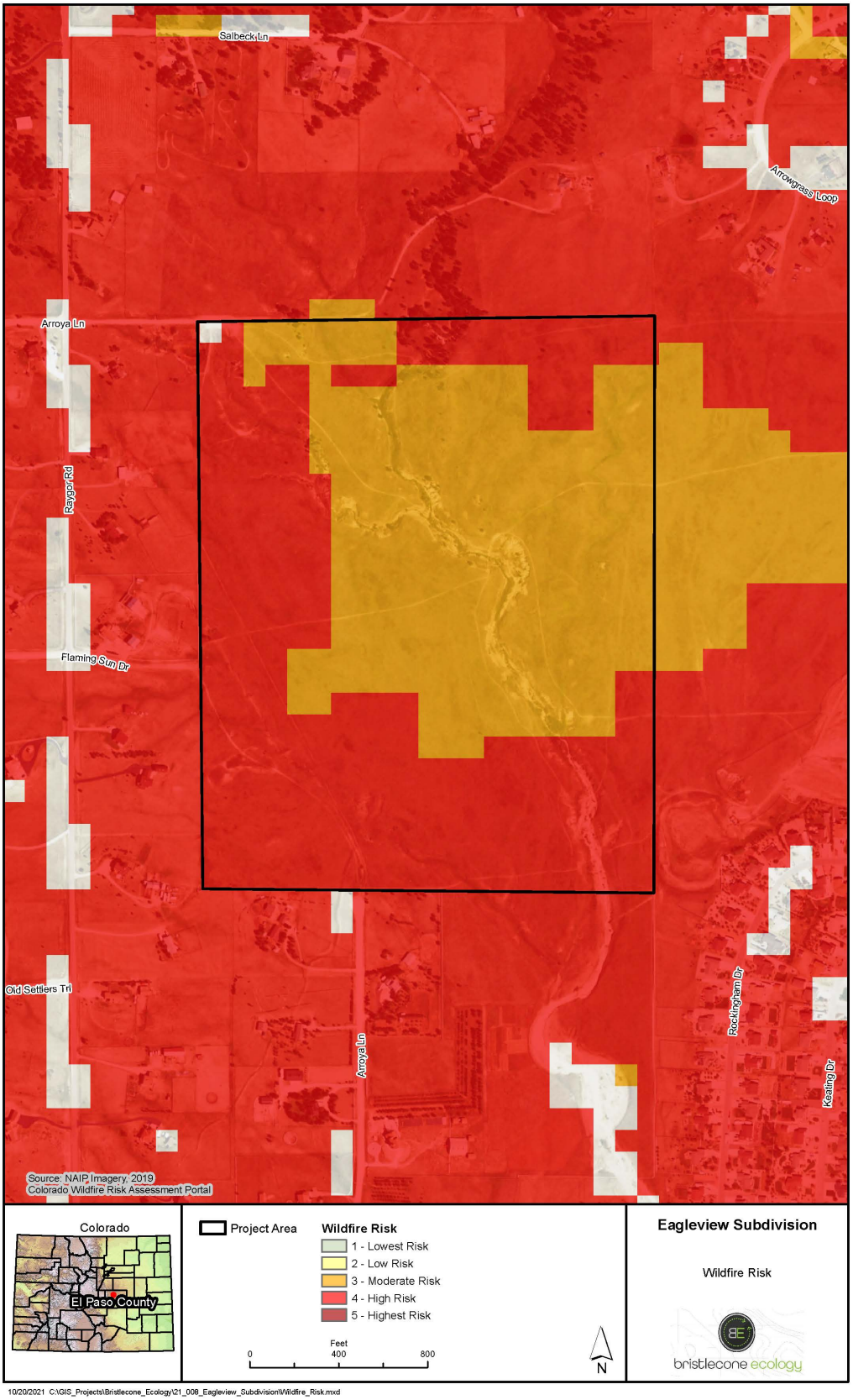

Figure 5: Wildfire Hazard Map – Wildfire Risk

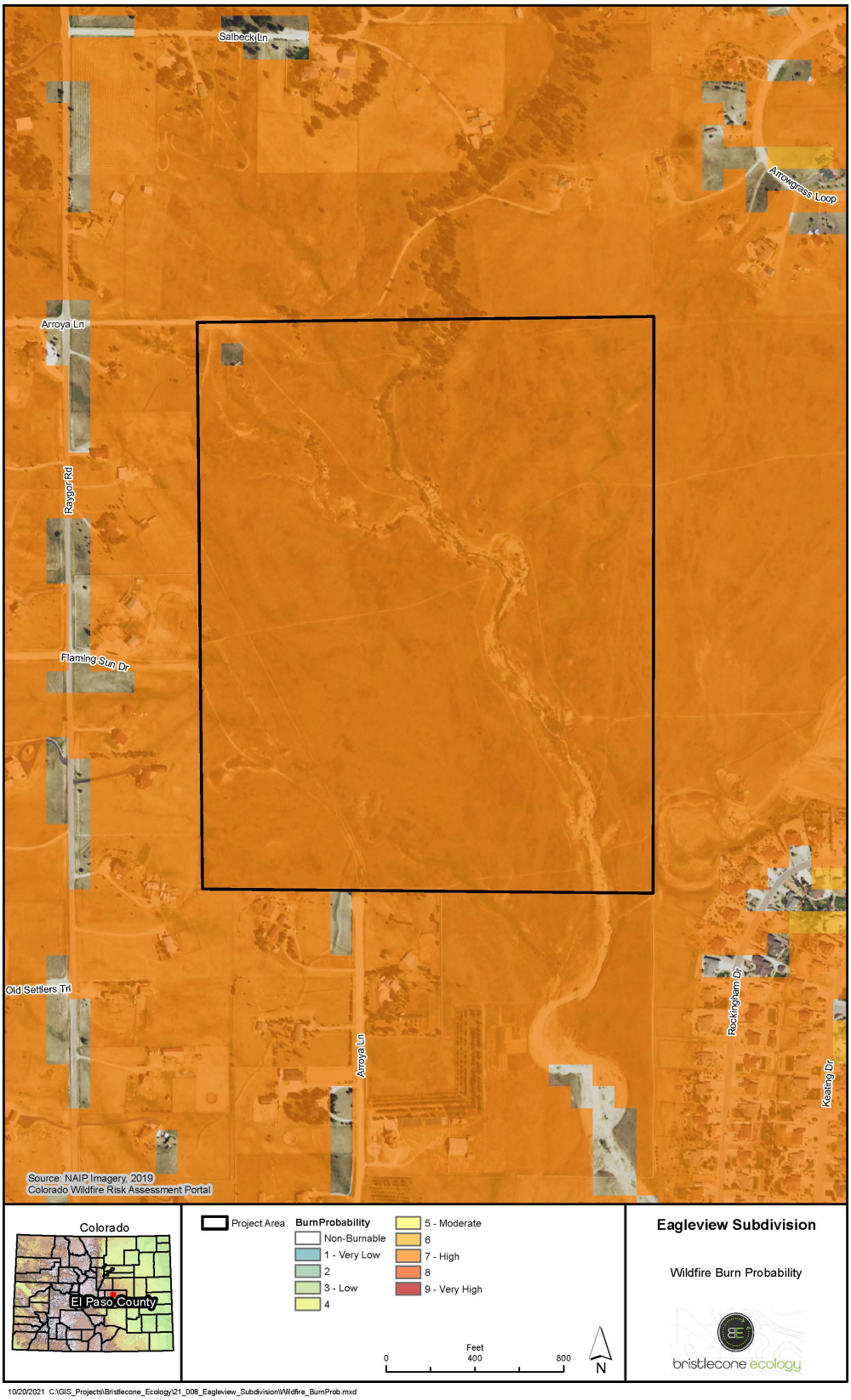

Figure 6: Wildfire Hazard Map – Burn Probability

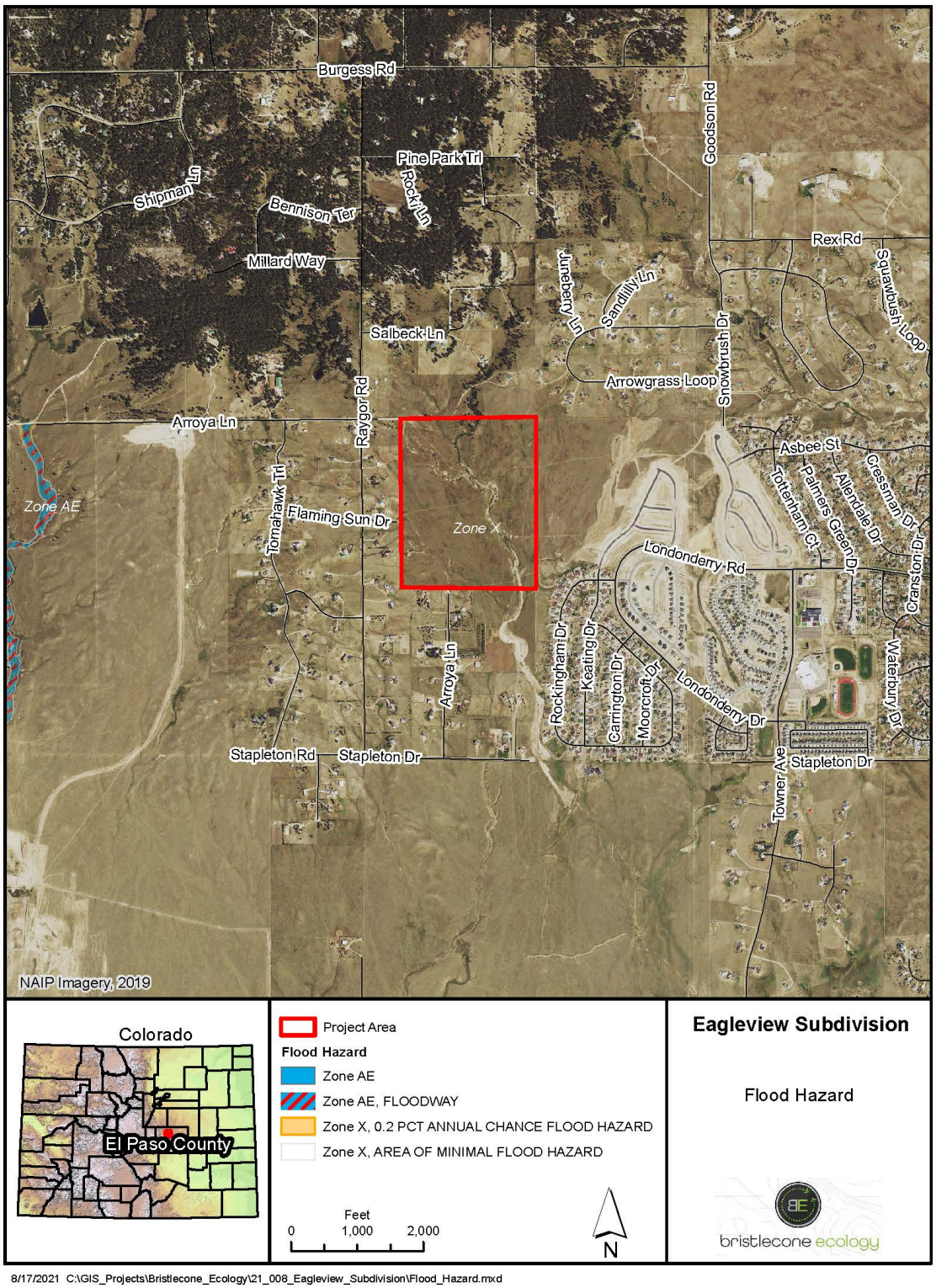

Figure 7: Flood Hazard Map

Table 2. SAM Wildlife Potential for Occurrence (CPW 2019)

Common Name	Scientific Name	Type of Occurrence (CPW 2019)	Status[1,2]
Mammals			
Big brown bat	*Eptesicus fuscus*	Overall range	n/a
Black bear	*Ursus americanus*	Overall range Human conflict area	n/a
Black-tailed prairie dog	*Cynomys ludovicianus*	Overall range Potential colony occurrence	SC, S3
Fringed myotis	*Myotis thysanodes*	Overall range	n/a
Hoary bat	*Lasiurus cinereus*	Overall range	n/a
Little brown myotis	*Myotis lucifugus*	Overall range	n/a
Mountain lion	*Puma concolor*	Overall range Peripheral range	n/a
Mule deer	*Odocoileus hemionus*	Overall range Concentration area	n/a
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	Overall range	FT, ST, S1
Pronghorn	*Antilocapra americana*	Overall range	n/a
Silver-haired bat	*Lasionycteris noctivagans*	Overall range	n/a
Western red bat	*Lasiurus blossevillii*	Overall range	n/a
White-tailed deer	*Odocoileus virginianus*	Overall range	n/a
Birds			
Band-tailed pigeon	*Patagioenas fasciata*	Breeding range	S4B
Brewer's sparrow	*Spizella breweri*	Breeding range	S4B
Burrowing owl	*Athene cunicularia*	Breeding range	ST
Cassin's sparrow	*Peucaea cassinii*	Breeding range	n/a
Golden eagle	*Aquila chrysaetos*	Breeding range	BGEPA, S3S4B
Grasshopper sparrow	*Ammodramus savannarum*	Breeding range	S3S4B
Lark bunting	*Calamospiza melanocorys*	Breeding range	S4
Lazuli bunting	*Passerina amoena*	Breeding range	S5B
Lewis' woodpecker	*Melanerpes lewis*	Breeding range	S4
Northern harrier	*Circus hudsonius*	Breeding range	S3B
Prairie falcon	*Falco mexicanus*	Breeding range	S4B, S4N
Rufous hummingbird	*Selasphorus rufus*	Migration range	n/a
Swainson's hawk	*Buteo swainsoni*	Overall range	S5B
Virginia's warbler	*Oreothlypis virginiae*	Breeding range	S5

Table 2. SAM Wildlife Potential for Occurrence (CPW 2019)

Common Name	Scientific Name	Type of Occurrence (CPW 2019)	Status[1,2]
Reptile and Amphibians			
Bullsnake	*Pituophis catenifer sayi*	Overall range	n/a
Greater short-horned lizard	*Phrynosoma hernadesi*	Overall range	n/a
Lesser earless lizard	*Holbrookia maculate*	Overall range	n/a
Milksnake	*Lampropeltis elapsoides*	Overall range	n/a
Many-lined skink	*Plestiodon multivirgatus*	Overall range	n/a
Ornate box turtle	*Terrapene ornata ornata*	Overall range	n/a
Painted turtle	*Chrysemys picta*	Overall range	n/a
Plains garter snake	*Thamnophis radix*	Overall range	n/a
Prairie lizard	*Sceloporus consobrinus*	Overall range	n/a
Plateau fence lizard	*Sceloporus tristichus*	Overall range	n/a
Prairie rattlesnake	*Crotalus viridis*	Overall range	n/a
Six-lined racerunner	*Aspidoscelis sexlineata*	Overall range	n/a
Smooth greensnake	*Opheodrys vernalis*	Overall range	n/a
Terrestrial gartersnake	*Thamnophis elegance*	Overall range	n/a

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

[2]State (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 review of the SAM data, a site reconnaissance was performed to field-verify the information provided in the SAM data and perform a general wildlife survey. In general, the site provides moderate 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 are also present within the main tributary and its floodplain and are well established. The site has been previously disturbed but current conditions support well-developed and diverse vegetation. Invasive weeds such as diffuse knapweed, spotted knapweed, Canada thistle, Scotch thistle, and annual ragweed are spread throughout the site in relatively low numbers, with no noticeable concentration areas. There are several concentrations of yellow toadflax, a List B invasive weed.

While some of the species listed in the SAM data may occur on the site, few were observed, and the majority are not expected to occur based on the limited habitat availability. Grasshopper sparrow (*Ammodramus savannarum*) and lark bunting (*Calamospiza melanocorys*) were the only

species in the SAM data that were observed on-site. In particular, there is no suitable habitat for the state-listed Preble's meadow jumping mouse (*Zapus hudsonius preblei* or PMJM) and the state-threatened burrowing owl (*Athene cunicularia*). There is habitat available for the state sensitive black-tailed prairie dog (*Cynomys ludovicianus*) but they are not present on the site and no burrows were observed. Golden Eagle is a raptor that receives federal protections under the Bald and Golden Eagle Protection Act (BGEPA) that nests primarily on cliffs, and is unlikely to occur on the site.

Birds were the most common wildlife observed on the site during the reconnaissance. Species included American goldfinch (*Spinus tristis*), barn swallow (*Hirundo rustica*), chipping sparrow (*Spizella passerina*), clay-colored sparrow (*Spizella pallida*), common raven (*Corvus corax*), grasshopper sparrow, horned lark (*Eremophila alpestris*), house finch (*Haemorphous mexicanus*), house wren (*Troglodytes aedon*), lark bunting, lark sparrow (*Chondestes grammacus*), mourning dove (*Zenaida macroura*), northern flicker (*Colaptes auratus*), ret-tailed hawk (*Buteo jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), Say's phoebe (*Sayornis saya*), turkey vulture (*Cathartes aura*), vesper sparrow (*Pooecetes gramineus*), Western wood-pewee (*Contopus sordidulus*), western meadowlark (*Sturnella neglecta*), and Wilson's warbler (*Cardellina pusilla*). These species tend to prefer open habitats, marshes, or wooded areas like the predominant habitats present on-site.

The site provides some potential nesting habitat for raptors, and good habitat for northern harrier (*Circus hudsonius*), which nests on the ground in grasslands (though this species was not observed). The scattered cottonwoods along the creek and patches of pines in the northern part of the site could provide sufficient substrate for tree-nesting raptors such as Swainson's hawk (*Buteo swainsoni*), red-tailed hawk, and the cavity-nesting American kestrel (*Falco sparverius*). No signs of nests were found in any of the trees.

The Project area provides some habitat for mammals including rodents, deer, and carnivores. Mammals were not observed during the site reconnaissance, but a few species are expected to occur, including coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), and 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 and white-tailed deer and is listed as a concentration area for both. The site also has potential to provide foraging and breeding habitat for predators such as coyote, red fox, gray fox (*Urocyon cinereoargenteus*), and potentially black bear (*Ursus americanus*). No black-tailed prairie dogs and no historic or active prairie dog burrows were observed, which also precludes the presence of burrowing owls, a prairie dog burrow specialist.

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 eight species, including one mammal, three birds, two fishes, 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.

Table 3. Federally Listed T&E Species Potentially Impacted by the Project (USFWS 2020)

Common Name	Scientific Name	Habitat Requirements and Likelihood of Impacts	Federal Status[1]
Mammals			
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	Inhabits well-developed riparian habitat with adjacent, relatively undisturbed grassland communities, and a nearby water source. Well-developed riparian habitat includes a dense combination of grasses, forbs and shrubs; a taller shrub and tree canopy may be present. Has been found to regularly use uplands at least as far out as 100 meters beyond the 100-year floodplain. The site is partially within the Colorado Springs Block Clearance Zone for Preble's (**Appendix IV:** *Preble's Meadow Jumping Mouse Block Clearance Map*). **Likelihood of impacts: None, suitable habitat is not available at the site.**	FE
Birds			
Eastern black rail	*Laterallus jamaicensis* ssp. *jamaicensis*	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 [*Typha* spp.] or bulrushes [*Schoenoplectus / Scirpus* 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 the site.**	FT
Piping plover	*Charadrius melodus*	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. **Likelihood of impacts: None, Project is not within the watersheds listed.**	FT
Whooping crane	*Grus americana*	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. **Likelihood of impacts: None, Project is not within the watersheds listed.**	FE
Fishes			
Greenback cutthroat trout	*Oncorhynchus clarkii stomias*	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	*Scaphirhynchus albus*	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. **Likelihood of impacts: None, Project is not within the watersheds listed.**	FE

Table 3, Cont. Federally Listed T&E Species Potentially Impacted by the Project (USFWS 2020)

Common Name	Scientific Name	Habitat Requirements and Likelihood of Impacts	Federal Status[1]
Flowering Plants			
Ute ladies'-tresses orchid	*Spiranthes diluvialis*	Primarily occurs along seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels or valleys, 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 where surveys are required (USFWS 1992). **Likelihood of impacts: None, extremely unlikely for the species to occur, site is not in an area that requires surveys.**	FT
Western prairie fringed orchid	*Platanthera praeclara*	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: None, Project is not within the watersheds listed.**	FT

[1]FE= Federally Endangered; FT=Federally Threatened

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 this or other ecosystems, though development of the site will result in the loss of approximately 119 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 2019). The Project site is on the fringe of the Ponderosa Pine Woodlands, a globally and state stable vegetation community. There are a few trees on the property, mostly associated with drainageways that will be preserved, and thus significant 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. The highest quality habitat on the site is along the main creek tributary in the well-developed wetlands and riparian corridors, primarily in the northern half of the site. These areas will largely be undisturbed by Project construction, so the highest quality habitats will remain.

4.2. Aquatic Resources

Essentially one aquatic resource, albeit extensive and including various features and a few tributaries, is present on the Project site. The main tributary to Black Squirrel Creek is presumed to be jurisdictional, as are its immediate tributaries as depicted in **Figure 4**. This tributary is mapped in NHD/NWI data as an intermittent riverine wetland system in a channel of variable width. Site reconnaissance revealed that many of the aquatic resources depicted in the NWI/NHD data are not present on the site. With the exception of one isolated wetland along the southern boundary of the site, all field-delineated wetlands shown in **Figure 4** are expected to be considered jurisdictional by the USACE. As such, any impacts resulting to these wetlands from construction of the Project are expected to require a Section 404 permit from the USACE. Impacts to aquatic resources may occur depending on Project design.

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

- Canada thistle
- Scotch thistle

- Diffuse knapweed
- Spotted knapweed
- Yellow toadflax

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 (**Appendix III**) detailing recommendations for identifying and controlling the spread of noxious weeds prior to, during, and/or post-construction.

4.4. Wildfire

Roughly half of the Project area is mapped as "Moderate" wildfire risk while the remaining half is mapped as "High" risk. The site is rated low-very 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. The nearest fire response is Station 1 in the Black Forest Fire Protection District, which is 4.30 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 wildfire risk index for the Project is expected to stay close to the same as a result of 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 space 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 and wildfire hazard reduction. Since grasslands are the most dominant habitat type, grassland species are expected to experience the greatest adverse impacts. Deer, foxes, and bears may experience adverse effects from the increase in urbanization in close proximity to wildland areas in the greater vicinity. Few sensitive species were present and only in small numbers, and thus are not expected to be affected any more than other species.

4.6. Federally Listed T&E Species

Federally listed T&E species are not expected to occur on the Project. All species listed either occur in habitats that were not present on the site or would only conditionally be affected if development were to affect downstream populations in different river systems.

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 present in association with the main channel and its tributaries, and these aquatic resources are expected to be jurisdictional. Should the Project impact jurisdictional aquatic resources on the Project site, permitting pursuant to Section 404 of the CWA would be required. Based the preliminary site layout and the proximity of development to jurisdictional aquatic resources, it is anticipated that a Section 404 permit will likely be required.

It is recommended that the Applicant determine the need for Section 404 permits and obtain any necessary permits prior to beginning construction.

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. There is no suitable habitat for PMJM, and a portion of the site is located within the Colorado Springs PMJM Block Clearance zone. Another federally listed species, ULTO, has a very low likelihood of occurring within the Project area in potentially suitable wetland habitats, but is not expected to occur. Because the site is above the altitudinal threshold for ULTO surveys of 6,500 feet, no further due diligence is recommended. 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 MBTA, which prohibits intentional take of migratory birds. Bald and golden eagles (*Haliaeetus leucocephalus* and *Aquila chrysaetos*, respectively) 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 throughout the site, particularly in the scattered timber. There is no suitable habitat for eagles. Further nesting substrates for other migratory birds are present in the form of open grasslands, as well as shrubs along the riparian corridor, 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.

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 yellow toadflax, both knapweeds, and both thistles, all 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. Coordination with CPW would determine the appropriate avoidance measures to take during and after construction regarding general wildlife.

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

6.0 REFERENCES

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APPENDIX I

WETLAND DELINEATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Eagleview City/County: El Paso County Sampling Date: 8/19/2021

Applicant/Owner: PT Eagleview, LLC State: CO Sampling Point: 1

Investigator(s): Dan Maynard Section, Township, Range: Sec. 26, T12S, R65W

Landform (hillslope, terrace, etc.): Swale/Drainage Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): LRR G Lat: 38.982696 Long: -104.639506 Datum: WGS84

Soil Map Unit Name: Pleasant (Torrertic Argiustolls) NWI classification: R4SBA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes [ ] No [✓]

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:
Drought conditions

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus deltoides	3	✓	FAC
2. Pinus ponderosa	3	✓	UPL
3.			
4.			
	6	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' x 15')			
1. Salix bebbiana	10	✓	FACW
2. Salix exigua	2		FACW
3.			
4.			
5.			
	12	= Total Cover	
Herb Stratum (Plot size: 5' x 5')			
1. Carex nebrascensis	40	✓	OBL
2. Juncus arcticus	20	✓	FACW
3. Agrostis gigantea	10		FACW
4. Typha latifolia	20	✓	OBL
5. Mentha arvensis	5		FACW
6. Ambrosia artemisifolia	2		FACU
7. Helianthus annuus	1		FACU
8. Rumex crispus	1		FAC
9.			
10.			
	99	= Total Cover	
Woody Vine Stratum (Plot size: 30' x 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 1.00

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 = 0
FACW species	x 2 = 0
FAC species	x 3 = 0
FACU species	x 4 = 0
UPL species	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = 0.00

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
+ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes [✓] No [ ]

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3"	2.5Y 3/1	100	-	-	-	-	*	*Sandy mucky mineral
3-6"	2.5Y 4/2	100	-	-	-	-	SCL	
6-12"+	5Y 4/2	100	-	-	-	-	LS	Medium

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- - Histosol (A1)
- - Histic Epipedon (A2)
- - Black Histic (A3)
- + Hydrogen Sulfide (A4)
- - Stratified Layers (A5) (**LRR F**)
- - 1 cm Muck (A9) (**LRR F, G, H**)
- - Depleted Below Dark Surface (A11)
- - Thick Dark Surface (A12)
- + Sandy Mucky Mineral (S1)
- - 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- - 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- - Sandy Gleyed Matrix (S4)
- - Sandy Redox (S5)
- - Stripped Matrix (S6)
- - Loamy Mucky Mineral (F1)
- - Loamy Gleyed Matrix (F2)
- - Depleted Matrix (F3)
- - Redox Dark Surface (F6)
- - Depleted Dark Surface (F7)
- - Redox Depressions (F8)
- - High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- - 1 cm Muck (A9) (**LRR I, J**)
- - Coast Prairie Redox (A16) (**LRR F, G, H**)
- - Dark Surface (S7) (**LRR G**)
- - High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- - Reduced Vertic (F18)
- - Red Parent Material (TF2)
- - Very Shallow Dark Surface (TF12)
- - Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes ✓ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- - Surface Water (A1)
- - High Water Table (A2)
- + Saturation (A3)
- - Water Marks (B1)
- - Sediment Deposits (B2)
- - Drift Deposits (B3)
- - Algal Mat or Crust (B4)
- - Iron Deposits (B5)
- - Inundation Visible on Aerial Imagery (B7)
- - Water-Stained Leaves (B9)
- - Salt Crust (B11)
- - Aquatic Invertebrates (B13)
- + Hydrogen Sulfide Odor (C1)
- - Dry-Season Water Table (C2)
- - Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- + Presence of Reduced Iron (C4)
- - Thin Muck Surface (C7)
- - Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- - Surface Soil Cracks (B6)
- - Sparsely Vegetated Concave Surface (B8)
- - Drainage Patterns (B10)
- - Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- - Crayfish Burrows (C8)
- - Saturation Visible on Aerial Imagery (C9)
- + Geomorphic Position (D2)
- - FAC-Neutral Test (D5)
- - Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ✓ Depth (inches): _____

Water Table Present? Yes ☐ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ☐ Depth (inches): Cap. fringe

Wetland Hydrology Present? Yes ✓ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Eagleview City/County: El Paso County Sampling Date: 8/19/2021

Applicant/Owner: PT Eagleview, LLC State: CO Sampling Point: 2

Investigator(s): Dan Maynard Section, Township, Range: Sec. 26, T12S, R65W

Landform (hillslope, terrace, etc.): Top of bank Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): LRR G Lat: 38.982743 Long: -104.639446 Datum: WGS84

Soil Map Unit Name: Pring (Aquic Haplustolls) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes [ ] No [✓]

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [ ]	No [✓]	**Is the Sampled Area within a Wetland?** Yes [ ] No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]	
Wetland Hydrology Present?	Yes [ ]	No [✓]	

Remarks:
Drought conditions

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' x 15')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5' x 5')			
1. Koeleria macrantha	10		UPL
2. Artemisia ludoviciana	8		UPL
3. Solidago rigida	5		FACU
4. Hesperostipa comata	55	✓	UPL
5. Pascopyrum smithii	10		FACU
6. Artemisia frigida	2		UPL
7. Bouteloua gracilis	5		UPL
8.			
9.			
10.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ' x 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5.00

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	80	x 5 =	400
Column Totals:	95 (A)		460 (B)

Prevalence Index = B/A = 4.84

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes [ ] No [✓]

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8"	10YR 4/2	100	-	-	-	-	SL	Medium
8-15"	10YR 3/3	100	-	-	-	-	SL	Medium
15"+	2.5Y 4/2	100	-	-	-	-	SL	Coarse

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- - Histosol (A1)
- - Histic Epipedon (A2)
- - Black Histic (A3)
- - Hydrogen Sulfide (A4)
- - Stratified Layers (A5) (**LRR F**)
- - 1 cm Muck (A9) (**LRR F, G, H**)
- - Depleted Below Dark Surface (A11)
- - Thick Dark Surface (A12)
- - Sandy Mucky Mineral (S1)
- - 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- - 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- - Sandy Gleyed Matrix (S4)
- - Sandy Redox (S5)
- - Stripped Matrix (S6)
- - Loamy Mucky Mineral (F1)
- - Loamy Gleyed Matrix (F2)
- - Depleted Matrix (F3)
- - Redox Dark Surface (F6)
- - Depleted Dark Surface (F7)
- - Redox Depressions (F8)
- - High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- - 1 cm Muck (A9) (**LRR I, J**)
- - Coast Prairie Redox (A16) (**LRR F, G, H**)
- - Dark Surface (S7) (**LRR G**)
- - High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- - Reduced Vertic (F18)
- - Red Parent Material (TF2)
- - Very Shallow Dark Surface (TF12)
- - Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/a

Depth (inches): N/a

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- - Surface Water (A1)
- - High Water Table (A2)
- - Saturation (A3)
- - Water Marks (B1)
- - Sediment Deposits (B2)
- - Drift Deposits (B3)
- - Algal Mat or Crust (B4)
- - Iron Deposits (B5)
- - Inundation Visible on Aerial Imagery (B7)
- - Water-Stained Leaves (B9)
- - Salt Crust (B11)
- - Aquatic Invertebrates (B13)
- - Hydrogen Sulfide Odor (C1)
- - Dry-Season Water Table (C2)
- - Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- - Presence of Reduced Iron (C4)
- - Thin Muck Surface (C7)
- - Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- - Surface Soil Cracks (B6)
- - Sparsely Vegetated Concave Surface (B8)
- - Drainage Patterns (B10)
- - Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- - Crayfish Burrows (C8)
- - Saturation Visible on Aerial Imagery (C9)
- - Geomorphic Position (D2)
- - FAC-Neutral Test (D5)
- - Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Eagleview City/County: El Paso County Sampling Date: 8/19/2021

Applicant/Owner: PT Eagleview, LLC State: CO Sampling Point: Sample Pt 3

Investigator(s): Dan Maynard Section, Township, Range: Sec. 26, T12S, R65W

Landform (hillslope, terrace, etc.): Swale/Slough Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR G Lat: 38.983160 Long: -104.639930 Datum: WGS84

Soil Map Unit Name: Pring (Aquic Haplustolls) NWI classification: R4SBA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes [ ] No [✓]

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:
Drought conditions

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' x 15')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5' x 5')			
1. Carex nebrascensis	20	✓	OBL
2. Agrostis gigantea	18	✓	FACW
3. Juncus arcticus	20	✓	FACW
4. Plantago eriopoda	18	✓	FAC
5. Helianthus annuus	7		FACU
6. Cirsium arvense	2		FAC
7. Centaurea diffusa	3		UPL
8. Linaria vulgaris	3		UPL
9. Achillea millefolium	2		UPL
10. Other forbs	2		
	95	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5.00

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	38	x 2 =	76
FAC species	20	x 3 =	60
FACU species	7	x 4 =	28
UPL species	8	x 5 =	40
Column Totals:	93 (A)		224 (B)

Prevalence Index = B/A = 2.41

Hydrophytic Vegetation Indicators:

+ 1 - Rapid Test for Hydrophytic Vegetation

+ 2 - Dominance Test is >50%

+ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes [✓] No [ ]

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 3/2	97	7.5YR 5/8	3	C	PL	SL	Medium-coarse
6-12"	2.5Y 5/3	100	-	-	-	-	SL	Coarse
12"+	C Horizon	100	-	-	-	-	*	Impermeable C Horizon

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- - Histosol (A1)
- - Histic Epipedon (A2)
- - Black Histic (A3)
- - Hydrogen Sulfide (A4)
- - Stratified Layers (A5) (**LRR F**)
- - 1 cm Muck (A9) (**LRR F, G, H**)
- - Depleted Below Dark Surface (A11)
- - Thick Dark Surface (A12)
- - Sandy Mucky Mineral (S1)
- - 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- - 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- - Sandy Gleyed Matrix (S4)
- + Sandy Redox (S5)
- - Stripped Matrix (S6)
- - Loamy Mucky Mineral (F1)
- - Loamy Gleyed Matrix (F2)
- - Depleted Matrix (F3)
- - Redox Dark Surface (F6)
- - Depleted Dark Surface (F7)
- - Redox Depressions (F8)
- - High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- - 1 cm Muck (A9) (**LRR I, J**)
- - Coast Prairie Redox (A16) (**LRR F, G, H**)
- - Dark Surface (S7) (**LRR G**)
- - High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- - Reduced Vertic (F18)
- - Red Parent Material (TF2)
- - Very Shallow Dark Surface (TF12)
- - Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compacted soil

Depth (inches): 12"

Hydric Soil Present? Yes ✓ No

Remarks:

Perched water table due to impermeable layer at 12" depth; typical C Horizon layer in Pring soil series composed of hard, compacted gravel

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- - Surface Water (A1)
- - High Water Table (A2)
- - Saturation (A3)
- - Water Marks (B1)
- - Sediment Deposits (B2)
- - Drift Deposits (B3)
- - Algal Mat or Crust (B4)
- - Iron Deposits (B5)
- - Inundation Visible on Aerial Imagery (B7)
- - Water-Stained Leaves (B9)
- - Salt Crust (B11)
- - Aquatic Invertebrates (B13)
- - Hydrogen Sulfide Odor (C1)
- - Dry-Season Water Table (C2)
- + Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- - Presence of Reduced Iron (C4)
- - Thin Muck Surface (C7)
- - Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- - Surface Soil Cracks (B6)
- - Sparsely Vegetated Concave Surface (B8)
- + Drainage Patterns (B10)
- - Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- - Crayfish Burrows (C8)
- - Saturation Visible on Aerial Imagery (C9)
- + Geomorphic Position (D2)
- + FAC-Neutral Test (D5)
- - Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ✓ Depth (inches): _____

Water Table Present? Yes ☐ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Eagleview City/County: El Paso County Sampling Date: 8/19/2021

Applicant/Owner: PT Eagleview, LLC State: CO Sampling Point: Sample Pt 4

Investigator(s): Dan Maynard Section, Township, Range: Sec. 26, T12S, R65W

Landform (hillslope, terrace, etc.): River bottom Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR G Lat: 38.981524° Long: -104.638837° Datum: WGS84

Soil Map Unit Name: Pring (Aquic Haplustolls) NWI classification: R4SBA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes [ ] No [✓]

Are Vegetation N, Soil Yes, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:

Drought conditions; problematic hydric soil - no indicators present, but shallow soils above sand depositions displayed redox features indicating anoxic conditions during periods of inundation/saturation. Much of the stream system exhibits this characteristic

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' x 15')			
1. Salix exigua	30	✓	FACW
2.			
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 5' x 5')			
1. Juncus arcticus	35	✓	FACW
2. Juncus drummondii	20	✓	FACW
3. Agrostis gigantea	15		FACW
4. Achillea millefolium	3		FAC
5. Solidago rigida	2		FACU
6. Carex praegracilis	5		FACW
7. Helianthus annuus	5		FACU
8.			
9.			
10.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30' x 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 15.00

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	3	x 3 =	9
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals:	100 (A)		217 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

+ 1 - Rapid Test for Hydrophytic Vegetation

+ 2 - Dominance Test is >50%

+ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes [✓] No [ ]

Remarks:

Roots only 4-6" deep

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2"	2.5Y 6/2	95	7.5YR 5/8	5	C	M	SL	
2-4"	2.5Y 5/3	100	-	-	-	-	LS	
4-18"	2.5Y 6/3	100	-	-	-	-	Sand	Coarse

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- - Histosol (A1)
- - Histic Epipedon (A2)
- - Black Histic (A3)
- - Hydrogen Sulfide (A4)
- - Stratified Layers (A5) (**LRR F**)
- - 1 cm Muck (A9) (**LRR F, G, H**)
- - Depleted Below Dark Surface (A11)
- - Thick Dark Surface (A12)
- - Sandy Mucky Mineral (S1)
- - 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- - 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- - Sandy Gleyed Matrix (S4)
- - Sandy Redox (S5)
- - Stripped Matrix (S6)
- - Loamy Mucky Mineral (F1)
- - Loamy Gleyed Matrix (F2)
- - Depleted Matrix (F3)
- - Redox Dark Surface (F6)
- - Depleted Dark Surface (F7)
- - Redox Depressions (F8)
- - High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- - 1 cm Muck (A9) (**LRR I, J**)
- - Coast Prairie Redox (A16) (**LRR F, G, H**)
- - Dark Surface (S7) (**LRR G**)
- - High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- - Reduced Vertic (F18)
- - Red Parent Material (TF2)
- - Very Shallow Dark Surface (TF12)
- - Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes ✓ No ☐

Remarks:

Problematic hydric soil involving very shallow soil over deposited sand. Wetland plants grow but roots remain shallow to utilize water present near surface during precip events

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- - Surface Water (A1)
- - High Water Table (A2)
- - Saturation (A3)
- - Water Marks (B1)
- - Sediment Deposits (B2)
- - Drift Deposits (B3)
- - Algal Mat or Crust (B4)
- - Iron Deposits (B5)
- - Inundation Visible on Aerial Imagery (B7)
- - Water-Stained Leaves (B9)
- - Salt Crust (B11)
- - Aquatic Invertebrates (B13)
- - Hydrogen Sulfide Odor (C1)
- - Dry-Season Water Table (C2)
- + Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- - Presence of Reduced Iron (C4)
- - Thin Muck Surface (C7)
- - Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- - Surface Soil Cracks (B6)
- - Sparsely Vegetated Concave Surface (B8)
- - Drainage Patterns (B10)
- - Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- - Crayfish Burrows (C8)
- - Saturation Visible on Aerial Imagery (C9)
- + Geomorphic Position (D2)
- + FAC-Neutral Test (D5)
- - Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ✓ Depth (inches): _____

Water Table Present? Yes ☐ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX II

PHOTOGRAPHIC LOG

PHOTO 1 – View of one of the pockets of dense wetland vegetation along the main stream tributary near Sample Point 1. There are many pockets of healthy cattail and sedge marshes along the main tributary upstream of the confluence near Sample Point 4.

PHOTO 2 – View of the lower stretches of the main tributary, facing southeast. The nature of the stream changes here to a broad, shallow streambed with minimal wetland vegetation (sandbar willows are predominant) due to significant sand deposition.

PHOTO 3 – Near Sample Point 4 below the confluence of the main tributary and its primary tributary, facing southwest. The active stream channel is narrow here but supports a corridor of hydrophytes (the darker vegetation against the far bank in the right-center of the photo).

PHOTO 4 – Looking at the confluence of the main tributary and its primary tributary just upstream of Sample Point 4, facing south. The denser wetland vegetation can just be seen continuing up the left (main) tributary, while the right tributary becomes sandy and devoid of vegetation.

PHOTO 5 – View of the upper reach of the primary tributary to the main stream where this tributary transitions to an upland swale. Streambed and stream banks are no longer present, indicating the tributary has transitioned to uplands.

APPENDIX III

NOXIOUS WEED MANAGEMENT PLAN

NOXIOUS WEED MANAGEMENT PLAN

for

Eagleview Residential Subdivision
El Paso County, CO

PREPARED FOR:

PT Eagleview, LLC
1864 Woodmoor Drive, Suite 100
Monument, CO 80132
Contact: Joe DesJardin

PREPARED BY:

Bristlecone Ecology, LLC
2023 W. Scott Place
Denver, CO 80211
Contact: Dan Maynard
Phone: 971.237.3906

August 2021

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APPENDICES

EXECUTIVE SUMMARY

Bristlecone Ecology, LLC ("Bristlecone") was retained by PT Eagleview, LLC ("Applicant") to prepare a Noxious Weed Management Plan ("Plan") for the proposed Eagleview Residential project ("Project"), located in unincorporated El Paso County, Colorado. The Project would develop 38 residential lots on approximately 121 acres of undeveloped land southeast of the intersection of Raygor Road and Arroya Lane and is bounded by scattered residential development on all sides.

This 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 shall tier to the requirements set forth by the El Paso County (EPC) Noxious Weed Management Plan (2017a), which contains guidelines for control and treatment of noxious weeds found in the County. EPC requires that residential 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.

Both scattered and widespread concentrations of noxious weeds were found throughout portions of the site. Scattered concentrations of yellow toadflax (*Linaria vulgaris*) and Canada thistle (*Cirsium arvense*) were observed in various portions of the project; yellow toadflax was observed along swales and more mesic areas, while Canada thistle was sparsely distributed throughout uplands. Both diffuse knapweed (*Centaurea diffusa*) and spotted knapweed (*Centaurea stoebe*) were observed in abundance throughout most of the site.

1.0 INTRODUCTION AND PROJECT LOCATION

PT Eagleview, LLC ("Applicant") retained Bristlecone Ecology, LLC ("Bristlecone") to prepare a Noxious Weed Management Plan ("Plan") for the proposed Eagleview Residential project ("Project") located in El Paso County (EPC), Colorado. The Project will consist of 38 residential lots, open space tracts, stormwater detention facilities, arterial roads, utilities, and other associated facilities and infrastructure. The Project is located on a 121-acre parcel southeast of the intersection of Raygor Road and Arroya Lane and is bounded by sparse residential development on all sides (Figure I: *Project Location Map)*. The site is located in portions of Section 26, Township 12S, Range 65W, and can be found on the U.S. Geological Survey's (USGS) Falcon NW 7.5-minute quadrangle (USGS 2020).

The Project area is located in the Foothill Grasslands ecoregion near its intersection with the Pine-Oak Woodlands in Colorado (Chapman et al. 2006). Topography of the Project consists of flat to rolling foothills grasslands about a quarter-mile from the pine-oak woodlands of the Black Forest to the northwest. 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). Vegetation cover on the Project site is generally extensive, though apparently previously disturbed, with good structure and plant diversity typical of relatively healthy vegetation communities in this ecoregion. Elevations of the Project area range between approximately 7,200 and 7,280 feet above mean sea level (AMSL). A minor tributary to Sand Creek flows through the center of the Project area and supports a well-developed complex of wetlands in the northern half of the site, while the southern half transitions to a broad, sandy swale characterized by infrequent sheet flow following precipitation events and thus fewer wetland obligates.

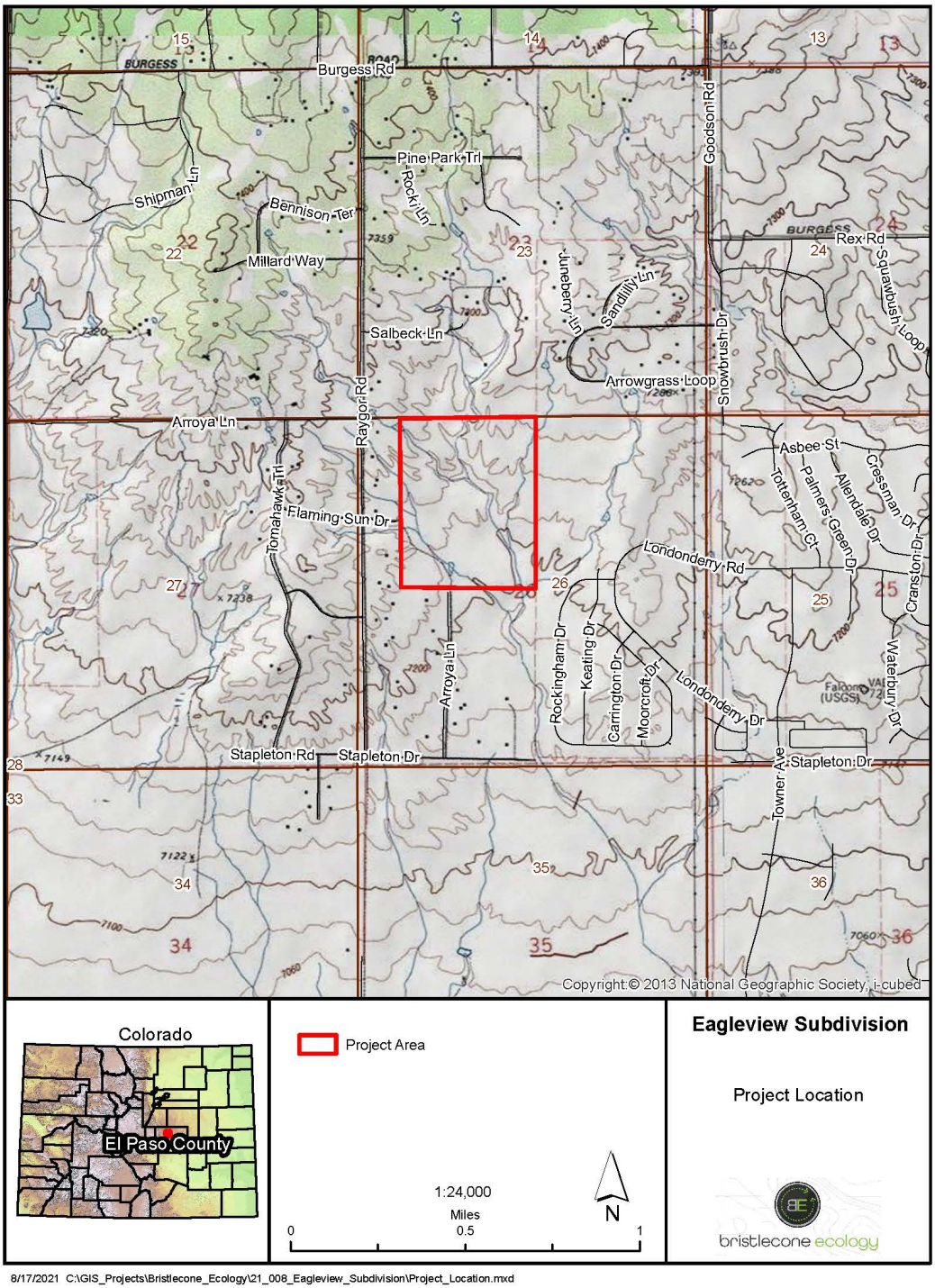

Figure 1: Project Location Map

2.0 NOXIOUS WEED MANAGEMENT BACKGROUND

The spread of invasive species roughly mirrors the rise in human travel and commerce (Mack *et al.* 2000 and Sheley *et al.* 1996). Many noxious weeds have been identified as aggressive, weather resistant, escaped ornamentals from residential landscapes (Westbrooks 1998). *The Federal Noxious Weed Act* (7 U.S.C. 2801 et seq.; 88 Stat. 2148) was enacted in 1975 in an effort to halt the spread of noxious weeds across the country. Following guidelines set forth by the *Federal Noxious Weed Act*, Colorado passed the *Colorado Noxious Weed Act* ("Act"; C.R.S. 35-5.5-103) in 1990. The Act identified noxious weeds particular to the landscape of Colorado. As defined in the Act, noxious weeds are any non-native plant that:

- aggressively invades or is detrimental to economic crops or native plant communities;
- is poisonous to livestock;
- is a carrier of detrimental insects, diseases, or parasites;
- or is detrimental, either by direct or indirect effects, to the environmentally sound management of natural or agricultural ecosystems.

The Act was amended in 2002 to require counties to establish individual management plans relevant to local municipalities. EPC developed the *El Paso County Noxious Weed Management Plan* in 2003 (updated in 2017) to identify county-level noxious weed management practices that would preserve the economic and environmental value of EPC lands (EPC 2017a).Disturbed areas are vulnerable to infestation from noxious weeds due to the aggressive nature by which noxious weeds can spread. Construction activities including clearing, grading, and excavation promote the establishment of noxious weed species before native vegetation can reestablish within the cleared area. As such, the *EPC Noxious Weed Management Plan* requires integrated management plans for any activities requiring dirt moving activities within El Paso County (EPC 2017a). Project-specific integrated management plans should include methods to prevent, control, and monitor the spread of noxious weeds and should take into account the multiple methods by which noxious weeds germinate. Annuals typically reproduce through seed which can easily attach to equipment during construction activities. Perennials often propagate through an extensive root system. Ground disturbing activities have the potential to redistribute root sections that could quickly propagate in other areas. Because of the multiple methods by which noxious weeds spread and propagate, integrated management plans should outline education and native revegetation methods, in addition to chemical control methods (EPC 2017a).

3.0 NOXIOUS WEED MANAGEMENT PLAN

3.1 Purpose and Goals

Construction of Project facilities will occur over several months. Upon completion of construction, the Project will consist of 38 residential lots, open space tracts, stormwater detention facilities, arterial roads, utilities, and other associated facilities and infrastructure. It is anticipated that noxious weeds will concentrate along road medians and highly trafficked areas within the development areas. As such, this integrated management plan includes construction and maintenance methods to prevent, control, and monitor the spread of identified noxious weed populations within the Project. It will be the responsibility of the Homeowners' Association (HOA), should one be formed, or other controlling entity, to establish covenants to prevent and control the spread of noxious weeds. Typically, an HOA will contract a licensed herbicide applicator to seasonally survey and spray for noxious weeds throughout the development as necessary. Additionally, communal landscaped areas should be regularly mowed and treated for noxious weeds. Integrated management methods shall include the following:

- surveys to inventory and map established noxious weed populations;
- sharing of data with EPC to aid in EPC level inventory;
- chemical treatment of all identified noxious weed populations;
- and periodic post-construction treatment as needed and as determined by the HOA or other controlling entity.

Management methods identified within this Plan will comply with *Chapter 6: General Development Standards of the EPC Land Development Code* (EPC 2017b), the *EPC Noxious Weed Management Plan* (EPC 2017a) and the Act (Colorado Revised Statutes 35-5.5-103). Biological control methods are not included due to the prohibition of their use on plants targeted for eradication by the Colorado Weed Management Association (CWMA) (2015). Noxious weed species targeted would be those identified in the Act, with special consideration for those species listed in the *EPC Noxious Weeds and Control Methods* (EPC 2018).

3.2 Regulated Species

The Act identifies three levels of priority for control of noxious weeds throughout the State of Colorado ("State"). The CWMA maintains an updated list of noxious weeds known to occur in the State. CWMA also maintains a "watch list" of noxious weeds that occur in proximity to State borders and/or those species with a distribution that is not yet understood (**Appendix I**: *Colorado State Noxious Weed List*). List A noxious weeds are those species targeted for eradication. List A noxious weed populations are typically isolated in nature or rare throughout much of the State (*Colorado Revised Statutes 35-5.5-103*). Eradication and reporting of List A populations is required by law (Colorado Department of Agriculture [CDA] 2006). List B species are discretely distributed throughout the State and must be eradicated, contained, or suppressed (*Colorado Revised Statutes 35-5.5-103*). EPC requires control of all List B noxious weed populations located within the Project area (EPC 2017a). List C noxious weed populations are widespread and well established. EPC requires control of List C species through education of the public and/or chemical control (EPC 2017a).

3.3 Construction

Noxious weed management protocols during construction include prevention and treatment. Prevention and treatment shall be accomplished at the Project through surveys of construction easements, followed by primary chemical treatment. Initial inventory surveys shall occur separately from treatment, but both shall be completed before initial ground disturbing activities commence.

Noxious weed surveys shall be conducted within all construction easements prior to any ground disturbing activities. Surveyors shall use GPS units to collect data on noxious weed populations. Data collected for List C populations shall include species and general coordinates of population; data collected for List A and List B populations shall include species, coordinates for the approximate center of each identified population, and the approximate radius of the infestation. EPC shall receive a map of identified noxious weed populations within the Project. Should surveyors locate List A species, the specific data collected shall be sent to EPC. Treatment type shall be selected depending on the priority rank of the noxious weed species (List A, B, or C), and the location and density of the infestation. Chemical treatment shall include herbicide application; the suggested chemical treatment protocol is described below.

List A species must be eradicated by law (USDA 2006). Should surveyors identify List A species, a plant sample shall be collected for positive identification through EPC's Environmental Division. Upon positive confirmation of a List A species, hand pulling of the population shall be performed to remove the mechanism for creation of a seed-bank. Chemical treatment shall be applied to the area and shall be selected in compliance with the *EPC Noxious Weeds and Control Methods* (EPC 2018). List B species shall be chemically treated with an herbicide selected in compliance with the *EPC Noxious Weeds and Control Methods* (EPC 2018). Herbicide selection may vary depending upon the time of year and the life cycle of the plant. All herbicide application shall occur concurrent with initial ground disturbing activities. The herbicide applicator shall treat noxious weed populations with EPC recommended chemicals (EPC 2017a). Bristlecone recommends not treating List C noxious weeds; List C noxious weeds are well established and difficult to treat since many have hardy seed beds that are not affected by herbicide application. Rather than completely eradicate List C populations, herbicide applicators manage populations with continued seasonal treatments. A more efficient protocol would be to avoid List C weeds to the greatest extent possible during construction. It is anticipated that an HOA or other controlling entity will treat all noxious or weedy species within development areas post-construction, including List C species, and will maintain a weed-free landscape within the Project.

Additional construction phase noxious weed management protocols shall include prevention and maintenance. Contractors shall prevent the spread of noxious weeds through the use of clean equipment and through treatment of all List A and List B populations concurrent with initial ground disturbing activities. Heavy equipment used on the site shall be washed and sprayed before mobilization on the Project. Doing so shall ensure that soils and seeds are not transported from other sites. Noxious weed treatment shall occur to areas slated for ground disturbance or immediately after initial ground disturbance activities. Doing so will ensure that active List A and List B noxious weed populations will become inactive and/or effectively managed throughout the construction phase of the Project.

It is anticipated that portions of the Project will be landscaped, including open spaces. Top-soil sources for landscaped areas shall be provided from native, on-site top-soil. Any salvaged top-soil piles shall be treated for noxious weeds and maintained and protected from erosion and/or noxious weed establishment during construction through Best Management Practices (BMPs) identified in the Project's Grading, Erosion, and Sediment Control (GESC) Plan.

3.5 Post-Construction

Post-construction noxious weed management protocols shall be limited to maintenance treatment, as needed and as determined by the HOA or other controlling entity. It is anticipated that any landscaped areas of the Project, including private lots, will require seasonal noxious weed treatment and maintenance. Bristlecone notes that any existing List A and List B noxious weed populations should be treated concurrent with construction. Treatment of the site concurrent with initial ground disturbing activities may halt the spread of List A and List B noxious weeds in the immediate vicinity of the Project. However, noxious weed populations may persist on the Project's periphery. It shall be the HOA's responsibility to identify and treat any persistent noxious weed populations on the Project site.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Noxious weeds are present on the Project site in several areas ranging from limited distribution to widespread. There were a few concentrations of yellow toadflax that were delineated on-site, but there were no large, monotypic stands of noxious weeds present (see **Appendix II**: *Noxious Weed Consentrations*). Other scattered populations of noxious weeds were found throughout various portions of the site. Noxious weeds that were detected during the site reconnaissance included:

List B

- Yellow toadflax (*Linaria vulgaris*)
- Canada thistle (*Cirsium arvense*)
- Scotch thistle (*Onopordum acanthium*)
- Diffuse knapweed (*Centaurea diffusa*)
- Spotted knapweed (*Centaurea stoebe*)

List C

- Common mullein (*Verbascum thapsus*)

Yellow toadflax was observed along swales and more mesic areas, while Canada thistle was sparsely distributed throughout uplands. Both diffuse knapweed and spotted knapweed were observed in abundance throughout most of the site. 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.

The Eagleview Noxious Weed Management Plan was written to comply with guidelines in the Colorado Noxious Weed Act (Colorado Revised Statutes 35-5.5-103) and the EPC Noxious Weed Management Plan. Bristlecone recommends that the Applicant conduct sitewide surveys for all noxious weed populations and treat any List A and List B noxious weed populations observed within the Project area. The HOA (or other controlling entity) shall be responsible for maintaining a weed-free property following construction. Typically, chemical treatment is applied between late spring and early fall depending on the recommended treatment protocols for each noxious weed species (EPC 2017a).

Should you have any questions regarding this or any other matter, please feel free to contact our office at (971) 237-3906.

Sincerely,
Bristlecone Ecology, LLC

Ecologist

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APPENDIX I

COLORADO STATE NOXIOUS WEED LIST

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Colorado Noxious Weeds (including Watch List), effective March 31, 2017

List A Species (25)

Common	*Scientific*
African rue	*(Peganum harmala)*
Bohemian knotweed	*(Polygonum x bohemicum)*
Camelthorn	*(Alhagi maurorum)*
Common crupina	*(Crupina vulgaris)*
Cypress spurge	*(Euphorbia cyparissias)*
Dyer's woad	*(Isatis tinctoria)*
Elongated mustard	*(Brassica elongata)*
Flowering rush	*(Butomus umbellatus)*
Giant knotweed	*(Polygonum sachalinense)*
Giant reed	*(Arundo donax)*
Giant salvinia	*(Salvinia molesta)*
Hairy willow-herb	*(Epilobium hirsutum)*
Hydrilla	*(Hydrilla verticillata)*
Japanese knotweed	*(Polygonum cuspidatum)*
Meadow knapweed	*(Centaurea nigrescens)*
Mediterranean sage	*(Salvia aethiopis)*
Medusahead	*(Taeniatherum caput-medusae)*
Myrtle spurge	*(Euphorbia myrsinites)*
Orange hawkweed	*(Hieracium aurantiacum)*
Parrotfeather	*(Myriophyllum aquaticum)*
Purple loosestrife	*(Lythrum salicaria)*
Rush skeletonweed	*(Chondrilla juncea)*
Squarrose knapweed	*(Centaurea virgata)*
Tansy ragwort	*(Senecio jacobaea)*
Yellow starthistle	*(Centaurea solstitialis)*

List B Species (40)

Common	*Scientific*
Absinth wormwood	*(Artemisia absinthium)*
Black henbane	*(Hyoscyamus niger)*
Bull thistle	*(Cirsium vulgare)*
Bouncingbet	*(Saponaria officinalis)*
Canada thistle	*(Cirsium arvense)*
Chinese clematis	*(Clematis orientalis)*
Common tansy	*(Tanacetum vulgare)*
Common teasel	*(Dipsacus fullonum)*
Corn chamomile	*(Anthemis arvensis)*
Cutleaf teasel	*(Dipsacus laciniatus)*
Dalmatian toadflax, broad-leaved	*(Linaria dalmatica)*
Dalmatian toadflax, narrow-leaved	*(Linaria genistifolia)*
Dame's rocket	*(Hesperis matronalis)*
Diffuse knapweed	*(Centaurea diffusa)*

List B Species (40) continued

Common	Scientific
Eurasian watermilfoil	*(Myriophyllum spicatum)*
Hoary cress	*(Cardaria draba)*
Houndstongue	*(Cynoglossum officinale)*
Jointed goatgrass	*(Aegilops cylindrica)*
Leafy spurge	*(Euphorbia esula)*
Mayweed chamomile	*(Anthemis cotula)*
Moth mullein	*(Verbascum blattaria)*
Musk thistle	*(Carduus nutans)*
Oxeye daisy	*(Leucanthemum vulgare)*
Perennial pepperweed	*(Lepidium latifolium)*
Plumeless thistle	*(Carduus acanthoides)*
Russian knapweed	*(Acroptilon repens)*
Russian-olive	*(Elaeagnus angustifolia)*
Salt cedar	*(Tamarix chinensis, T. parviflora, and T. ramosissima)*
Scentless chamomile	*(Tripleurospermum perforata)*
Scotch thistle	*(Onopordum acanthium, O. tauricum)*
Spotted knapweed	*(Centaurea stoebe)*
Spotted x diffuse knapweed hybrid	*(Centaurea x psammogena = C. stoebe x C. diffusa)*
Sulfur cinquefoil	*(Potentilla recta)*
Wild caraway	*(Carum carvi)*
Yellow nutsedge	*(Cyperus esculentus)*
Yellow toadflax	*(Linaria vulgaris)*
Yellow x Dalmatian toadflax hybrid	*(Linaria vulgaris x L. dalmatica)*

List C Species (16)

Common	Scientific
Bulbous bluegrass	*(Poa bulbosa)*
Chicory	*(Cichorium intybus)*
Common burdock	*(Arctium minus)*
Common mullein	*(Verbascum thapsus)*
Common St. Johnswort	*(Hypericum perforatum)*
Downy brome	*(Bromus tectorum)*
Field bindweed	*(Convolvulus arvensis)*
Halogeton	*(Halogeton glomeratus)*
Johnsongrass	*(Sorghum halepense)*
Perennial sowthistle	*(Sonchus arvensis)*
Poison hemlock	*(Conium maculatum)*
Puncturevine	*(Tribulus terrestris)*
Quackgrass	*(Elymus repens)*
Redstem filaree	*(Erodium cicutarium)*
Velvetleaf	*(Abutilon theophrasti)*
Wild proso millet	*(Panicum miliaceum)*

Watch List Species (24)

Common	*Scientific*
Asian mustard	*(Brassica tournefortii)*
Baby's breath	*(Gypsophila paniculata)*
Bathurst burr, Spiney cocklebur	*(Xanthium spinosum)*
Brazilian egeria, Brazilian elodea	*(Egeria densa)*
Common bugloss	*(Anchusa officinalis)*
Common reed	*(Phragmites australis)*
Garden loosestrife	*(Lysimachia vulgaris)*
Garlic mustard	*(Alliaria petiolata)*
Himalayan blackberry	*(Rubus armeniacus)*
Hoary alyssum	*(Berteroa incana L.)*
Japanese blood grass/cogongrass	*(Imperata cylindrica)*
Meadow hawkweed	*(Hieracium caespitosum)*
Onionweed	*(Asphodelus fistulosus)*
Purple pampas grass	*(Cortaderia jubata)*
Scotch broom	*(Cytisus scoparius)*
Sericea lespedeza	*(Lespedeza cuneata)*
Swainsonpea	*(Sphaerophysa salsula)*
Syrian beancaper	*(Zygophyllum fabago)*
Water hyacinth	*(Eichhornia crassipes)*
Water lettuce	*(Pistia stratiotes)*
White bryony	*(Bryonia alba)*
Woolly distaff thistle	*(Carthamus lanatus)*
Yellow flag iris	*(Iris pseudacorus)*
Yellow floatingheart	*(Nymphoides peltata)*


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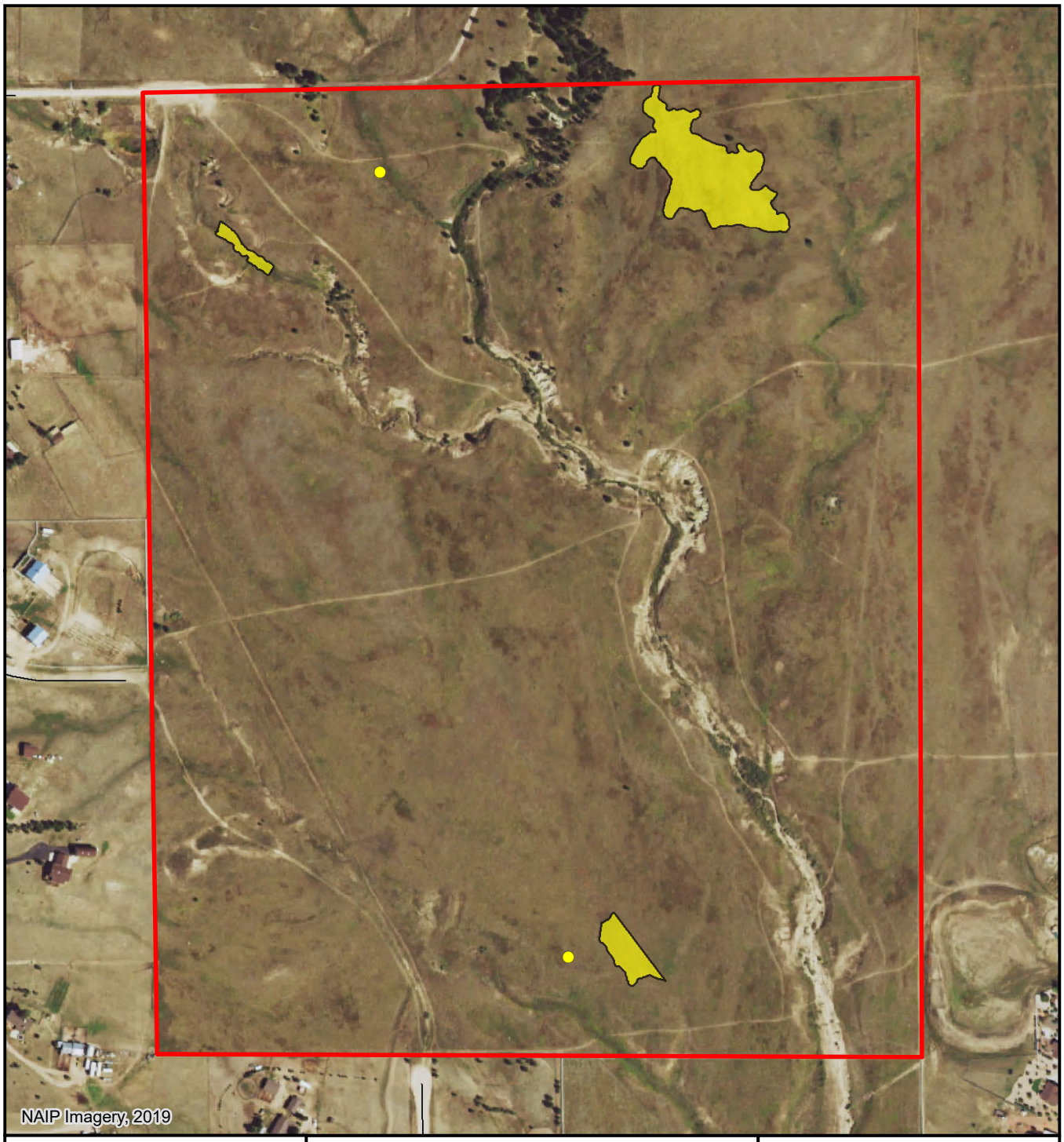
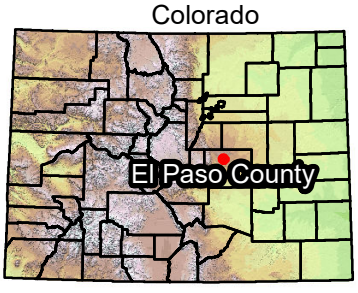
APPENDIX II

NOXIOUS WEED CONCENTRATIONS





Project Area

Yellow toadflax

Yellow toadflax

Feet
0
400
800

N

Eagleview Subdivision

Noxious Weed Concentrations

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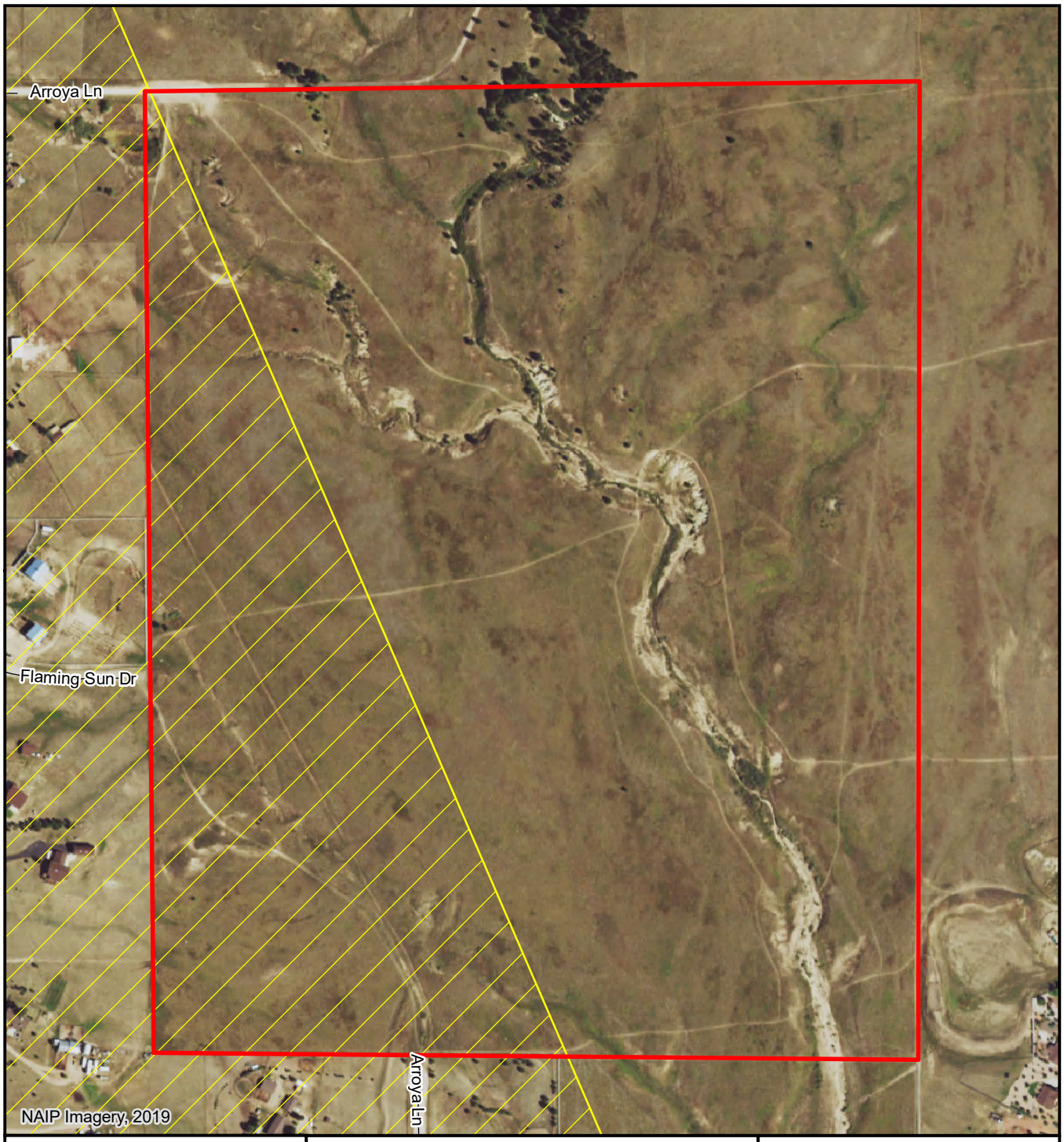
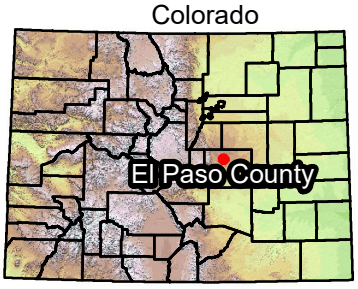
APPENDIX IV

PREBLE'S MEADOW JUMPING MOUSE BLOCK CLEARANCE MAP



Colorado



Project Area

Colorado Springs PMJM Block Clearance Zone

N

Feet

0 400 800

Eagleview Subdivision

Preble's Meadow Jumping Mouse Block Clearance

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